ETLA
ELINKEINOELÄMÄN TUTKIMUSLAITOS
The Research Institute of the Finnish Economy
Lönnrotinkatu 4 B 00120 Helsinki Finland

Sarja B 144 Series
Sitra 203

Mika Pajarinen – Petri Rouvinen –
Pekka Ylä-Anttila

SMALL COUNTRY STRATEGIES IN GLOBAL COMPETITION

Benchmarking the Finnish Case

PIENEN AVOTALOUDEN STRATEGIAVAIHTO-EHDOT GLOBAALISSA KILPAILUSSA
Suomi kansainvälisessä vertailussa
(suomenkielinen yhteenveto)

Publisher:
Taloustieto Oy in association with
ETLA, The Research Institute of the Finnish Economy, and
Sitra, The Finnish National Fund for Research and Development.

Helsinki 1998

Cover: MainosMayDay, Vantaa

ISBN 951-628-283-0
ISSN 0356-7443 (ETLA)
ISSN 0785-8388 (Sitra)

Printed in Tummavuoren Kirjapaino, Vantaa 1998

PAJARINEN, Mika – **ROUVINEN**, Petri – **YLÄ-ANTTILA**, Pekka. **SMALL COUNTRY STRATEGIES IN GLOBAL COMPETITION – BENCHMARKING THE FINNISH CASE**. Helsinki, Finland: *Taloustieto Oy* in association with *ETLA*, *The Research Institute of the Finnish Economy*, and *Sitra*, *The Finnish National Fund for Research and Development*, 1998. 162 pages (including opening pages and appendices). (ETLA: B Series, ISSN 0356-7443, no 144. *Sitra*, ISSN 0785-8388, no 203.). ISBN 951-628-283-0.

ABSTRACT: By *Globalization* we refer to the latest stage of internationalization since the 1980s, initiated by widespread deregulation of financial markets and competitive policies as well as by advances in information and communication technologies (ICTs). In our discussion *global competitiveness* at the national level centers around the question of *how can a country be an attractive home base for MNEs' high value-added activities.*

Despite the potential drawbacks and uncertainties of globalization, hitherto its effects have mainly been beneficial. The benefits are, however, unevenly distributed across countries and economic branches. Technology-driven growth nevertheless offers abundant opportunities to advanced small open economies such as Finland.

Finland's shift from a factor- to a knowledge-driven economy has been rapid; among other things, its R&D-intensity is currently the 2nd highest in the world, and it is one of the leading countries in ICTs. The high unemployment rate manifests that some resources are still underutilized, but the situation is improving. Although the Finnish economy has been able to renew itself considerably in the past few decades, the economic structures are still somewhat inflexible. Thus, fiscal measures will be needed in future economic downturns as well. The Finnish position in global competition is quite good, but inflexibility and a large public debt may cause problems in periods of slow economic growth.

KEY WORDS: globalization, competitiveness, foreign direct investment, multinational enterprises, global competition.

PIENEN AVOTALOUDEN STRATEGIAVAIHTOEHDOT GLOBAALISSA KILPAILUSSA – SUOMI KANSAINVÄLISESSÄ VERTAILUSSA.

TIIVISTELMÄ: Tutkimuksessamme *globalisaatiolla* tarkoitetaan 1980-luvulla alkanutta kansainvälistymisen viimeisintä vaihetta, jonka käynnistivät maailmanlaajuinen raha- ja pääomamarkkinoiden ja kilpailuolojen vapauttaminen sekä osin myös informaatio- ja kommunikaatioteknologian edistysaskeleet. Keskustelussamme *kansallisen globaalin kilpailukyvyn* peruskysymys on: *miten tehdä maasta houkutteleva sijaintipaikka monikansallisten yritysten korkean jalostusarvon toiminnoille?*

Globalisaatioon liittyvistä uhista ja epävarmuustekijöistä huolimatta sen tähänastiset vaikutukset ovat olleet pääsääntöisesti myönteisiä. Maittain ja aloittain hyödyt jakautuvat kuitenkin varsin epätasaisesti. Teknologiavetoinen kasvu tarjoaa Suomen kaltaisille edistyksellisille avotalouksille monia mahdollisuuksia.

Suomi on nopeasti siirtymässä tuotannontekijäkeskeisestä tietokeskeiseen aikakauteen: T&K-intensiteettimme on jo maailman toiseksi korkein ja maamme on informaatioteknologian johtavia maita. Mm. edelleen korkea työttömyys kuitenkin osoittaa, että resurssit ovat vajaakäytössä. Voimakkaasta rakennemuutoksesta huolimatta talouden perusrakenteet ovat edelleen varsin jäykät. Niinpä tarvitsemme julkisen talouden sopeuttamistoimenpiteitä myös tulevissa taantumissa. Suomen asemaa globaalissa kilpailussa voidaan pitää hyvänä, mutta suuri julkinen velka ja rakenteelliset jäykkyystekijät ovat uhkina talouskasvun hidastuessa.

ASIASANAT: globalisaatio, kilpailukyky, suorat sijoitukset, monikansalliset yritykset, kansainvälinen kilpailu.

CONTENTS

FOREWORD

The world economy is undergoing a fundamental structural change, not unlike the two previous industrial revolutions. Economic globalization and technological progress can be identified as the engines of change. In order to be successful in global competition, firms and societies must develop new ways of conducting business and adjust their socio-institutional structures.

The *Globalization, Welfare, and Employment* program, initiated and financed by *Sitra – The Finnish National Fund for Research and Development*, studies the challenges globalization imposes on the Finnish economy and society. Some of the key findings of this project are presented in this book.

Pajarinen, Rouvinen, and Ylä-Anttila address one of the most important questions on the future prosperity of Finland: *how can it be/become an attractive location for multinational enterprises' high value-added activities?* The issue is studied i.a. by benchmarking framework conditions of industry in Finland against those in competing countries. The authors also discuss the concept of competitiveness, facets of economic globalization, as well as policy issues in the 'borderless' world. In addition, they provide an interesting analysis about the contribution of internationalization to the growth of the Finnish economy, and the ways in which the current changes in the world economy will affect Finland.

In recent years, financial, product, and factor markets have integrated rapidly across borders and become more volatile. As a result, the world markets will have an increasing impact on Finland and the other countries participating in the globalization process. We need a better understanding of these global forces. This book is indeed timely.

Sitra, The Finnish National Fund for Research and Development
October, 1998

PREFACE

We attempt to provide new insights to the globalization phenomenon in a small open economy, and, at the same time, to present to the general public results of various research projects carried out at our institute and elsewhere. Although we benefited from the work of many of our colleagues at *ETLA*, we would like to single out *Jyrki Ali-Yrkkö* for his work in the field. We also thank him for his helpful comments and suggestions.

It has been a great pleasure to work in a multidisciplinary globalization project initiated and financed by *Sitra*. We were delighted with the seminars and discussion sessions of the project group. We are especially grateful to Professor *Raimo Väyrynen*, the coordinator of the project, for his comments and inspiring way of steering the group. In the course of our work, the group members, *Pertti Alasuutari*, *Antti Hautamäki*, *Jari Hyvärinen*, *Timo Hämäläinen*, *Antti Kasvio*, *Ari Nieminen*, *Paavo Okko*, *Jussi Raumolin*, and *Petri Ruuska*, have provided us valuable feedback.

We are solely responsible for the possibly remaining shortcomings and/or errors.

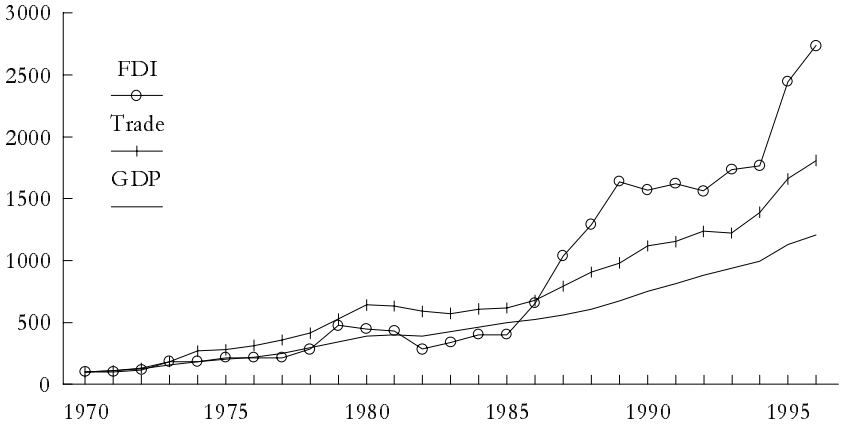
ETLA
October, 1998

Mika Pajarinen Petri Rouvinen Pekka Ylä-Anttila

1 INTRODUCTION

In the past two decades the worldwide value of foreign direct investment (FDI) has increased nearly sixfold. Meanwhile world trade has tripled and aggregate output doubled (Figure 1.1). These figures indicate how rapidly internationalization of businesses has progressed. Currently, major industrial enterprises in virtually all developed economies operate globally. Among large Nordic manufacturing firms, foreign employment already accounts for more than half of the total; sales abroad generate two-thirds of the turnover.

Figure 1.1 Value of World Trade, Output and FDI (1970=100).



Source: UN (1997), IMF, and The World Bank.

Internationalization of business is by no means a new phenomenon. It has been argued that the current globalization trend is only a continuation of the developments before the First World War (see, e.g., Bairoch & Kozul-Wright, 1996; Härtel et al., 1996). During the half century before 1913 the world economy was indeed integrating rapidly through the growth of international trade and foreign direct investment. In Western Europe merchandise exports increased to nearly 20% of GDP, a peak which was not surpassed until the 1990s (Bairoch & Kozul-Wright, 1996).

In many respects the current stage of globalization is nevertheless unique. *First*, the number of countries participating in it is much larger than before World War I. *Second*, previously globalization was not based on widely accepted and implemented policies towards free trade and unrestricted capital movements. *Third*, technological developments, particularly in information and communication technologies (ICTs), have opened new ways for conducting business on a world-scale. Thus, by *globalization* we refer to the latest stage of internationalization that started during the 1980s; this new phase was initiated by widespread deregulation of financial markets and competitive policies as well as by advances in ICT.[1]

Globalization of businesses and rapid advances in ICTs are interrelated. On one hand information and communication technologies make it possible to effectively decentralize and control global operations of the multinational enterprises (MNEs) – on the other hand global competition is a major driving force behind technological innovation and rapid diffusion of ICT.

Foreign direct investment and multinational enterprises have a central role in the globalization process. MNEs already control three-fourths of world commodity trade and their share in service trade is increasing. Furthermore, MNEs account for three-fourths of all industrial R&D in the OECD countries (see Archibugi & Michie, 1995; Chang, 1995; Stopford, 1997).

Finnish companies compete in global markets. So does Finland, as a nation, although in a different manner. A firm's ultimate objective is to maximize a discounted stream of profits. A nation's objective is to maximize the welfare of current and future citizens. In what follows, we discuss how Finland competes in the increasingly global environment. Global competitiveness at the national level centers around the question of *how can a country be an attractive home base for MNEs' high value added activities*.

---

[1] OECD (1997c, p. 7) gives a formal definition of industrial globalization, which partially defines what we have in mind: "Industrial globalisation refers to an evolving pattern of cross-border enterprise activities; these can include international investment, trade and strategic alliances for product development, production, sourcing, and marketing. International activities enable firms to enter new markets, to exploit their technological and organisational advantages, and to reduce business costs and risks. Underlying this expansion – and, in part, driven by it – are technological advantages, the liberalisation of markets and increased mobility of production factors (OECD, 1996)."

In our previous research, we tackled the issue of national competitiveness as it is currently understood (see, e.g., Hernesniemi, Lammi, & Ylä-Anttila, 1996; Rouvinen, 1997; Rouvinen & Ylä-Anttila, 1997). We have also touched upon the issue of globalization at the firm level, both from the point of view of Finnish MNEs' activities abroad (Ali-Yrkkö & Ylä-Anttila, 1997b) and from the point of view of foreign MNEs' activities in Finland (Pajarinen & Ylä-Anttila, 1998). In this volume, we summarize some findings of our previous research and expand the discussion on globalization to the national level.

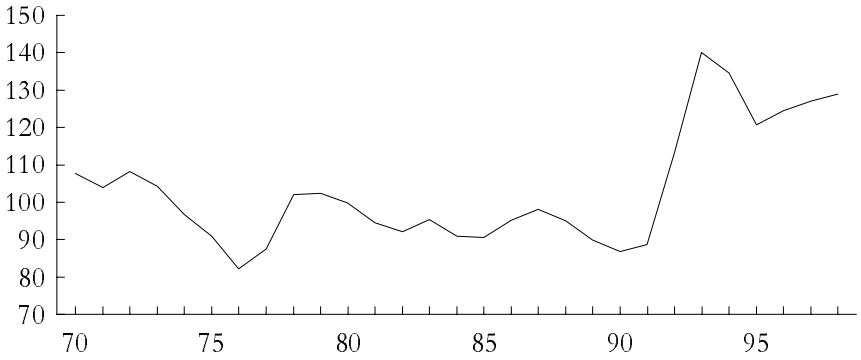
In the following Section 2, we discuss the nature of competitiveness and suggest a new definition, which explicitly incorporates our thoughts on the role of multinational enterprises in national economies. In Section 3, we give a broad overview of the globalization phenomenon worldwide. Section 4 gives a more detailed discussion on globalization in Finland and presents aggregate and industry-level figures. Section 5 focuses on globalization of firms with particular reference to Finland. Although policy issues are not our main focus in this volume, we nevertheless discuss some policy guidelines in Section 6. Section 7 concludes.

2 COMPETITIVENESS IN THE GLOBAL ARENA

2.1 Current Views on Competitiveness

Competitiveness has traditionally been viewed as a short-run phenomenon on a macroeconomic level with emphasis on relative costs. According to this view, factor prices are the major determinants of competitiveness. Hence, relative prices of labor, capital or energy have been the main focus of the debate. If this view is accepted, governments could foster competitiveness by simply (1.) curbing increases in factor prices and/or by (2.) compensating enterprises for any discrepancies from international factor price levels.

Figure 2.1 Relative Unit Labor Cost of Finnish Industry.



Source: *The Finnish Economy* (ETLA's quarterly forecasting publication).
Note: Defined as the ratio of OECD and Finnish unit labor costs. A higher index value indicates that Finland is currently more 'cost competitive' relative to the other OECD countries. Exchange rate adjusted. 1976–95 average=100.

Some economists still consider relative unit labor costs as *the* measure of competitiveness. Figure 2.1 indicates that accepting this would mean that Finnish competitiveness *increased* tremendously as the country entered the economic recession at the turn of the decade. Yet, the first half of the 1990s was undeniably the most severe

crisis in Finland's postwar history with deteriorating prosperity and considerable human suffering. These are hardly attributes commonly associated with a 'competitive' nation.

Relative factor prices *do* matter in the short term. In the long term, they have to be complemented with higher productivity and more advanced technology. In fact, it can be argued that excessively favorable cost conditions, if created through the implementation of protective policies and subsidies, are likely to harm competitiveness in the long-run since, under excessively favorable circumstances, there are fewer incentives to adapt to changes in market conditions or to exploit the latest technology.

Productivity is, to a large extent, an outcome of adoption and efficient utilization of technology and knowledge. Technical advance, as well as policies aimed to influence it, has to be considered with a long-run perspective in mind. Individual firms are the decision-making units as far as technological choices and business strategies are concerned. Despite globalization, the framework conditions for these decisions are still imposed by a nation-state.

Competitiveness cannot be discussed and analyzed without realizing its multidimensionality. It is worthwhile to distinguish at least three levels of aggregation in the analysis of competitiveness:

- Nations or countries,
- Industries or industrial clusters,[2] and
- Firms.

Professor Paul Krugman argues against overemphasizing competitiveness and even calls it *The Dangerous Obsession* (Krugman, 1994). By this he means that focusing on relative trade performance draws the attention away from the fact that two trading countries most likely benefit from the exchange regardless of which one is the dominant player.

Nations should compete in offering the highest possible standards of living to their citizens. Improvements in this national

---

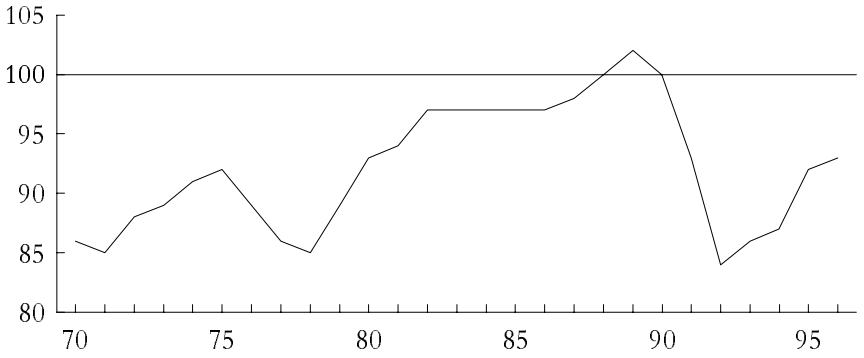
[2] The term 'cluster' is sometimes used, instead of more traditional terms of a 'sector' and an 'industry', in order to emphasize the evolutionary nature of a socio-economic industrial complex. Sharp distinctions between branches are avoided – the focus is rather on uncovering mutual connections and interaction among firms, authorities, educational institutions, and other entities that form the cluster. The closest counterparts for the term are an 'industrial center of excellence' and an 'industrial complex'.

prosperity ultimately depend on the productivity growth of an economy – thus measuring 'competitiveness' across countries can be viewed as a benchmark of their abilities to generate this productivity growth given the operating environment.

Competitiveness of a Nation

A competitive country or nation has the ability to achieve and sustain high growth rates of GDP per capita. Figure 2.2 shows that Finland did relatively well according to this measure until the recent economic slump; from 1970 to 1990 the margin between Finnish GDP per capita and the OECD average narrowed steadily, and in 1988 Finnish GDP per capita surpassed the OECD average. However, around the turn of the decade the picture changed radically. Although the Finnish economy is currently recovering, the peak of 1989 seems hard to reach.

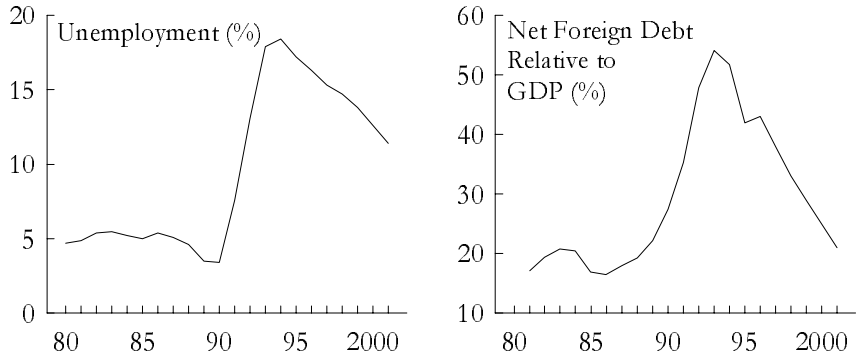
Figure 2.2 Finnish GDP per Capita Index.



Source: ETLA Database – OECD Annual National Accounts.
Note: Purchasing power parity adjusted, i.e., measured in terms of 'what money can buy'. An index value above 100 means that the Finnish PPP adjusted per capita GDP is above the OECD average. A higher index number is 'better' from the national perspective. OECD average=100.

Besides high GDP per capita, two additional qualifications can be imposed on national competitiveness: high employment and long-run external balance of the economy (NOU, 1996). Finnish performance on these two accounts (Figure 2.3) is not very flattering even though *The Research Institute of the Finnish Economy* (ETLA) predicts that the situation on both accounts will improve considerably in the next few years.

Figure 2.3 Finnish Net Foreign Debt and Unemployment Rate.



Source: *The Finnish Economy* (ETLA's quarterly forecasting publication) 2/97.

One simple measure for the competitiveness of a nation is its level of total factor productivity, which is to a growing degree determined by technology and knowledge. In this comparison, Finland shines – partly due to a relatively poor starting point (Table 2.1).

Table 2.1 Productivity Growth in the Business Sector: OECD Rankings.

	1960-73	1973-79	1979-95
1. Ireland	4.6	3.4	2.6
2. Finland	**4.0**	**1.9**	**2.5**
… …	…	…	…
6. Denmark	2.3	0.9	1.3
… …	…	…	…
9. Japan	5.4	1.1	1.1
10. Netherlands	3.4	1.7	1.1
11. Sweden	2.0	0.0	1.0
… …	…	…	…
15. USA	2.5	0.2	0.5
… …	…	…	…
18. Norway	2.0	1.7	-0.1
OECD (20)	3.3	0.8	0.8

Source: OECD (1996c, p. 60 – modified).
Note: Average annual percentage changes of total factor productivity (TFP). Sorted in descending order according to the 1979–95 productivity growth. Comparison includes 20 OECD countries; some are excluded from this table.

Especially in high-income industrialized countries, such as Finland, future competitiveness can only be based on continuous advances in productivity, technology development, and upgrading of skills and competencies. This argument can be supported by comparing employment trends in manufacturing (Table 2.2). With the exception of Canada, the employment composition in manufacturing has clearly shifted towards skilled professions. With the exceptions of Italy and Sweden, low-wage jobs have accounted for a smaller and smaller share of manufacturing employment.

Table 2.2 Employment Trends in Manufacturing, 1970–94 Average Annual Percentage Changes.

	Total	Skilled	Unskilled	High-Wage	Med.-Wage	Low-Wage
Australia	-0.7	-0.1	-1.3	-0.6	-0.4	-1.1
Canada	0.3	0.3	0.3	1.4	0.3	0.0
Denmark	-0.8	-0.3	-1.3	0.8	-0.5	-1.5
Finland	**-1.3**	**-0.3**	**-2.1**	**1.3**	**-0.6**	**-2.7**
France	-1.2	-0.4	-1.8	-0.6	-1.1	-1.5
Germany	-0.8	-0.5	-1.1	0.4	-0.7	-1.5
Italy	-0.7	-0.4	-0.9	-1.1	-0.4	-0.8
Japan	0.2	0.9	-0.2	1.2	0.4	-0.3
Netherlands	-1.5	-1.1	-2.1	-0.8	-1.1	-2.4
Norway	-1.5	-0.8	-2.1	0.2	-1.3	-2.1
Sweden	-1.5	-0.8	-2.4	0.5	-1.5	2.2
UK	-2.3	-1.7	-2.9	-2.0	-2.4	-2.4
USA	-0.1	0.0	-0.3	-0.1	0.1	-0.5
OECD (19)	-0.3	0.1	-0.7	0.2	-0.2	-0.7

Source: The OECD Observer, No. 200 June/July 1997, p. 8.

Competitiveness of Industries and Industrial Clusters

An industry or an industrial cluster can be said to be competitive if it has achieved a high market share in a competitive international market without receiving subsidies or sacrificing profitability.

Finland has traditionally specialized in fairly slow growing markets and in commodities exploiting natural endowments. Finnish firms have performed relatively well in these markets, although success has occasionally been backed up with currency devaluation. This pattern has changed, since adjusting the exchange rate is no

longer a viable policy option. On the other hand, the Finnish resource base has also changed radically as highly educated new generations have entered the labor force; over time this will have an effect on the sectoral composition of the economy. The final report of *The Competitive Advantage of Finland* -project (Hernesniemi et al., 1996) predicts a radical change in the Finnish industrial structure. The study foresees that by the year 2010, the combined size of the knowledge-intensive clusters (telecommunications, well-being & environment) will be equal to that of the two previously dominant ones (basic metal & forest).

International specialization by industrial branch gives some idea of the strengths and weaknesses of competitive positions. That is why considering specialization patterns is relevant from the policy point of view.

Figure 2.4 shows that Finnish strengths are still in forest-related industries, but to a lesser extent than before. In the radio, TV & communication equipment industry, which is one of the so-called *high-tech* branches, Finland has surpassed the average export specialization of OECD countries. Specialization growth has been swift in the office & computing machinery industry, another high-tech branch, although Finland is still below the borderline value of zero.

In the future, international specialization and location of production will largely be based on created factors of production (education, technology, competencies, skills, etc.) rather than on traditional price-driven comparative advantage. It has been shown that especially technology-intensive industries tend to cluster geographically, creating *industrial 'Hollywoods'* or *clusters*, due to positive external economies associated with certain industrial milieus.

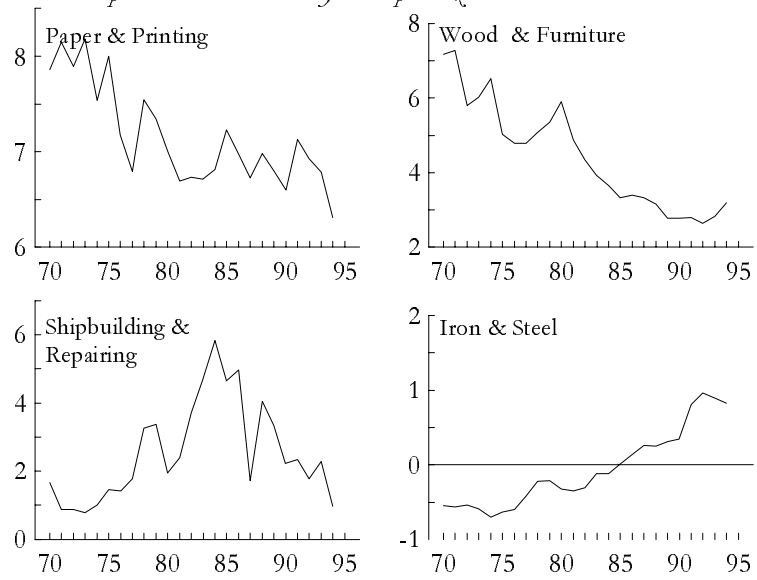
Competitiveness of Firms

It is firms that ultimately compete in the marketplace, not nations or industries. The competitiveness of firms is, however, affected by various features of the operating environment. As authorities largely set these framework conditions, there is an important connection between firm-level performance and government policies.

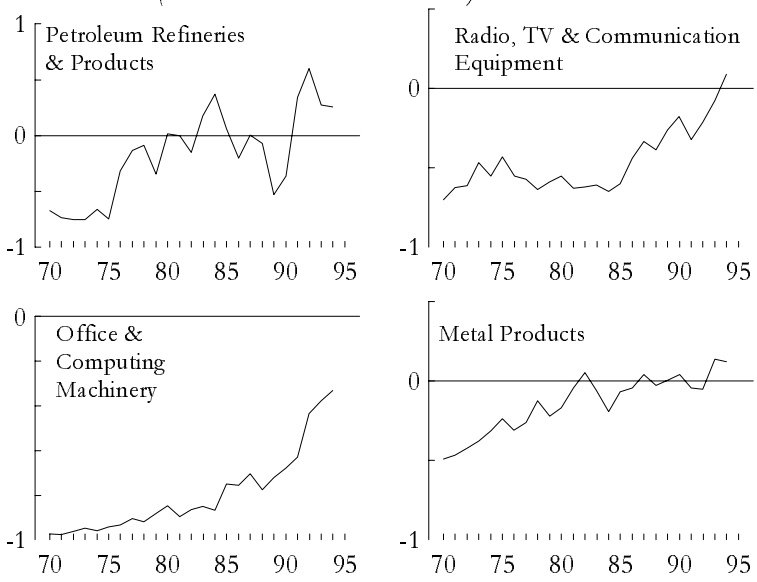
International market shares and profitability measure competitiveness of firms (Table 2.3). The success of firms located in a given country partly reflects the success of national policies.

Figure 2.4 Finnish Industry-Level Specialization in Exports.

In their exports Finns are currently most specialized in these industries...



But in the past few decades ('70-'94) specialization has shifted towards these industries (in addition to Iron & Steel above)...



Source: OECD (1997e), calculations by the authors.
Note: If Relative Specialization Index (RSI) is above 0, Finland is specialized in that industry. Formula: RSI={the country's exports in the industry/the country's total exports)/(OECD exports in the industry/Total OECD exports)-1}.

Calculating market shares, as is done in Table 2.3, is somewhat arbitrary since rankings clearly depend on how the markets are defined. Forest-related product segments are perhaps the only ones where Finnish companies are unquestionably global market leaders even though several others also make our list.

Table 2.3 Some Finnish Companies Commanding a Large Global Market Share in 1996.

Company	Sample Product	Global Market Share	Return on Inv. (Group)
Polar Electro	Heart rate monitor	80%	50%
Vaisala	Radio probe for weather forec.	80%	32%
Rapala Group	Fishing lures	40%	54%
Valmet Paperikoneet	Paper Machines	30%	25%
UPM-Kymmene	Light Weight Coated Paper	30%	10%
Timberjack	Forest tractors	30%	18%
Datex	Anestesia equipment	25%	18%
Nokia	Cellular phones	20%	23%
Wärtsilä Diesel	Diesel power plants	20%	18%
Tamrock	Hard rock drills	20%	11%

Source: Subjective expert estimates. ETLA Database – Financial Statements and Key Figures of Top 500 Corporations in Finland by *Talouselämä*.

Shortcomings of Current Views

The above section has outlined some aspects of a country's competitiveness according to the traditional, and still prevailing, thinking. In the discussion above, it is assumed that firms are associated with some nationality and mainly carry out their activities in that country. At this point it is still somewhat unclear what national competitiveness in fact means in the global environment.

In a world of mobile factors of production, the scope of policies has narrowed. Competition between nations is moving more and more towards factor markets. In the future, nations will actually compete for internationally competitive firms, since foreign direct investments by multinational enterprises imply transfers of technology and, in most cases, they also mean new jobs.

Finland is very dependent on its exports. We have not, however, been very keen on attracting foreign direct investment. Major fac-

tors behind Finland's relative unattractiveness to foreign investors are: distant location, small domestic market, strange language and culture, harsh climate, high price and cost levels, as well as cautious attitudes towards foreigners.

2.2 Towards a New Definition – National Competitiveness and Globalization of the World Economy

Currently, most firms in the world have a 'citizenship', i.e., they are clearly rooted in some national business environment where their key operations are located. While this will continue to be the case for the majority of companies in the near future, economic power is shifting towards MNEs without clear national identities.

In the global environment, a broad range of factors, e.g., industrial, financial, technological, commercial, administrative, and cultural skills, have to be mobilized in order to be competitive (Hatzichronoglou, 1996, p. 7); all of these skills may not be available locally. Also, manufacturing inputs commonly come from different countries: OECD (1996a, p. 10) notes that cross-national sourcing of intermediate inputs account for "...at least one-half of all imports by major countries".

Table 2.4 Declining Costs of Transportation, Communication, and Computer Power.

	Average air transportation cost per passenger mile (in 1990 $)	Cost of a 3-minute phone call from New York to London (in 1990 $)	Relative cost of computing power (1990=1,000)
1960	0.24	45.86	125 000
1970	0.16	31.58	19 474
1980	0.10	4.80	3 620
1990	0.11	3.32	1 000

Source: *Mastering Global Business* (Financial Times): IMF World Economic Outlook 1997, Financial Regulation in the Global Economy (Brookings), US Department of Commerce Computer Price Index.

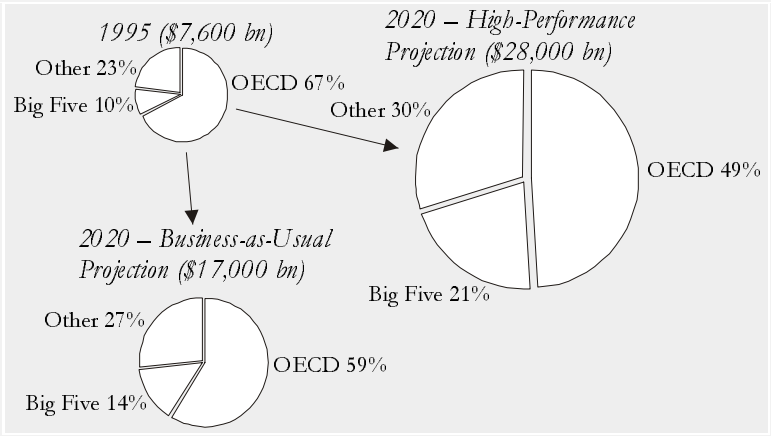
Almost surely there is no single place in the world that would be an ideal location *in every respect* for a specific company or all of its key activities. As the relative importance of transportation and

communication costs decreases (Table 2.4), firms spread their value-added activities across the globe to places that offer the best possible environment for a specific function. Also, shorter innovation times, faster product cycles, and escalating development costs call for globally dispersed business activities (OECD, 1996a).

Box 2.1 What Does the Future of the Global Economy Look Like?

Taniguchi & West (1997) foresee a tremendous growth of the World Economy in the next 25 years, especially if the OECD countries are able to carry out much needed structural reforms and more of the non-OECD countries are able accumulate sufficient social, human, and physical capital to compete with the industrialized countries. The figure below gives a conventional projection ('Business-as-usual') and a vision of the realistic possibility of the world economy ('High-performance').

Figure: World Trade Shares in 1992 $.



Source: Taniguchi and West (1997, p. 6 – modified).

The optimistic scenario would mean that in 2020 the OECD living standards would be 80% and non-OECD living standards 270% higher than in 1995. The weight of the global economy would shift towards non-OECD countries (40% in 1995 versus 60% in 2020): the 'Big Five', Brazil, China, India, Indonesia, and Russia, would account for one-third of world GDP. This forecast will be fulfilled only if governments are able to carry out reforms swiftly and resist protectionist pressures. Reversal of the current globalization trend would mean that not even the 'business-as-usual' projection would be feasible. (Taniguchi & West, 1997).

In the 'doomsday scenario' China's food self-sufficiency would decline and there would be a major increase in world food prices. In the more positive scenarios, the environmental effects of globalization are worrisome (Bouin & O'Connor, 1997).

Against this background, it is clear that some of the traditional indicators of competitiveness, calculated by and large on a national basis, are losing their explanatory power. Thus, we have to reexamine the concept of national competitiveness. In an ongoing study of global competitiveness, the OECD Secretariat divides the literature on the issue into four groups (As reported in Hatzichronoglou, 1996, p. 19):

1. *The engineering approach*. Competitiveness depends on firms adopting the best practice;
2. *The environmental/systematic approach*. Competitiveness is seen as a matter of optimizing the environment for industry;
3. *The capital development approach*. Competitiveness depends on the economy's capacity to accumulate human and physical capital;
4. *The eclectic/academic approach*. More research is needed.

Even though we agree that competitiveness at the national level remains an ill-defined concept, thus accepting group four, we nevertheless suggest a definition that combines aspects of the first three groups.

The engineering approach is right in arguing that firms and their behavior are at the heart of national competitiveness. According to this approach, competitiveness can be understood as a country's ability to maximize returns on all factors of production, e.g., through high productivity and efficient corporate governance measures. This ability in turn relates to *the environmental or systematic approach* because the returns on all factors of production can be maximized on a sustained basis only by providing appropriate framework conditions.[3] In accordance with *the capital development approach,* it should be noted that a country needs a certain amount of productive assets even in the emerging information age. In the course of the information revolution, the relative role of physical capital has, however, decreased and human capital has gained ground. As discussed above, physical capital has become increasingly footloose. Even though human capital is also mobile to some extent, it is considerably less so. Thus, it can be argued that domestic human capital is one of the important framework conditions a

[3] Returns on various factors can be temporary boosted through direct government measures – subsidies, excessive public spending, exchange rate manipulation, etc. – but in the long-run these strategies are not viable.

country can offer. Therefore, we would perhaps rather title group three as the 'human capital development approach'. In our opinion, the *global competitiveness of a nation* can be defined as follows:

The ability of a nation-state to continuously attract high value-added activities of private enterprises worldwide in such a way that all factors of production are fully employed, earn high returns and long-term external balance of the country is maintained. This is reached on a sustainable basis by offering appropriate framework conditions and sufficient pools of advanced factors of production.

We will emphasize over and over again that firms compete in the marketplace, and thus competitiveness is essentially a firm-level concept. As can be inferred from our definition, competitiveness at the national level is realized through firms.

Hirsch & Cherniawski (1997) make the distinction between various levels of aggregation by discussing *comparative advantage*, competitiveness at the national level, and *competitive advantage*, competitiveness at the firm level. In accordance with our definition, they state that to some extent countries and national governments set the operating environments and factor conditions for private enterprises by establishing legal and regulatory frameworks, supporting the educational system, and providing infrastructure.

As discussed above, factors vary in their cross-border mobility: financial capital is highly mobile, labor less so, while climate, infrastructure, and some natural resources are immobile. On the other hand, there are firm-specific assets, ownership ('O') advantages in Dunning's (1993) terminology (Box 3.6), which are immobile between firms but can be exploited in different countries by the same organization. Interaction between country- and firm-specific advantages determines the location of MNEs value-added activities, ownership of these activities, and direction of trade (Hirsch & Cherniawski, 1997).

The OECD (1996b) notes that margins in *comparative advantage* between countries have narrowed. While this is undoubtedly true, partly because the emphasis has shifted towards *competitive advantage* of firms, we wish to go one step further. In our opinion, we are shifting from *comparative* to *absolute advantage*: in order to be able to attract a certain kind of value-added activity, a country has to offer the best possible operating environment for it – to be *absolutely* the best location in the world.

What Determines the Location of an Industry or a Cluster?

Firms are engaged in two types of competition (Venables, 1996, pp. 53–4). *First* they compete in the factor market. Entry of additional firms to a given factor market tends to bid up the prices, reducing the profits of firms at the same location. *Second*, firms compete for sales in the product market. If goods flow freely and costlessly, i.e., there is a single world market, relocation of a firm will have no supply or demand effects. Even small trade barriers or transportation costs would mean, however, that the world market had segments with their own dynamics. Adding a firm to a location will increase supply at that location, thus decreasing the demand of other firms. The forces discussed in this paragraph would call for dispersed patterns of industrial location. Why then do we argue that especially knowledge intensive sectors tend to agglomerate (or cluster) geographically? The discussion on the issue dates back more than hundred years.

Marshall (1890)[4] lists the 'clustering' forces in three broad categories. *Knowledge spillovers* or *technological externalities*[5] promote localization if their scope is to some extent geographically limited. We still lack a complete description of spillover mechanisms and their geographical dimensions, but informal exchange of ideas among professionals is one of the recognized channels that may be geographically bounded (Venables, 1996, p. 54). *Labor-market pooling* refers to the fact that firms near each other gain access to, and also partly create, a supply of industry-specific skills. Workers also benefit from this pooling since their fortunes are not tied to the success of a single company. *Intermediate good supply and demand* is the third one of Marshall's locational forces. Downstream firms will generate demand for intermediate inputs, which encourages the development of upstream industry. In the presence of trade barriers or transportation costs, this will improve the profitability of downstream industry.

The forces discussed in the two paragraphs above work hand in hand. It can be shown, however, that in the case of knowledge intensive industries the clustering forces dominate (Hernesniemi et

---

4 As discussed in Krugman (1991) and Venables (1996).

5 In Marshall's words: "...man starts a new idea it is taken up by others and combined with suggestions of their own; and thus it becomes the source of further new ideas."

al., 1996).[6] Thus, there is a reason why the movie industry is located in *Hollywood*, why much of computer related innovative activity takes place in the *Silicon Valley*, why the city *Salo,* in Southern Finland, has a lively telecommunication equipment industry, and why biotechnical innovations are largely made in five centers around the world. By studying the biotechnical research, we see that while there are separate *centers of excellence*, they are also interconnected in a number ways. A business enterprise that is active in this field may have to tap several of these *clusters* in order to be on the cutting edge.

In our definition, we stated that *global competitiveness of a nation is reached on a sustainable basis by offering appropriate framework conditions and sufficient pools of advanced factors of production.* What are these framework conditions and pools of advanced factors?

2.3 Framework Conditions

The MIT Scenario Working Group (1997)[7] envisions two alternative ways of organizing business enterprises in the 21st century: (1.) *shifting networks of small firms*, where small companies participate in large networks until the project that brings the network together is completed, and (2.) *all-encompassing virtual countries*, where global conglomerates build internal networks lasting for decades or even centuries while projects, people, and whole industries come and go within their boundaries. The five most important driving forces behind these scenarios were judged to be technology, human aspirations,[8] global environment, complexity,[9] and demographics.[10]

Whether one believes in the *web* or the *hub* scenario, it is nevertheless clear that our environment has indeed become more com-

---

6 Also Braunerhjelm & Svensson (1996): "The results suggest that agglomeration effects are present, predominantly in technology intensive industries. It is also shown that market size, the supply of skilled labour and earlier exports pattern, affect the location of overseas production."

7 Members of the Scenario Group are (in alphabetical order) Erik Brynjolfsson, John Carroll, Bob Halperin, Don Lessard, Stuart Madnick, Thomas Malone, Michael Scott Morton, Wanda Orlikowski, Sandy Pentland, Paul Resnick, Jack Rockart, Maureen Scully, and David Tennenhouse.

8 What do people ultimately want from their lives?

9 Will complexity of our environment and speed of change continue to increase or will our absorption capacities set some limits?

10 Is the economic center of gravity and distribution of global wealth shifting away from North America and Europe? If so, what are the consequences?

plex and that old 'Fordist' ways of organizing activities are becoming obsolete. This change requires new kinds of skills and qualities, which in turn impose challenges to our educational system, labor market organizations, etc. Flexibility and continuous learning are the 'buzz' words in the new paradigm.

The scenario group considers technology as one of the main driving forces of economic change. The word *technology* really refers to two things: *first*, there is the research and development that expands our knowledge base, and *second*, there is machinery and equipment facilitating daily activities.

We will discuss these issues below under three broad topics. First, we touch upon the effects of science, technology, and national innovation systems on the global competitiveness of a nation. Then, we consider the role of human qualities and labor force characteristics in determining competitiveness. Finally, we consider the role of infrastructure in the competitiveness equation.

Science, Technology and National Innovation Systems

Information and know-how are rapidly becoming the most crucial inputs of production. While this fact underlines the importance of science and technology, at what level and by whom the knowledge should be generated is unclear. Perhaps the only thing we do know at this point is that access to the worldwide information pool is imperative. Even the mightiest nation has to rely on imported innovations, and it may even turn out that who actually produces information is of secondary importance.

Traditionally, national technology policies have been designed to offer national firms a competitive edge in global markets (Fransman, 1997). International imitation, strategic technology alliances with foreign enterprises, 'brain drain' (mobility of researchers and engineers), inward and outward FDI, technology trade, and R&D cooperation with companies abroad all undermine the efficiency of national efforts to give domestic companies a competitive edge through national research efforts. These 'leaks' and the Finnish position in 'technology competition' are discussed below.

Imitation

In the case of a small open economy such as Finland, we probably have much more to gain than to lose from international *imitation*. It can be argued that Finnish paper machine manufacturing was

founded on international imitation, although in a few decades the knowledge flow has turned. Finland is still heavily engaged in process industries, where the innovations are often related to production processes and are thus much harder to imitate. As far as our rising star, telecommunications equipment manufacturing, is concerned, imitation may not be an issue. The reason for this is the rapid speed of change in the industry: imitating current products and manufacturing carbon copies would not lead to commercial success.

Strategic Alliances

International *strategic alliances* are partly an outcome of ever increasing R&D costs. If such giants as Toshiba, Siemens, and IBM have to join forces to develop 256M DRAM circuits, cooperation must be absolutely vital for smaller companies! According to the UN (1997, p. 18), the number of cross-border strategic R&D partnerships[11] increased from 280 in 1991 to roughly 450 in 1994. In 1995 (the latest year available), however, the upward trend faltered. Mytelka (1994, as in WIR '97) has suggested that strategic partnerships may also be increasingly important in creating *de facto* industrial standards.

An increasing amount of R&D is carried out through international research programs or institutions, e.g., EUREKA, CERN, COST, EMBL, EMBO, ESA, ESF to mention just a few. Among the European countries these already represent over 16% of total government R&D expenditure, compared to little over 6% in 1985 (EC, 1997, p. XX). R&D cooperation among the firms is frequently a prerequisite for participation.[12]

Brain Drain

Rumor has it that Finnish companies are sometimes unable to attract foreign specialists to Finland, while Finns are keen on taking temporary foreign assignments. However, if the emigrants eventually return to Finland, the information flow goes both ways. The *brain drain* is, however, a serious problem at the firm level, and that

---

[11] These include partnerships in 'core technologies', e.g., biotechnology, new materials and information technologies.

[12] According to EC (1997) more than 200,000 cooperative links between enterprises, universities and research centers were established as a result of two major EC research programs.

is precisely why basic education and training are, for the most part, publicly provided. According to the EC (1997, p. 639) mobility of scientific and technical personnel has "... for centuries been the most important mechanism for transferring technology between nations."

A closely related issue is the international mobility of students. The EC (1997, p. XXII) sees this as "... extremely important for fostering global research and educational system." Finnish students have the fifth highest EU mobility among the member states, after Greece, Ireland, Austria, and Portugal.[13]

Foreign Direct Investment

FDI is one of the recognized channels of technology transfer. In particular, two components are especially noteworthy in this context: foreign-located, domestically-owned R&D and domestically-located, foreign-owned R&D (Granstrand, Håkanson, & Sjölander, 1992, p. 242). Dunning (1992) argues, based on his theoretical and empirical work, that in both cases the effects on the domestic economy can be positive. These beneficial effects are more likely if the national innovation system is dynamic enough to reallocate domestic research effort, to benefit from externalities, and to earn returns on R&D effort. A United Nations study (1993) argues that 92% of foreign subsidiaries of SMEs and 98% of foreign subsidiaries of large MNEs receive technology from their parents (OECD, 1997c, p. 26). Large MNEs typically deliver 'the full package' – including product & process technology, quality control, management practices, etc. – while the scope of SMEs technology transfer is more limited, but also better adapted to local conditions. On the other hand, parent corporations may receive technology and knowledge from their subsidiaries. Still fragmented empirical evidence seems to suggest that inward FDI significantly contributes to the receiving country's knowledge base. While knowledge also flows from the host economy to the MNE's home country, in a typical case this knowledge transfer is less important.[14]

---

[13] There were no data on Finnish student mobility outside the Union. Since Finns typically go to the U.S. to study abroad, the intra-EU figures perhaps underscore the Finnish ranking.

[14] Gunnar Fors has studied *outward* foreign direct investment of Swedish companies. He notes on the issue as follows: "... Swedish firms locate a higher share of their R&D expenditures to host countries that are relatively specialized technologically in their industry. This may suggest that

FDI brings about an additional complication to technology considerations; besides considering where inventions are made, it should also be considered who has control over them. However, since less than 15% of technology in the EU is foreign controlled (EC, 1997, p. 162), this is perhaps a minor problem.

Technology Trade

Patents and other forms of knowledge are tradable commodities. Between 1983 and 1995, global payments of fees and royalties on technology have quadrupled to $48 billion (UN, 1997, p. 20). An estimated one fifth of these payments takes place between a parent and its affiliates. Within the same company, technology also flows without explicit contracts or payments. The EC (1997, p. 161) suggests that MNEs' technological activities with one or more of their affiliates represent some 30% of international technology trade.

National Innovation Systems

According to the OECD (1996a, p. 16), R&D remains centralized although there are notable exemptions. Some companies decentralize their R&D in order to benefit from special features of national innovation systems.

In the current environment, the goal of national innovation policies should be to enhance our ability to benefit from innovations

---

one additional motive to locating R&D abroad is to gain access to knowledge in "centers of excellence" and to benefit from localized spillovers." (Fors, 1996, abstract p. 1).

Kuemmerle (1996) examines determinants of FDI in R&D labs by 32 MNEs in pharmaceuticals and electronics. He shows that relative market size and relative strength in a country's science base determine whether FDI in R&D is done in order to earn returns on *Ownership*-advantages or to build new firm-specific advantages. "The findings suggest that when investing in R&D abroad, firms seek *different types* of spillovers from the national and local environment... It would be precipitous, however, to assume that foreign firms... are free riders. Foreign firms also create spillovers for the local environment..." (p. 35).

Globerman et. al. (1996) use a sample of patent data to analyze the technology sourcing of Swedish MNEs and SMEs. The results show that outward FDI, among other factors, facilitates technology diffusion. The results on MNEs support the argument that foreign affiliates are "...sometimes located in foreign "centers of excellence", where one purpose of the investment is to learn about foreign technology." (p. 16). There is also some indication that "...some countries may invest in Sweden in order to gain access to Swedish technology and competence." (p. 16).

Contrary evidence can be found in Fors (1997, p. 341) "...R&D undertaken in the home country is used as an input in both the home and foreign plants of the MNEs. This suggests that technology is transferred to the foreign plants. ... R&D in foreign affiliates does not appear to be used as an input in home plants."

Shan and Song (1997) note that "... in the biotechnology industry, foreign direct investment in the form of equity participation can be an efficient vehicle for tapping into country-specific, firm-embodied technological advantages." (p. 267).

made elsewhere.[15] Increased 'absorption capacity' is reached, somewhat paradoxically, by making investments of own research, education, and 'social capabilities' (see, e.g., Abramovitz, 1986; Cohen & Levinthal, 1989). In the case of Finland, Japan could serve as an example on how a national innovation system can be internationalized while retaining national goals (Fransman, 1997).

The Finnish Position in the Technology Race

The OECD states that "Among economists and policy makers, the view that technological change is a major driving force behind long-term economic growth is increasingly widespread..." (OECD, 1996, p. 53). Research and development, the objective of which is to deliver commercially viable innovations, is the most direct driving force of technological change. Basic and applied research also attempt to produce 'new' knowledge, but they contribute to commercial activity with a longer lag.

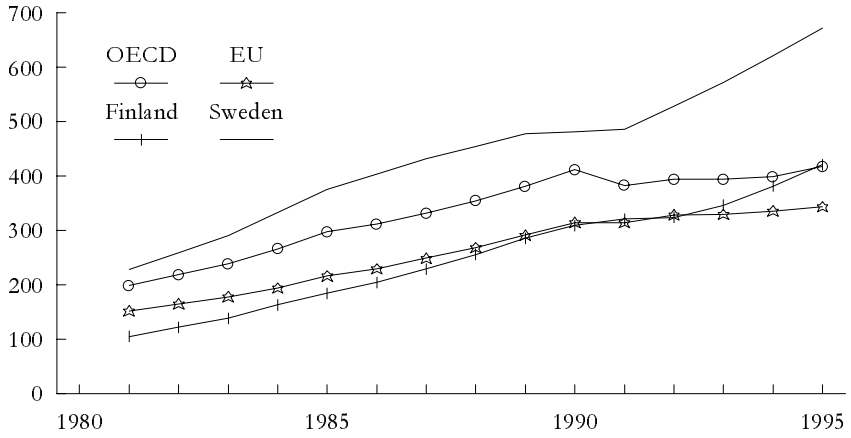
Although R&D is carried out mainly privately, the authorities have a significant effect on it. A prerequisite for R&D is a sufficient supply of researchers who typically have advanced degrees in engineering, natural sciences, etc. Besides personnel, good computer and communications infrastructures are needed. Since less and less basic and applied research is carried out privately, access to world-class research institutions and universities is also important. R&D has always been a labor-intensive task. Since agriculture and industry employ fewer and fewer people, being a potential location for MNEs' R&D activities appears to be an attractive option.

In Finland, public and private emphasis on R&D and related activities has increased in recent years. Our gross domestic expenditure on R&D (GERD) per capita (PPP US$) has reached the OECD average and is clearly above the EU mean (see Figure 2.5).

---

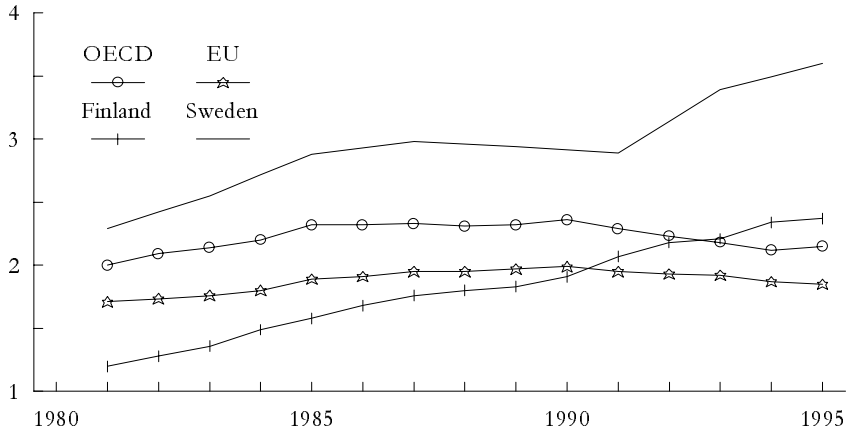
15 "There is considerable variation among the national innovation systems of economies that have successfully exploited foreign technologies, but the details of these appear less important than a few broad similarities. The economies that have benefited most from inward technology transfer have national systems of innovation that include public policies strengthening their 'national absorptive capacity' (Bahlman and Brimble, 1990)" (as in Mowery & Oxley, 1997, p. 139).

Figure 2.5 Gross Domestic Exp. on R&D per Capita (PPP $).



Source: ETLA Database – OECD Main Science and Technology Indicators.
Note: PPP = purchasing power parity adjusted, i.e., measured in terms of 'what money can buy'.

Figure 2.6 Gross Domestic Expenditure on R&D (% of GDP).



Source: ETLA Database – OECD Main Science and Technology Indicators.

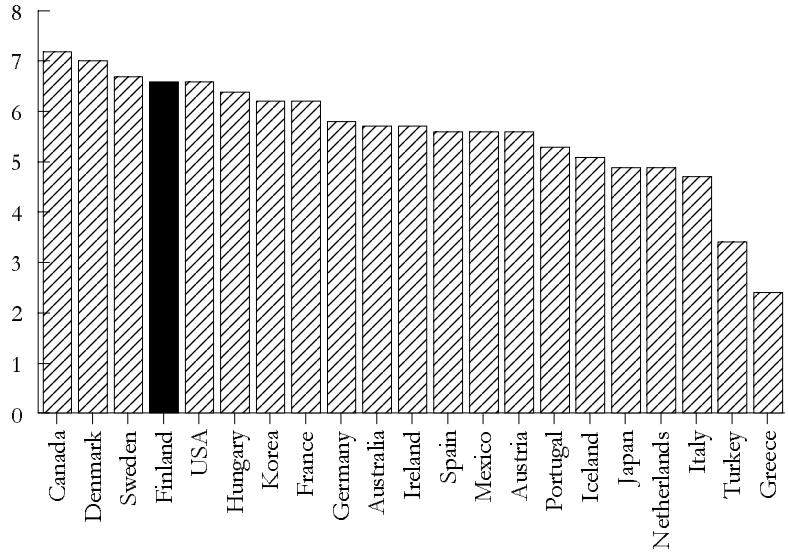
If we consider aggregate R&D intensities, i.e., measure GERD relative to GDP, Finland is already well past the OECD average (Figure 2.6). This comparison also shows that Sweden has a particularly heavy R&D emphasis. Both comparisons show that Finns have clearly shifted emphasis towards R&D.

R&D is not the only component contributing to technological change. Accumulation of human capital, i.e., the knowledge individuals have gathered through education and 'learning-by-doing', is another major contributor to technological progress.

Labor Force Characteristics

Labor costs have traditionally been used as a measure of 'price competitiveness'. Yet the so called *Kaldor paradox* (Kaldor, 1978) showing that "... for a number of countries that, over the long term, market shares for exports and relative unit labor costs or prices tended to move together, i.e. that growing market shares and increasing relative costs or prices went hand in hand..." (Fagerberg, 1996) is a relatively well known fact. The existence of this paradox indicates that there are non-price factors that must be accounted for; in other words the quality of the labor force and characteristics of the operating environment have to be considered.

Figure 2.7 Expenditure on Educational Institutions as a Percentage of GDP, 1994.

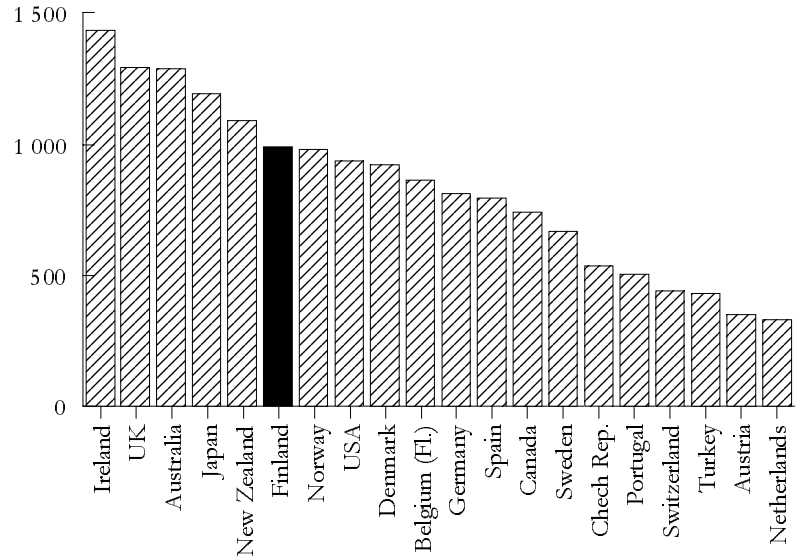


Source: OECD (1997a, p. 52).
Note: The OECD countries were ranked in descending order of total expenditure from both public and private sources on educational institutions for all levels of education combined. Figures for New Zealand, Belgium, Luxembourg, UK, Czech Republic, Norway, Poland, and Switzerland were not available.

Finland invests heavily in the quality of the labor force through education expenditure. Figure 2.7 shows that among the OECD countries only Canada, Denmark, and Sweden spend more on supporting educational institutions.

"The availability of skills – and in particular new skills – has become a major concern for many firms." (OECD, 1997d, p. 104). Qualities of the labor force are clearly one of the most significant elements of success in technologically advanced industries. It is, however, far from obvious what the appropriate qualities are. It is frequently suggested that people with engineering and science backgrounds are particularly important in the information age. Finland also thrives in this respect. However, putting too much weight on engineers gives an overly simplistic view of educational needs.

Figure 2.8 Number of University Graduates in Science-Related Fields per 100,000 Persons in the Labor Force 25 to 34 Years of Age.



Source: OECD (1997a, p. 342).
Note: Figures not available for France, Greece, Hungary, Iceland, Italy, Korea, Luxembourg, Mexico, and Poland.

Besides technical skills, the emerging 'information society' paradigm will also require great flexibility and openness from participants at all levels. One factor affecting flexibility is employment

regulations. Changes in employment regulations have been considerable in the OECD countries (OECD, 1997d, p. 208): besides collective bargaining agreements, we are seeing a wide variety of collective and individual contracts, and employee representative bodies, such as work councils, contribute to management decisions.

It is sometimes said that technology destroys jobs. It can indeed be argued that some professions will disappear as a consequence of progress, but it should also be kept in mind that new, however different, jobs will be created. In the past, the industrialized countries have seen a steady decline in the wages of unskilled workers while the skilled 'knowledge' workers have commanded a wage premium. This trend is expected to continue in the future, which leads us to consider what requirements this situation lays on the educational system and labor markets.

Generations just entering working life must be prepared to change careers, possibly several times, in the course of their professional lives. Some will find out that the skills they were taught are already outdated or that they do not know nearly enough about certain issues. We have traditionally been trained as accountants, electrical engineers, etc. The new approach may have to be more holistic, and teaching flexibility and communication skills may be as important as the subjects themselves.

Large groups of people doing exactly the same task will disappear along with assembly lines and traditional mass production. One of the possible consequences is that the era of centralized wage negotiations may be coming to an end.

Social Coherence

A few years ago many agreed that the European social systems should be developed according to the Scandinavian example; in particular, Sweden was taken as a model and their experiences were used as guidelines in formulating the social policy recommendations of the OECD (see, e.g., Kasvio, 1996; Townsend, 1995). As these 'model' countries have run into financial difficulties with their extensive welfare systems, other approaches have been sought after. Currently, the only alternative seems to be a more market-driven system allowing for more flexibility, but also increasing social inequality. *A priori,* it is, however, unclear how this change affects long-run competitiveness (Kasvio, 1996, p. 21).

The Nordic countries currently have some of the most equal income distributions in the world. Americans, on the other hand, have a long history of market-driven social and economic policies. If we take them as a point of comparison, the market-driven social and economic policies have led to somewhat undesirable outcomes (for discussion see Kasvio, 1996).

Social and economic policies are largely integrated and they should not be considered separately. The competitiveness of firms should not be strengthened at the expense of social policies. In fact, competitiveness in the long run *requires* that social issues be adequately cared for. This argument is supported by the following fact; firms no longer operate as separate entities – they are parts of industrial networks or 'clusters'. Their success crucially depends on the performance of related and supporting industries. In order to minimize the operation costs within the operating network, mutual trust among firms and other parties must be high. Homogenous and socially coherent society may contribute to achieving this trust.

Infrastructure

Developed and developing countries differ greatly with respect to their basic infrastructure, i.e., in the availability and quality of roads, electricity transmission and distribution network, railroads, harbors etc. Differences in basic infrastructure across industrialized countries, however, are seldom significant. But if one considers the most advanced features of infrastructure, such as the coverage of digitalized cellular phone networks, discrepancies begin to appear. Perhaps the most important parts of the 'advanced infrastructure' are those related to information and communication technology (ICT). As Table 2.5 below reveals, Finns are eager users of ICT.

ICT is somewhat of a paradox to economists. While it is at least as revolutionary as the steam engine and electricity were at the times of their inventions, and it has been adapted widely, ICT seems to contribute relatively little to productivity.

The fact that the use of ICT does not show up in productivity numbers indicates that even the advanced industrialized countries have not fully entered the information age. Although the latest technology is being employed pervasively, it has not been exploited to the fullest. The biggest obstacles in the way of progress may be

the old ways of conducting business; new technologies frequently demand new organizational structures.[16] Similar developments have been seen in the case of electricity; most related innovations were made in the 1860s to 1880s, but it was not until the 1920s that we saw significant effects on productivity (for a brief discussion see Andersen, 1993, p. 58-59).

Table 2.5 Penetration of ICT Technology, 1996.

Country	Main lines per 100 inhab.	Rank	Mobile Phones per 100 inhab.	Rank	Online users per 100 inhab.	Rank	PCs per 100 inhab.	Rank	Business PCs per 100 White Collar Workers	Rank
Austria	48		7		1		16		50	
Belgium	47		5		2		15		51	
Denmark	63	3	27		2		33	2	64	
Finland	56	8	29	1	10	3	23	7	60	8
France	57		4		12	2	16		56	
Germany	54		7		3		19		44	
Greece	51		5		1		12		36	
Ireland	39		7		3		15		78	
Italy	44		11		1		9		44	
Japan	50		15		2		12		18	
Luxemb.	60		11		5		15		51	
Netherl.	54		7		4		26		66	
Norway	57		29	2	4		32		91	2
Portugal	38		7		1		13		34	
Spain	39		8		3		8		48	
Sweden	68	1	28	3	8		29		75	
Switzerl.	64	2	9		5		32	3	76	
UK	52		12		5		21		55	
USA	63		17		14	1	46	1	103	1

Source: EITO (1998, pp. 47; 377–80).

The information society and globalization clearly link to each other for several reasons. *First*, as mentioned above, advances in ICT have made it much easier to manage geographically dispersed business activities. *Second*, new technologies have reduced the 'minimum efficient scale' of industrial production in many

[16] The measurement problem associated with productivity, which is argued to be the other main reason why there has not been an improvement in productivity despite the use of ICT, will not be discussed here.

branches, thus making decentralization of business activities more attractive. *Third*, as information becomes an increasingly important factor of production, globalization may be the only viable corporate strategy in many fields – an enterprise may be unable to succeed in any given industry unless it is present in the most dynamic operating environment in the world.

The World Economic Forum (WEF, 1997, p. 50–1) claims that a better information infrastructure attracts FDI, which in turn contributes to the domestic technology base. The argument is based on a simple correlation. While this can be considered – at best – only partial evidence, the finding would seem to suggest that an advanced information infrastructure is one of the prerequisites of FDI. On the other hand, causality is somewhat unclear: it may well be that in some cases increased presence of MNEs creates pressures to upgrade the local ICT infrastructure. Regardless of the direction of causality, the two phenomena are nevertheless interrelated.[17]

We have touched upon some of the relevant framework conditions above. There are, of course, several others, which are not discussed here.[18]

It is frequently suggested that globalization reduces the role of the public sector. In our opinion it certainly alters it but does *not* necessarily reduce it: this should be clear from the above discussion on framework conditions. The scope of policies may be shifting. Up until now, the nation-state has mostly been the relevant decision making unit. While the national level will continue to be important, the need for cross-national coordination is emphasized. On the other hand, some framework-related decisions are best made at the regional/local level.

---

[17] Lipsey (1997, p. 72) argues that it is the ICT revolution that is causing current structural adjustment, part of which is globalization.

[18] As far as taxation and environmental regulation are concerned, national efforts to attract inward FDI may cause a 'race to the bottom'; countries may start competing on who offers the lowest corporate tax rates and the least strict environmental regulations. Pain & Young (1996, as in Barrell & Pain 1997) find that the amount and destination of FDI undertaken by the UK and German companies can partly be explained by relative 'tax competitiveness'. Surprisingly enough, Finland fairs well in the comparison of corporate taxation; on the flip side of the coin, personal taxation is quite high when compared internationally.

The new definition of competitiveness we suggested above explicitly accounts for the fact that domestic and multinational firms ultimately create national prosperity. We emphasize long-term aspects of the issue rather than concentrate on year-to-year changes in relative prices.

The following section discusses the globalization phenomenon worldwide in light of a few recent figures.

3 WORLD TRENDS IN GLOBALIZATION

Figure 3.1 illustrates various facets of globalization. *Exports and imports* refer to physical flows of goods and services. As briefly discussed above, internationalization through imports and exports is by no means a new phenomenon. While *foreign direct investment* also has a long history, by and large it is a phenomenon of the past few decades. *Capital transfers* complement both trade and FDI; frequently, monetary flows also take place without underlying real flows. Goods flows and direct investment are, among others, sources of *technology transfer*. The ability to apply innovations made elsewhere is arguably more important than own technology devel-

Box 3.1 Characteristics of the Emerging 'Global' Economy.

Several scholars have discussed the features of the emerging global economy. Dunning's (1997, p. 57-58) list below is fairly widely agreed on (see also Kobrin, 1997; Stopford, 1997):

– *Increased mobility* of firm-specific assets – particularly knowledge related – across national borders,

– *Growing significance* of intra-firm and other 'non-market' cross-border transactions (e.g., transactions between firms with ongoing cooperative agreements),

– *Dramatic reduction* in long-distance transportation and communication costs and reduction of physical and cultural barriers between countries, and

– *Growing importance* of location-bound assets, e.g., educated labor force and sophisticated physical infrastructure.

As discussed elsewhere in this volume, several organizational and technological advances (particularly ICT) shape the future of globalization: these may also be considered features of the emerging global economy. On these Dunning (1997, p. 58) notes as follows:

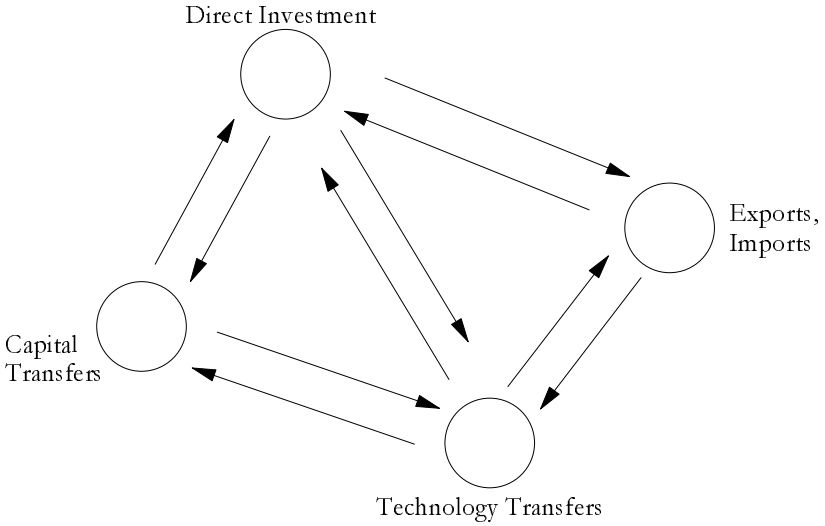
– *Economic progress*, at least in the developed countries, is increasingly dependent on firms'ability to innovate new assets and upgrade efficiency at which existing resources and capabilities are being used,

– *The created* assets (e.g., educated labor force, technological capacity, sophisticated legal and commercial infrastructure) have strong 'public good' aspects and thus their markets are highly imperfect – in particular since the assets are often generic rather than sector specific in their nature, and

– *The way* in which a nation's physical and human assets are organized is becoming an important determinant in national competitiveness.

opment, although extensive own research may be needed for realizing the benefits of technology transfer (Cohen & Levinthal, 1989). In what follows, we consider each of the facets in detail.

Figure 3.1 Interdependence of Various Facets of Globalization.



Source: Hatzichronoglou (1996, p. 8).

3.1 Exports

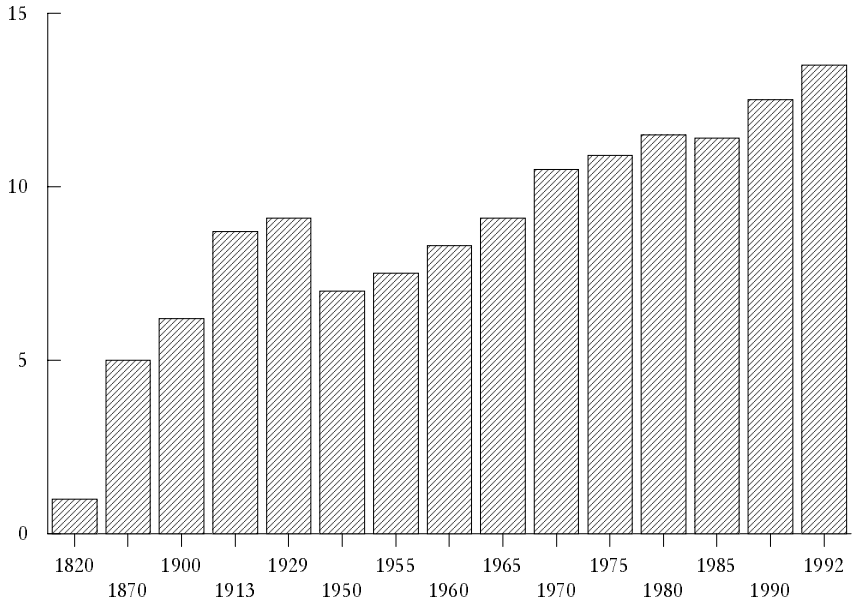
Traditionally exports have been the channel to win markets abroad. The share of world exports as a percentage of GDP has grown quite steadily in the post-war era. It should be noted, however, that the pre-war levels were not reached until the late 1960s.

Figure 3.2 shows that the export intensity has increased. At the same time the world economy has expanded; thus the volume of world merchandise trade has grown by 1,500% between 1950 to 1996 (Wolf, 1998). In 1997 the value of world exports reached $6,500 billion, and the average effective tariffs of high-income countries were at an all time low of 2.5% (ibid).

The Finnish export intensity is currently close to 40%; in this respect Finland is similar to Norway and Switzerland. In the OECD, only the Benelux countries and Ireland have higher figures.

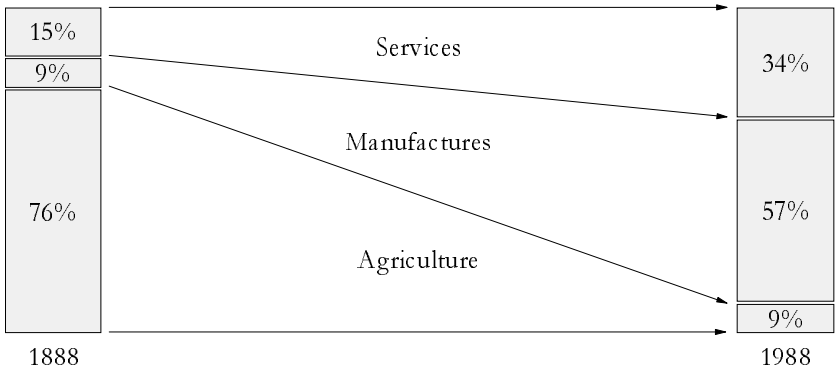
The composition of world trade has also changed. Before World War I agricultural products were dominant, but throughout this century manufactures and services have gained ground (Figure 3.3).

Figure 3.2 World Exports as a Percentage of GDP (1990 $).[19]



Source: OECD (1997f, p. 14); Angus Maddison (1995), *Monitoring The World Economy 1820-1992*, OECD.

Figure 3.3 Changing Structure of World Trade.



Source: Crocombe *et. al.* (1991) – GATT annual reports.

[19] These figures illustrate the trends in the long-term development of exports. Especially the most recent years do not correspond to figures in other sources. One possible reason for this is a different treatment of service exports. According to the World Bank (WDI, 1997, calculations by the authors) world exports of goods and services as a percentage of GDP were 14.1% in 1970, 18.8% in 1975, 22.5% in 1980, 19.4% in 1985, 20.9% in 1990, 21.6% in 1992, and 22.5% in 1995.

Table 3.1 World Merchandise Exports in Selected Countries.

	Merchandise exports, $ million		Food, % of tot.		Agricult. raw mat., % of tot.		Fuels, % of tot.		Ores & metals, % of tot.		Manuf. goods, % of tot.	
	1980	*1996*	'80	*'96*	'80	*'96*	'80	*'96*	'80	*'96*	'80	*'96*
G7 Countries												
Canada	63 105	*199 071*	12	*8*	11	*8*	14	*10*	14	*6*	48	*63*
France	110 865	*283 318*	16	*14*	2	*1*	4	*3*	4	*2*	73	*79*
Germany	191 647	*511 728*	5	*5*	1	*1*	4	*1*	3	*2*	85	*87*
Italy	77 640	*250 718*	7	*7*	1	*1*	6	*1*	2	*1*	84	*89*
Japan	129 542	*410 481*	1	*0*	1	*1*	0	*1*	2	*1*	95	*95*
UK	114 422	*259 039*	7	*7*	1	*1*	13	*7*	5	*2*	71	*82*
USA	212 887	*575 477*	18	*11*	5	*3*	4	*2*	5	*2*	66	*78*
Smaller Central European Countries												
Austria	17 478	*57 822*	4	*4*	8	*3*	2	*1*	4	*3*	83	*88*
Belgium	63 967	*168 010*	9	*10*	2	*1*	8	*3*	7	*3*	69	*77*
Netherlands	73 871	*177 228*	20	*19*	3	*4*	22	*8*	4	*2*	50	*63*
Switzerland	29 471	*80 756*	3	*3*	1	*1*	0	*0*	5	*2*	90	*94*
Scandinavian Countries												
Denmark	16 407	*48 868*	33	*23*	5	*3*	3	*4*	2	*1*	55	*59*
Finland	14 140	*40 520*	3	*3*	19	*7*	4	*3*	4	*3*	70	*83*
Norway	18 481	*48 922*	7	*8*	3	*1*	48	*55*	10	*7*	32	*23*
Sweden	30 788	*82 704*	2	*2*	10	*5*	4	*2*	5	*3*	78	*80*
Asian Countries												
Chile	4 584	*14 979*	15	*28*	10	*9*	1	*0*	64	*46*	9	*15*
India	7 511	*32 325*	28	..	5	..	0	..	7	..	59	..
Indonesia	21 909	*49 727*	8	*11*	14	*6*	72	*26*	4	*6*	2	*51*
Malaysia	12 939	*78 151*	15	*9*	31	*5*	25	*8*	10	*1*	19	*76*
Central and South American Countries												
Brazil	20 132	*47 164*	46	*30*	4	*4*	2	*1*	9	*10*	37	*54*
China	18 136	*151 047*	..	*8*	..	*2*	..	*4*	..	*2*	..	*84*
Mexico	15 442	*95 199*	12	*6*	2	*1*	67	*12*	6	*2*	12	*78*
Venezuela	19 293	*22 633*	0	*2*	0	*0*	94	*82*	4	*4*	2	*12*
Other Countries												
Australia	21 279	*53 252*	34	*25*	11	*7*	11	*19*	17	*16*	22	*30*
New Zealand	5 262	*13 789*	48	*47*	26	*17*	1	*2*	4	*4*	20	*29*
Poland	16 997	*24 387*	6	*11*	3	*2*	13	*7*	7	*6*	61	*74*
Russia	..	*81 438*	..	..	..	..	..	..	..	..	..	..
Saudi Arabia	109 113	*58 177*	0	..	0	..	99	..	0	..	1	..
South Africa	25 539	*18 132*	9	*14*	2	*5*	4	*9*	7	*10*	18	*49*

Source: WDI (1998) – IMF, Direction of Trade.
Note: Figures for Belgium include Luxembourg. China does not include Hong Kong or Taiwan (1996 exports: 180 744 and 115 646, respectively). German data prior to 1990 refer to the Federal Republic of Germany before unification. South African data are for the South African Customs Union, which includes Botswana, Lesotho, Namibia and South Africa.

Table 3.2 World Service Exports in Selected Countries.

	Service exports (BoP), $ million		Transport, % of tot.		Travel, % of tot.		Communi-cations, computer, etc., % of tot.		Insurance & financial services % of tot.	
	1980	*1996*	'80	*'96*	'80	*'96*	'80	*'96*	'80	*'96*
G7 Countries										
Canada	7 441	*28 512*	34	*20*	34	*31*	32	*49*	..	..
France	43 506	*88 891*	24	*23*	19	*32*	53	*36*	3	*9*
Germany	33 062	*84 639*	27	*23*	15	*21*	57	*49*	1	*7*
Italy	19 192	*69 910*	24	*22*	47	*43*	23	*28*	6	*7*
Japan	20 240	*67 724*	63	*32*	3	*6*	32	*55*	2	*5*
UK	36 452	*79 389*	39	*23*	19	*25*	42	*41*	..	*11*
USA	47 550	*234 687*	30	*20*	22	*34*	45	*41*	3	*4*
Smaller Central European Countries										
Austria	9 423	*24 315*	7	*12*	69	*52*	21	*24*	3	*13*
Belgium	12 925	*36 325*	33	*26*	14	*18*	49	*42*	5	*14*
Netherlands	17 150	*49 185*	51	*41*	13	*13*	34	*44*	1	*1*
Switzerland	6 888	*26 225*	19	*9*	46	*34*	30	*27*	5	*30*
Scandinavian Countries										
Denmark	..	*15 699*	..	*46*	..	*22*	..	*33*	..	..
Finland	2 733	*7 276*	35	*29*	25	*21*	37	*50*	3	*-1*
Norway	8 615	*13 918*	75	*64*	9	*17*	16	*12*	0	*3*
Sweden	7 489	*16 930*	41	*30*	13	*22*	44	*46*	3	*2*
Asian Countries										
Chile	1 263	*3 356*	32	*40*	14	*28*	52	*29*	2	*4*
India	2 949	*10 087*	15	..	52	..	32	..	1	..
Indonesia	..	..	..	..	..	..	..	..	..	..
Malaysia	1 135	..	42	..	28	..	30	..	1	..
Central and South American Countries										
Brazil	1 737	..	47	..	7	..	38	..	8	..
China	..	*20 601*	..	*15*	..	*50*	..	*35*	..	*1*
Mexico	4 591	*10 901*	10	*13*	70	*64*	10	*8*	10	*8*
Venezuela	693	*1 565*	41	*30*	35	*56*	10	*13*	14	*0*
Other Countries										
Australia	3 860	*18 424*	49	*28*	29	*49*	20	*18*	1	*5*
New Zealand	1 009	*4 708*	58	*34*	21	*52*	20	*15*	1	*0*
Poland	2 018	*9 833*	59	*28*	12	*32*	24	*32*	5	*8*
Russia	..	*12 217*	..	*26*	..	*56*	..	*16*	..	*1*
Saudi Arabia	5 191	*3 518*	15	*0*	26	*0*	59	*100*	..	..
South Africa	2 929	*4 253*	42	*27*	47	*52*	3	*11*	9	*10*

Source: WDI (1998) – IMF, Direction of Trade.
Note: Figures for Belgium include Luxembourg. German data prior to 1990 refer to the Federal Republic of Germany before unification.

Box 3.2 A Few Notes on Trade Theories.

Traditional Trade Theory

Of the various facets of globalization, the analysis of exports has the longest theoretical traditions. Already *Adam Smith* (1776, see, e.g., Heilbroner & Malone, 1986), the father of economics as we know it, introduced the idea of *absolute advantage,* suggesting that countries would export the goods whose production in which they are more efficient than any of the competitors.

It was, however, *David Ricardo* (1817) who introduced the first model with great analytical power. Ricardo argued that countries can gain from trade provided that domestic price ratios differ;[20] according to his principle of *comparative advantage,* a country gains from trade by specializing in the exports of the commodity in whose production it is relatively more efficient. Thus a country gains from trade even if it were absolutely more inefficient in all of the goods produced. Ricardo did not explain why countries differ in productive efficiency: he simply assumed that there are some kind of technological differences across countries, which in his model explain trade patterns.

In the Ricardian model, labor is the only productive input. *Samuelson* (1971) and *Jones* (1971) introduced a model with two inputs: labor, which was mobile across sections, and a sector-specific input, either land or capital. In this model, cross-country variations in the endowments of sector-specific factors explain trade patterns. While this *specific factors model* also suggests that trade overall will be beneficial, it also affects income distribution and some groups will be worse off as trade is introduced.

In the *Hecksher-Ohlin theory* (Ohlin, 1933), both factors are mobile across sectors. Differences in national resource bases explain trade; a country will export the good that uses intensively the abundant factor in the country.[21]

New Trade Theory

By the late 1970s it became obvious that the above models were insufficient in explaining trade patterns; particularly industrialized countries engaged in intra-industry trade, i.e., exchange in similar goods. Furthermore, the models above assumed perfect competition, homogeneous goods, and constant returns to scale, and did not take into account possible externalities. In the 1980s, the *new trade theory* emerged (see, e.g. Helpman & Krugman, 1985; Helpman & Krugman, 1989). While it shed new light on the nature of export patterns, up-to-date it has largely ignored the foreign direct investment phenomenon.

---

[20] Ricardo assumed that monetary shocks had no effect on relative prices, i.e., they were neutral. In this case, the monetary side can be omitted and domestic pre-trade price ratios are determined by relative input requirements of various goods.

[21] An extension of the HO-type framework (Mundell, 1957) can been used to explain FDI by using relative factor endowments. If two countries have the same production functions, then the capital rich country will have a lower rate of return on capital in the absence of trade and capital flows. If trade does not take place, capital flows could equate the rates of return. The stronger the barriers for trade, the larger the potential for capital flows. Contrary to the suggestions of this theory, however, capital poor countries are not the main targets of FDI as will be shown shortly.

Geography and Trade

Krugman (1991) has suggested that regional industrial specialization should be recognized as a subdiscipline of economics. Markusen (1995, p. 169) condenses the essence of 'geography and trade' literature as follows: "The literature on geography and trade is a natural extension of this line of research [new trade theory], focussing on how industry agglomeration and regional differentiation can arise endogenously as a consequence of transportation costs, market sizes, and the trade policy regime.". Krugman's term 'Regional industrial specialization' is closely related to the 'locational forces' discussed above.

Locational forces determine what kind of MNEs' value-added activities a country is able to attract, which in turn partly determines national industrial specialization. Krugman also notes that production in certain industries tends to concentrate within a country. In this respect, his argument is parallel to that of Michael Porter (1990a; 1990b), who states that the concentration or clustering of industrial activity within the country plays a crucial role in determining which sectors are internationally competitive.

3.2 Capital Flows

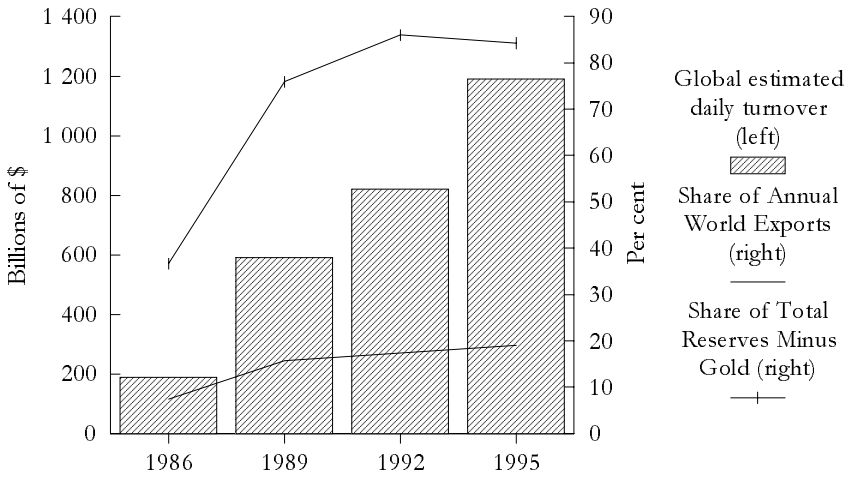
Capital flows have a direct influence on the other facets of globalization, e.g., through their impact on exchange and interest rates.

The foreign exchange market is the most globalized part of the world financial markets. The average daily global turnover in the foreign exchange market has grown from $200 billion in the mid-1980s to around $1.2 trillion in the mid-1990s (Figure 3.4). The average *daily* foreign exchange trading turnover is thus approximately 20% of the value of *annual* world exports of goods and services! Foreign exchange trading is often related to other financial transactions, such as foreign direct investment flows and trading of foreign bonds & equities. On the other hand, purely speculative trading has increased in significance in recent decades. Monetary authorities' ability to influence exchange rates through official interventions is quite limited: average daily foreign exchange turnover is nowadays equivalent to *all* countries' foreign exchange reserves.

The bulk of foreign exchange market trading takes place in a few centers. In terms of daily turnover, London is the largest followed by New York and Tokyo; these three account for over half of global turnover (BIS, 1996, pp. 13–16).[22]

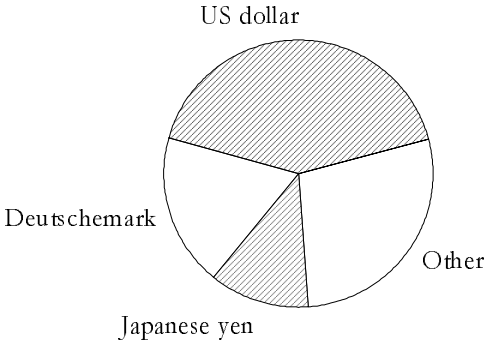
[22] The proportion of London, on its own, is almost one-third. One reason for its popularity is its favorable position between Asian and American time zones.

Figure 3.4 Global Average Daily Foreign Exchange Trading Turnover.



Source: IMF (1997b), BIS (1996).
Note: Includes spot, forward, and currency swap transactions, adjusted for double counting. Based on surveys of activities in the three largest foreign exchange market centers in 1986, markets in 21 countries in 1989 and 26 countries in 1992 and 1995.

Figure 3.5 Currency Composition of Gross Turnover in Global Foreign Exchange Markets in 1995.



Source: BIS (1996).
Note: Illustrates the use of selected currencies on one side of transaction.

The currency composition on the global foreign exchange market is highly concentrated, too. The three dominant currencies are the US dollar, Deutschemark and Japanese yen (Figure 3.5). The US dollar has the major role in the market, partly because of its use as a

vehicle currency for cross trading between other currencies. Seven of the ten most heavily traded currency pairs had the dollar on one side in 1995 (BIS, 1996, pp. 7–11). The second most important currency in the foreign exchange market is the Deutschemark. It is the only currency, apart from the dollar, that is traded in large quantities against a wide range of other currencies. In addition, US dollar/Deutschemark trading has the largest share of the global market transactions: in 1995 the share was, on average, over 20% of all transactions. The Japanese yen is the third most widely traded currency. It is traded predominantly against the two other major currencies, especially against the US dollar.

Other financial market segments have also expanded in recent years. It is somewhat surprising, however, that global trading in equities is considerably smaller than trading on bond or foreign exchange markets: the average total daily turnover of all the world's stock exchanges in the early 1990s was only about 10–13% of average daily trading volume of government bonds.[23] Budget deficits in many countries explain this phenomenon: significant borrowers on international bond and loan markets are governments, which finance their deficits by issuing bonds; Table 3.3 shows that OECD countries, the United States in particular, are the most active ones in this respect.

Table 3.3 Financing Activity on International Capital Markets by Main Borrowers.

	1993	1995	1997
Total (Billions of $)	**819**	**1 284**	**1 769**
Of which (%): OECD Countries	89	92	87
United States	15	28	25
Germany	8	11	13
United Kingdom	6	7	10
France	7	4	5
Japan	10	9	4
Of which (%): Non-OECD Countries	8	7	11
Of which (%): Int. development institutions	3	1	2

Source: OECD (1998a).

[23] In addition, it has been estimated that global daily trading volume of government bonds was in the early 1990s some 20% of daily trading volume of global foreign exchange market (Bryan & Farrel, 1996).

Box 3.3 Expansion of Asset Management

Global financial deregulation and the large shift in households' saving behavior from bank accounts to mutual funds have made fund management one of the most dynamic financial service segments. While the institutionalization of savings has been the most evident in the U.S., the trend is also apparent in other industrialized countries. U.S. mutual funds have experienced double digit growth rates since the 1970s. In the 1984–96 period, the U.S. mutual funds' total assets increased from $371 billion to $3,539 billion. Especially equity mutual funds have grown substantially; in 1984 their share of total mutual fund assets was 22% – the share was one-half in 1996 (Table).

Competition for savings among banks, mutual funds, insurance companies, and pension funds has intensified. As the importance of geographical presence has lessened, fund management firms have consolidated their operations geographically. This has been facilitated by the ability of firms to contract out aspects essential to the business of fund management, but which are distinct from the management of funds *per se*. Development of mutual fund 'supermarkets', offering services of a wide variety of fund management firms at the retail level, has led to a geographic separation between fund managers and the investors in those funds. A similar trend is also evident in back office functions, which are often contracted out to third parties, which may be themselves geographically far from the fund managers. Furthermore, there have been many mergers and acquisitions in business recently. Firms are typically bigger than they were just a few years ago.[24] It seems, however, that the concentration of managed assets into large companies has not been as fast as one might have imagined: in the mid-1980s the top 10 U.S. fund managers' share of the 300 largest fund managers assets was 23%, compared to 27% in the mid-1990s. In Europe, the concentration has progressed more rapidly.

Consolidation activity has, in recent years, increasingly taken place across borders, reflecting a tendency toward evolution of global asset managers. One development scenario for the industry is that there will be a relatively small number of large global companies managing assets in excess of $150 billion and a number of smaller fund managers surviving in regional niche markets.

Table: US Mutual Funds: Total Assets.

	1984	1990	1996
Total (Billions of $)	**371**	**1 067**	**3 539**
By type of fund (% of the total)			
Equity	22%	23%	50%
Bond and income	15%	30%	25%
Money market	63%	47%	25%

Source: Adapted from IMF (1997a, p. 119–21).

[24] The largest institutional investor in the U.S. in 1995, *Fidelity Investment*, managed almost two and a half times the assets of the largest inst. investor in 1985, *Prudential*. Fidelity alone accounts for app. 12-15% of turnover in the U.S. equities markets.

Although global trading volume on equities markets is substantially smaller than on foreign exchange or bond markets, equities trading has also expanded and become more globalized in recent years. For instance, in the United States, total cross border equity transactions have grown from less than $100 billion in 1980 to more than $1,500 billion in 1994 (Bryan & Farrel, 1996). The expansion of equities markets is driven primarily by expansion in the global presence of institutional investors, such as insurance companies and mutual funds (Box 3.3).

Table 3.4 Derivative Financial Instruments: Annual Turnover Traded on Organized Exchanges Worldwide.

	1986	1996
Millions of contracts traded - total	**315**	**1 162**
By instrument		
Interest rate options and futures	36%	66%
Stock market index options and futures	54%	26%
Currency options and futures	10%	8%
By region		
North America	92%	37%
Europe	3%	37%
Asia-Pasific	4%	10%
Other	1%	16%

Source: (IMF, 1997a), BIS (1996).

Another segment that has expanded considerably on financial markets during recent decades is trading of derivatives: global annual turnover on financial derivative markets has more than tripled from 1986 to 1996 (Table 3.4).[25] Trading turnover in currency, interest rate and stock market derivatives has increased. However, a change in the focus of derivatives trading occurred from 1986 to 1996: in 1986 over half of derivative contracts were linked to stock markets, while in 1996 their share had declined considerably. On the other hand, interest rate derivatives have increased their share substantially. This has been partly due to expansion of global bond markets. There are also apparent changes in the regional structure:

[25] Derivative instruments, like currency futures and options, can be used in hedging against financial risks: by buying or selling derivative instrument contracts one knows today what obligations he or she has at some point in the future. On the other hand, a large portion of financial derivatives trading nowadays is purely speculative trading.

in the mid-1980s, derivatives trading was heavily concentrated in the North America. Since then, European and Asian markets have increased their trading turnover. In 1996, trading turnover in European markets was approximately as large as in the North America.

Summing up, the foreign exchange market is nowadays almost fully globalized. Bond and derivatives markets are rapidly globalizing. The globalization of equities markets has also started to intensify during the 1990s. So, we can conclude that in the near future we will have a truly global capital market.

3.3 Technology

Table 3.5 illustrates the development of the technology autosufficiency ratio. The ratio indicates how self-sufficient a country or a region is with respect to technology: a ratio close to one indicates that the country or the region does not depend on foreign technology. The ratio has decreased in all regions in the 1981–95 period, i.e., reliance on imported technology has increased.

Table 3.5 Technology Autosufficiency Ratio.

	Finland	Sweden	EU	N. America	OECD
1981	0.28	0.17	0.38	0.54	0.49
1983	0.28	0.17	0.36	0.52	0.50
1985	0.25	0.13	0.34	0.50	0.50
1987	0.22	0.11	0.30	0.48	0.49
1989	0.18	0.08	0.25	0.49	0.44
1991	0.16	0.07	0.21	0.47	0.41
1993	0.14	0.08	0.20	0.49	0.37
1995	0.09	0.07	0.17	0.49	0.35

Source: ETLA Database – OECD Main Science and Technology Indicators.
Note: *Technology autosufficiency ratio* is defined as resident patent applications per national patent applications.

Table 3.6 reveals which countries are net providers of technology; countries are ranked according to technology balance of payments coverage ratio. When this ratio is above one, the country licenses out technology. A figure below one indicates a licensing-in situation. Sweden and the United States are high on the list. Surprisingly, however, Finland is last in this comparison.

Table 3.6 Technological Balance of Payments Coverage Ratio.

Country	Average TBP Coverage Ratio
Sweden	5.38
USA	4.39
New Zealand	2.02
Canada	1.10
Japan	1.09
UK	1.06
Netherlands	0.96
Belgium	0.88
Germany	0.79
Norway	0.75
France	0.73
Italy	0.61
Australia	0.39
Austria	0.28
Spain	0.22
Mexico	0.19
Finland	0.14

Source: ETLA Database – OECD Main Science and Technology Indicators.
Note: 1990–5 average or whatever years available (AUS: 90, 92, 94; AUT: 90–5; BEL: 90–5; CAN: 90–3, 95; FIN: 90; FRA: 90–2; GER: 90–5; UK: 90–5; ITA: 90–5; JPN: 90–5; MEX: 91–5; NLD: 90–2; NZL: 90–3, 95; NOR: 90–2; ESP: 90–5; SWE: 90, 93; USA: 90–4). Note that 1990 was the only year available in the Finnish case. Inclusion of the later years would possibly improve the ranking. In several similar comparisons the United States is ahead of Sweden. Sweden ranks high thanks to an exceptionally high figure in 1993. Some sources question the reliability of the figures above.

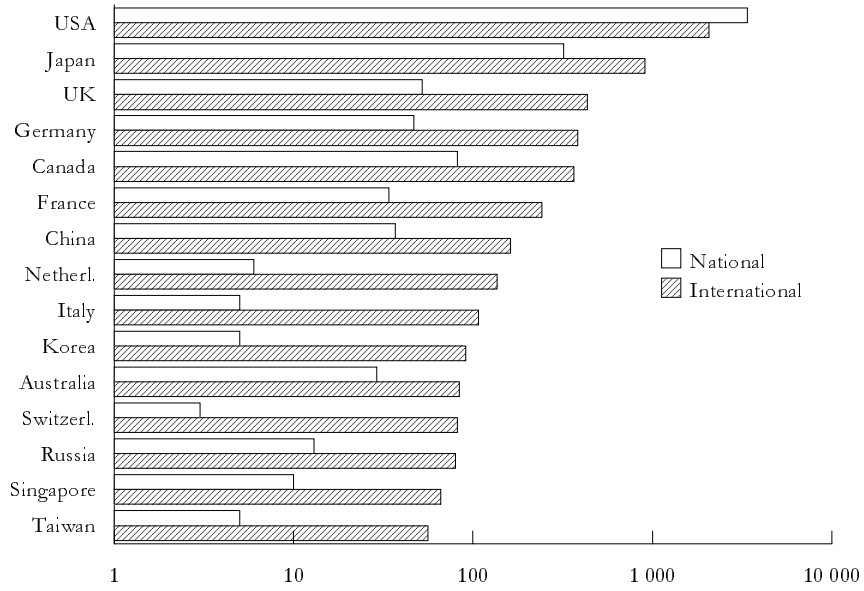
A vast majority of technology flows actually takes place via foreign affiliates of MNEs. Another way to transfer technology is a technology or 'strategic' alliance. In a technology-based alliance two or more firms unite to pursue a set of goals while retaining their strategic autonomy. Each partner shares control and contributes in the agreed areas. Obviously, alliances can have other objectives besides technology. According to the EC (1997, p. XXI), 29% of all inter-company alliances are technology-based, 46% are co-production agreements, and 24% relate to marketing.

Technology alliances are an international phenomenon. For every national alliance there are 1.31 international ones (ibid), of which 65% concern information technology, biotechnology, and

new materials. The growth in technology alliances has been rapid: in the EU the number has grown from 646 in 1988–91 to 1,718 in 1992–5, in NAFTA from 1,958 to 5,618, and in DAE[26] from 574 to 1,394 (EC, 1997, p. XXII).

Figure 3.6 compares the total number of technology alliances in various countries between 1992 and 1995. Unsurprisingly, the United States and Japan top the list on both national and international technology alliances.

Figure 3.6 National and International Technology Alliances.



Source: EC (1997, p. 610 – Figure 11b.2) – DGXII-AS4, HAA, IFC/SDC.
Note: Log scale. Total number of technology alliances from 1992 to 1995. International alliances are those where at least one partner is in another country.

The Finnish role in technology alliances has been minor, and without *Nokia* the picture would be even gloomier (Table 3.7). Note that three-fourths of the Finnish cross-border technology alliances are with a partner in the U.S.[27]

---

26 DAE refers to Japan, Korea, Singapore, and Taiwan.

27 It should be noted that the databases on technology alliances most likely underestimate the role of Finnish companies for several reasons: *first*, alliances are often recorded from public sources, i.e., from major newspapers such as the *Financial Times*

Table 3.7 International Technology Alliances between EU Members, the U.S. and Japan.

Country	UK	Germany	France	Netherl.	Italy	Sweden	Belgium	Spain	Finland	Denmark	Ireland	Portugal	Greece	EU15	USA	Japan
UK		33	38	8	12	7	4	9	2	6	5	1	1	126	346	56
Germany	33		37	18	16	4	3	4	0	2	0	0	0	117	261	57
France	38	37		13	16	6	1	6	0	0	1	2	1	121	171	39
Netherl.	8	18	13		5	0	5	1	0	1	0	0	0	51	93	13
Italy	12	16	16	5		1	1	4	0	0	1	1	2	59	69	13
Sweden	7	4	6	0	1		0	0	2	1	0	0	0	21	64	6
Belgium	4	3	1	5	1	0		2	0	0	0	1	0	17	37	3
Spain	9	4	6	1	4	0	2		0	0	0	1	0	27	15	0
Finland	2	0	0	0	0	2	0	0		1	0	0	0	5	21	2
Denmark	6	2	0	1	0	1	0	0	1		0	0	0	11	13	0
Ireland	5	0	1	0	1	0	0	0	0	0		0	0	7	16	1
Portugal	1	0	2	0	1	0	1	1	0	0	0		0	6	2	0
Greece	1	0	1	0	2	0	0	0	0	0	0	0		4	1	0
EU15	126	117	121	51	59	21	17	27	5	11	7	6	4		1109	190
USA	346	261	171	93	69	64	37	15	21	13	16	2	1	1109		1085
Japan	56	57	39	13	13	6	3	0	2	0	1	0	0	190	1085	

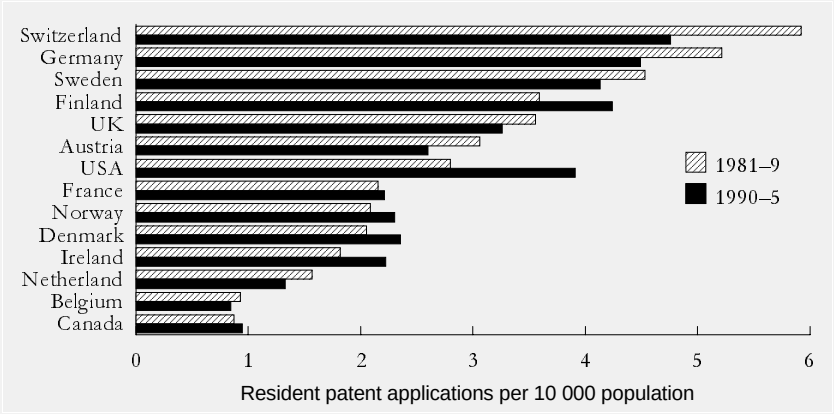
Source: EC (1997, p. 614 – Table 11b.4) – DGXII-AS4, HAA, IFC/SDC.
Note: Refers to the years 1984–95.

and *The Wall Street Journal* which understandably put little emphasis on Finland (to the best of our knowledge e.g. *Kauppalehti* or *Helsingin Sanomat* are not among the sources examined), *second*, databases concentrate on large firms and, since Finnish companies are relatively small when compared internationally, they are likely to be underrepresented, and *third*, some databases concentrate on core technologies and may thus ignore technology alliances between, e.g., paper companies.

Box 3.4 Innovation Activity: An International Comparison.

The number of patent applications can be used as an indicator of innovation activity and development of new technology. Figure 1 illustrates average inventiveness activity in some OECD countries in the 1980s and 1990s. We can see from the figure that in the 1980s innovation activity was most intensive in Germany, Sweden and Switzerland. In the 1990s Finland has improved its performance and its inventiveness coefficient is about the same as in top countries.

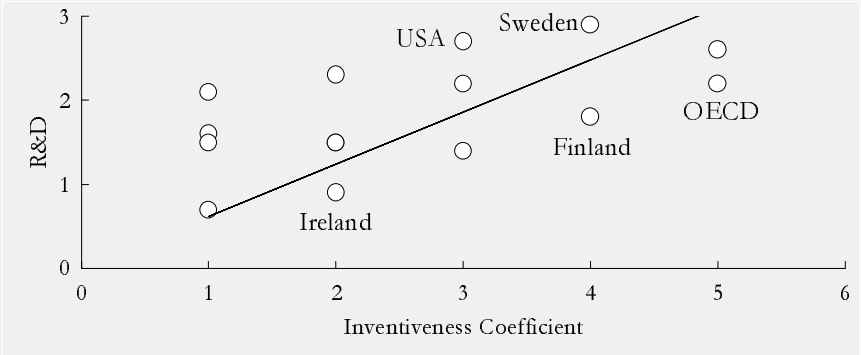
Figure 1: Inventiveness Coefficients in Some OECD Countries.[28]



Source: ETLA Database – OECD Main Science and Technology Indicators.

There is a clear positive relationship between R&D expenditure and innovation activity: we can see from Figure 2 that a high average R&D intensity in the period 1981–95 was positively correlated with a high average inventiveness coefficient in the same period.

Figure 2: R&D Expenditure (% of GDP) and Inventiveness Coefficient in Some OECD Countries (Averages in 1981–95).



Source: ETLA Database – OECD Main Science and Technology Indicators.

[28] Averages in 1981–9 and 1990–5, sorted by 1981–9 values.

3.4 Foreign Direct Investment

Trade has traditionally been the mechanism linking nations. In the past few decades, however, its growth has been modest compared to the rapid expansion of FDI (Figure 1.1). Also, cross-border mergers and acquisition activity has shown a steady increase throughout the 1990s (OECD, 1997b, p. 15): in 1996, their value was $163 billion (UN, 1997, Table I.1 – includes only majority held investments).[29] Worldwide FDI flows set new records in 1996 (UN, 1997, p. 3): inflows increased by 10% to $349 billion, while outflows rose by 2% to $347 billion. In 1996, the global FDI stock was $3.2 trillion, up from $2 trillion in 1993 (UN, 1997, p. 3). Thus it is equal to over 10% of the global annual GDP. Alternatively, the importance of the FDI stock can be illustrated by noting that annual sales of MNEs' foreign subsidiaries is equal to one and one-half times world exports (OECD, 1996a, p. 16).

Box 3.5 A Definition of FDI.

There are many different operational definitions of FDI, but all aim to encompass the desire of a home country firm to obtain and manage an asset in a host country. The ability to manage the acquired asset will depend in part on the financial structure of the companies concerned and also on the characteristics of the host country's legislation. There are internationally agreed guidelines for national balance of payments statistics that are reported to the IMF for its Balance of Payments Yearbook. However, it has to be accepted that the guidelines have not been fully implemented. They require that FDI include three categories of capital:

Equity Capital: The value of the shares held in the foreign enterprise should exceed 10% of the shares with voting rights. This would include Greenfield investment as well as mergers & acquisitions. The latter is a major form of FDI in the developed world, although controversy remains over where it is appropriate to draw the dividing line between portfolio investment and FDI.

Reinvested Earnings: Retained profits by the affiliate are assumed to be reinvested in the affiliate, and they are allocated in proportion to the equity investment. The proportion of reinvested earnings in long established investment stocks, such as those for the UK and the US, can be up to 60%.

Other Capital: Short and long term borrowing between the parent company and its affiliates are also included in the stock of FDI, but these stocks could just reflect transfer pricing of assets, rather than real claims.

Source: Adapted from Barrell & Pain (1997, p. 64).

[29] The UN (1997, p. xix) survey suggests that the FDI boom is likely to continue.

The United Nations (UN, 1996, p. 96-) has recognized the driving forces of expanding foreign direct investment as follows:

- *Technology*. Progress in ICT has made it possible for firms to not only process and transmit huge quantities of information, but to also manage daily activities of a widely spread corporate network. At the same time, advances in transportation (and related services) have facilitated the flow of goods and people.
- *Policies*. Trade has been liberalized considerably in the post-war era and, according to the GATT, average tariffs are currently below 4%. Removal of restrictions on FDI has been rapid in the 1980s (UN, 1996, p. 96).[30]
- *International production*. International production has become an integral part of the world economy. New MNEs have emerged in numbers and they typically have more affiliates than before.

Together, the three forces above have (1.) improved access to foreign markets, (2.) promoted access to foreign factors of production, (3.) permitted firms to fully exploit their tangible and intangible assets (O-advantages), (4.) created larger markets (and also caused more competitive pressures), and (5.) changed the importance of different factors determining FDI flows.

The last point (5.) is especially interesting from the Finnish perspective. Thanks to (1.) and (4.), the size of the national market has decreased in importance. Furthermore, the overall infrastructure and skilled workforce are increasingly important factors of production. Thus it seems that Finland's relative position may have improved in the global FDI competition. This is not to say that more traditional factors would be unimportant in determining FDI flows. In its executive survey, the WEF (1997, p. 33) finds that the five most important factors determining FDI are (in the order of importance): size of national market, market growth, 'ability to repatriate capital and remit profits', productivity and working habits, and infrastructure.[31]

---

30 The United Nations (UN, 1997, p. xviii) notes that 95% of a total of 599 regulatory changes in the FDI regimes from 1991 to 1996 were in the direction of liberalization. The governments' eagerness to attract FDI is also reflected in the increased number of bilateral investment treaties; by the beginning of 1997, a total of 1,330 such treaties, involving 162 countries, have been signed in the 1990s.

31 It is a little surprising that the relative unit labor costs do not come up in this list. One would also expect the relative cost of other factors as well as relative factor endowments would have an effect on FDI flows.

From a firm's point of view, exports and FDI are alternative patterns to serve the international market. From a national perspective, however, the latter is much more invasive and thus the recent growth of FDI has aroused some concern. A number of researchers argue that *outward* FDI can be considered a positive phenomenon. The views on *inward* FDI are, however, much more dispersed. Oxelheim (1993) takes a clear stand on the issue and states that "... when the value of inward direct investment is fully comprehended, the competition for inward foreign direct investment will become intense." (p. 13). We wish to take a similar, but more cautious, view.

Haaparanta (1997) notes that, according to traditional economic theories, globalization can only improve consumers' welfare. A simple argument would be that the opening opportunities are exploited voluntarily, and thus they must benefit all participants. He comments, however, that in the past 10 years this idea has been in the background of the discussion.

It has been suggested that the rapid development of global financial markets may have destabilizing macroeconomic effects.[32] While FDI is by no means as footloose as financial asset investment, significant variations in the inward FDI stock can also have macroeconomic consequences.

Box 3.6 Notes on Theories of Foreign Direct Investment.

Whereas trade theory operates at the country-level, the foundations of foreign direct investment theories are in microeconomics. The origins of the literature can be traced to Coase's (1937) article, in which he argues that due to transaction costs it may occasionally be more efficient to produce internally rather than to rely on markets. Managing geographically dispersed activities causes extra expenses; reduction of transaction costs is one justification for these.

Caves (1996, p. 1-2) gives a rather mechanical description of the basic types of MNEs: (1.) a horizontally integrated, (2.) a vertically integrated, and (3.) a diversified MNE.[33] He suggests applying industrial organization theories developed for the analysis of firms within a single country.

---

[32] Financial markets are sensitive to country risk and watch closely a country's external debt, current account deficits, and political developments. Doubts about a country's future can cause significant asset flows, which in turn can cripple a country's financial markets with severe macroeconomic consequences.

[33] *Horizontal:* A multi-plant firm turning a similar line of goods from all of its ventures in each geographical market. *Vertical:* Outputs of some plants serve as inputs for others. *Diversified:* Plants are not horizontally or vertically integrated to each other.

Caves equates MNEs in the *first* group to a multi-plant firm serving several countries. 'Locational forces' justify the existence of globally dispersed production. Given the geographical distribution of production, there must be 'governance or transaction-cost advantages' to have the plants under a single administrative control. Some intangible firm-specific asset may be the source of these advantages.[34] MNEs in the *second* group can be characterized as vertically integrated firms whose production units locate in different countries; thus theories of vertical integration can be applied. Again locational factors determine geographical locations of various activities. Reasons for vertical integration may be similar to those in the case of horizontal integration. An additional issue is the reduction of risk relating to the availability and price of intermediate inputs. Furthermore, a firm may be unwilling to transfer knowledge that is needed to supply it with a certain intermediate input.[35] MNEs in the *third* group may have risk diversification as a motive. A shareholder could, however, reach a similar outcome by holding a well-diversified portfolio. Thus it may be the management that is keener on forming a diversified MNE since they face large personal adjustment costs if the firm's survival is threatened. Of course there may exist some firm-specific asset, such as marketing know-how, justifying the diversification in seemingly unrelated sectors. Furthermore, there may be restrictions on portfolio investments that can be circumvented through FDI.

Perhaps the most widely accepted way to formalize discussion on MNEs and FDI is the so-called eclectic (or OLI) paradigm, commonly attributed to the works of Dunning (see, e.g., Dunning, 1993, especially 4.3.3). It offers a holistic view of the issue and attempts to cover both inward and outward foreign direct investment by MNEs. It is not, however, a particularly useful framework for traditional economic modeling for the very reason that the perspective is so broad.

The OLI paradigm explains why cross-border value-added activities of MNEs are distributed in a certain way. The 'O' in the name refers to *ownership* specific advantages associated with certain nationality or group of owners. The *location* specific – 'L' – advantages refer to the fact that enterprises in a certain

---

[34] High transportation costs, trade restrictions, specialization in products and/or services that can not be transported (e.g., accommodation), cross-country differences in production costs, taxation (MNEs can efficiently exploit international differences in taxation through transfer pricing.), institutional framework (e.g., patent and property rights protection.), as well as strategic reasons (e.g., attempts to capture monopoly power through buying of a competitor or by restricting competitors willingness to expand to the market in question.) may favor horizontal integration.

[35] Supply of intermediate inputs can be organized in a number of ways, the two extremes being spot-market operations and vertical integration. The combination of switching cost, specialization of production facilities, and negotiating & monitoring costs determine which mode is optimal – the higher the costs or the degree of specialization, the more advantageous FDI (i.e., cross-border vertical integration) is.

location are somehow able to acquire factors of production[36] on more favorable terms than those in other areas. There are also possible advantages to *internalize* – 'I' – some transactions through hierarchical control; this may, for instance, relieve informational problems sometimes associated with open-market transactions. The logic of the OLI paradigm can be outlined as follows: (1.) an enterprise has some O-advantages through the possession of some intangible asset (e.g., managerial talent) or common governance of cross-border activities, (2.) it is decided that the best way to earn return on 'O' is to internalize – 'I' – some market activities, and (3.) country-specific L-advantages then determine the location of the MNE's various business activities.

The paradigm predicts that the higher the level of O-advantages, the higher the incentive to internalize their use. Countries that lack a certain kind of O-advantage are more likely to attract FDI, exploiting the O-advantage in question. Note, however, that no *a priori* predictions about the direction of FDI flows are being made. The dynamic nature of the paradigm should be emphasized: "As countries move along their development paths, the OLI configuration facing outward and inward investors continues to change." (Dunning, 1993, p. 89).

The above firm-specific advantages explain foreign direct investment. Countries enter the equation by having locational advantages, which determine the cross-country composition of MNEs' value-added activities.

It is also frequently argued that FDI contributes to raising income inequality and unemployment. In the industrialized countries, especially people in the low-skill manufacturing professions have certainly felt the competition from developing countries, the production capacity of which is partly created through FDI. In the developing countries, the landing of MNEs and their business activities is likely to cause income inequality at least in the short-run. The link from FDI to income inequality and unemployment is, however, far from obvious. We would rather argue that these may instead be a result of global competition, only *one* facet of which is FDI.

In principle, the increased mobility of resources and greater competition free up unproductive resources and contribute to economic efficiency (OECD, 1997c, p. 27). These benefits do, however, fall quite unevenly across national economies. Globalization promotes necessary and inevitable structural change. Unfortunately these adjustments often have considerable social costs.

---

[36] *Factors of production* are discussed here in a broad sense, including all tangible (e.g., labor and capital) and intangible assets (e.g., information and managerial talent). Also, features of the operating environment, e.g., economic, cultural, legal, and political institutions, are indirectly parts of the production process.

Box 3.7 Arguments *For* and *Against* Inward and Outward Foreign Direct Investment.

Below we discuss positive and negative effects of outward and inward FDI. *Knowledge* has a curious role here: it comes up in every one of the groups we discuss in one form or another. Furthermore, the effects of FDI partly depend on *how* the investments are made, i.e., whether (1.) an existing firm is purchased, or whether (2.) is a new one is founded (a 'Greenfield' investment).

Potential Benefits of Outward FDI

Market. One justification for a Greenfield investment may be a need to defend the market position in an existing market. Alternatively an existing company can be bought, in which case market share is 'acquired' directly. Local presence increases creditability, lowers transportation cost, and makes it possible to circumvent existing trade restrictions. Furthermore, some goods and services, e.g., accommodation, cannot be transported, and thus FDI is perhaps the only viable alternative to be present in the market.

Strategy. By being the earliest MNE to make Greenfield investments on a given market, the firm has a first mover advantage: it can gain foothold before others, and it may even attempt saturating the market and become the sole provider. Besides increasing monopoly power, a large global market share also gives a firm an important role in establishing worldwide product standards. Also, access to international capital markets improves with global presence. Diversifying production and input sources across countries obviously smoothes a firm's cash flow.

Outward FDI may provide the company with strategically important resources (Hämäläinen, 1997, p. 70): examples are acquisitions of technologically intensive firms or setting up subsidiaries in areas of dynamic resource creation and upgrading.

Possible Drawbacks of Outward FDI

There has been some discussion on what is the effect of outward FDI on domestic employment and capital stock, even though causality is highly questionable (WEF, 1997, p. 38). It is plausible to argue that "If the build-up of foreign affiliates' assets is financed through cross-border flows of capital, and if raising this capital involves crowding out of home-country investments, ODI [outward direct investment] would affect domestic capital formation adversely. There seems to be little evidence, however, at least for major home countries, that such crowding out takes place (UN, 1995)." (Hämäläinen, 1997, p. 70).

FDI also transfers some domestic knowledge to the host country; it is sometimes feared that the host countries will eventually catch up in the industries where the home country may currently be the technology leader. This argument ignores the fact the FDI is by no means the only channel of spillovers; furthermore, there is no *a priori* reason why knowledge could not be transferred from the host to the home country.

Potential Benefits of Inward FDI

The World Bank argues that "Foreign direct investment can bring substantial gains to recipient economies, contributing to physical capital formation, human capital development, transfer of technology and know-how (managerial skills), and expansion of markets and foreign trade." (WB, 1997, p. 31).

A less developed country almost surely benefits from knowledge spillovers, which almost unavoidably accompany inward FDIs. MNEs' effect on local human capital development takes place through, e.g., local hiring and training. The effect may also be indirect as the subsidiary has local suppliers, distributors, etc. MNEs' 'expand markets and foreign trade' by opening channels to previously untapped markets. Thus, FDI may contribute to national welfare through increased volume of exports.

There have been some concerns about the decreased savings rate in the industrialized countries – to the degree that there is some discussion about the 'global capital shortage' (OECD, 1995). If a country cannot make the needed investment with domestic funds, inflows of FDI are crucial in maintaining the domestic capital stock. The net FDI flow from industrialized countries may eventually turn, as for instance China, Malaysia, and Singapore currently sport domestic savings rates in the 12-20% range (WEF, 1997, p. 34).

As inward FDI decreases transportation costs, domestic customers may benefit through lower prices of previously imported goods. Also, increased competition on the domestic market may have a similar effect.

Possible Drawbacks of Inward FDI

As a country advances, the benefits from knowledge spillovers through FDI are less obvious, although it should be kept in mind that any country in the world will always depend on imported technology to some extent. The accumulated knowledge also flows out of the country and in advanced countries there have been fears that the domestic technology base is somehow 'stolen' through inward FDI.

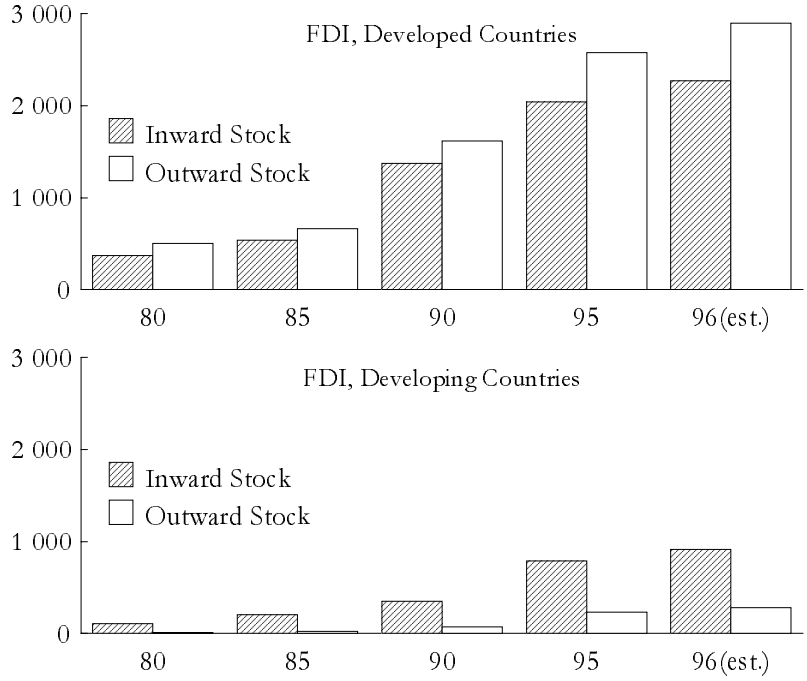
Note that inward FDI may eventually *de*crease domestic competition, if MNEs' production in the host country drives domestic suppliers out of business. Market power transfers to higher prices and thus harms domestic consumers. This could also have detrimental effects on the national innovation system.[37]

Figure 3.7 demonstrates the steady increase of foreign ownership of productive assets in both developed and developing countries. Developed countries command 90% of the outward FDI stock and they also host 70% of the inward FDI stock; both of

[37] "... an MNC acquires technology and R&D resources in a foreign country for less than their local opportunity cost and uses these resources to outcompete the local industry with no positive restructuring effects on the local economy. This could for instance happen if the host country supply of qualified scientists and engineers is scarce and local competitors are small but growing." (Granstrand et al., 1992, p. 244)

these stocks have increased by more than fourfold in fifteen years (1980-95). The developing countries seem to be catching up: the inward FDI stock has increased by more than sixfold over the same period, and the outward FDI stock was almost 20 times larger in 1995 than it was in 1980.[38]

Figure 3.7 Inward and Outward FDI Stocks: Developed and Developing Countries (Billions of $).



Source: UN (1997, Annex tables B.3 and B.4).

Table 3.8 lists FDI stocks in selected countries.[39] The section in the *upper left corner* shows that the United States has the largest inward FDI stock followed by the United Kingdom and Germany. Finland is 38th. Relative to the size of the domestic economy (as measured by annual GDP, see *upper right corner* of Table 3.8), how-

[38] The phenomenal growth of the outward FDI stock can partly be attributed the modest starting point.

[39] Comparison includes 67 countries (Algeria, Argentina, Australia, Austria, Belgium-Luxembourg, Bostwana, Brazil, Bulgaria, Cameroon, Canada, Chile, China, Colombia, Costa Rica, Czech Rep., Denmark, Dominican Rep., Egypt, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, India, Indonesia, Ireland, Italy, Japan, Jordan, Kenya, Korea, Rep., Latvia, Lithuania, Malaysia, Mexico, Morocco, Netherlands, New Zealand, Nigeria, Norway, Pakistan, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Russian Federation, Senegal, Singapore, Slovakia, Slovania, S. Africa, Spain, Sweden, Switzerland, Thailand, Tunisia, Turkey, Ukraine, UK, USA, Uruguay, Venezuela, and Yemen). Currently they account for app. 95% of the global FDI stock.

ever, Singapore, Pakistan, and Nigeria seem to have to largest inward FDI stocks. Note that, in this comparison, Japan is clearly last. In this relative comparison, Finland drops a few notches.

The *middle* section of Table 3.8 shows that the U.S. and the U.K. also top the list of outward FDI stock (*left-hand side*). Compared to the list above, Japan surpasses Germany. Despite its size, Sweden ranks 11th; Finland is also a respectable 18th. Relatively speaking (*right-hand side*), Hong Kong, Switzerland, and the Netherlands hold the biggest outward FDI stocks.

The *bottom* section of Table 3.8 is perhaps its most interesting part. It shows that, on balance (*left-hand side*), China, Brazil, and Australia have attracted FDI the most. Denmark is the only Nordic country with a positive balance, i.e., it has attracted more FDI than it has emitted. Note that, on balance, Japan is by far the most important FDI source in the world: Japanese have been very active investors abroad, but have been reluctant to open up their domestic market for foreign investment. The relative comparison (*right-hand side*) shows an interesting fact: relatively speaking, Finland and Sweden are, on balance, more important FDI sources than Japan.

Sectoral Distribution

On the sectoral distribution of FDI inflows, the World Bank (WB, 1997, p. 28-29)[40] notes that services have increased their relative share to over one-third in the developing countries. Manufacturing accounts for less than one-half. The remainder comprises of agriculture and mining. Furthermore, manufacturing is moving from low-tech & labor-intensive industries to high-tech industries.

In the industrialized countries FDI "... has tended to concentrate in a few industries, particularly computers, chemicals, electronics and motor vehicles..." (OECD, 1996a, p. 16). There is relatively little exact information on the sectoral composition of FDI even among the industrialized countries. Even though differences across countries are significant, roughly speaking, it can be said that primary production accounts for one-tenth and tertiary production roughly half of the inward and outward FDI; the remainder is accounted for by secondary production.

---

[40] The source notes that "The sectoral distribution of foreign direct investment in developing countries is not well documented..."; thus the data should be interpreted with caution.

Table 3.8 Inward & Outward FDI Stocks and their Balance in Selected Countries (1996, Billions of $, % of GDP).

Inward FDI stock, $ billion		
Rank	Country	1996
1.	USA	644.72
2.	UK	344.70
3.	Germany	170.99
4.	China	169.11
5.	France	168.43
8.	Netherlands	118.63
18.	Sweden	42.01
23.	Denmark	23.39
24.	Norway	23.08
33.	Ireland	13.95
37.	S. Africa	10.81
38.	**Finland**	**9.40**
39.	Peru	9.03
67.	Lithuania	0.30
68.	Iceland	0.26

Inward FDI stock, % of GDP		
Rank	Country	1996
1.	Singapore	71.0%
2.	Pakistan	58.1%
3.	Nigeria	51.7%
4.	New Zealand	50.5%
5.	Malaysia	42.4%
11.	Netherlands	30.2%
21.	Ireland	20.0%
24.	Sweden	16.8%
30.	Norway	14.6%
33.	Denmark	13.4%
51.	Kenya	7.9%
52.	**Finland**	**7.6%**
53.	Germany	7.3%
67.	Russia	1.3%
68.	Japan	0.4%

Outward FDI stock, $ billion		
Rank	Country	1996
1.	USA	794.10
2.	UK	356.35
3.	Japan	330.21
4.	Germany	288.40
5.	France	206.44
6.	Netherlands	184.74
7.	Switzerland	153.30
11.	Sweden	76.34
16.	Norway	27.84
17.	Denmark	22.44
18.	**Finland**	**18.30**
19.	China	18.00
27.	Ireland	4.53
67.	Bulgaria	-0.02
68.	Jordan	-0.12

Outward FDI stock, % of GDP		
Rank	Country	1996
1.	Hong Kong	72.5%
2.	Switzerland	52.2%
3.	Netherlands	47.1%
4.	Singapore	39.9%
5.	Nigeria	37.2%
6.	UK	31.1%
7.	Sweden	30.5%
10.	Norway	17.6%
11.	New Zealand	16.0%
12.	**Finland**	**14.8%**
13.	France	13.4%
14.	Denmark	12.9%
23.	Ireland	6.5%
67.	Bulgaria	-0.2%
68.	Jordan	-1.6%

Balance: Inward - outward stock, $ billion		
Rank	Country	1996
1.	China	151.11
2.	Brazil	100.91
3.	Australia	77.82
4.	Mexico	68.30
5.	Spain	66.81
6.	Indonesia	57.35
21.	Ireland	9.42
42.	Denmark	0.95
57.	Norway	-4.76
58.	**Finland**	**-8.90**
59.	UK	-11.64
60.	Sweden	-34.33
63.	Netherlands	-66.11
67.	USA	-149.39
68.	Japan	-312.18

Balance: Inw. - outward stock, % of GDP		
Rank	Country	1996
1.	Pakistan	57.6%
2.	Yemen	35.5%
3.	Costa Rica	34.7%
4.	New Zealand	34.5%
5.	Hungary	32.4%
6.	Malaysia	31.5%
19.	Ireland	0.14
54.	Denmark	0.01
60.	Norway	-3.0%
63.	Japan	-6.8%
64.	**Finland**	**-7.2%**
65.	Sweden	-13.7%
66.	Netherlands	-16.8%
67.	Switzerland	-31.9%
68.	Hong Kong	-56.8%

Source: UN (1998, Annex tables B.3 and B.4). WDI (1998).
Note: A total of 67 countries (footnote 39). Tables above always include the top five and bottom two countries, entries of Denmark, Finland, The Netherlands, Norway, Ireland, and Sweden, as well as those just above and below the Finnish entry. If this logic left less than 15 countries to the listing, 6th, 7th etc. was included until 15 was reached.

Major MNEs

The branches of major MNEs (see Table 3.9 and Table 3.10) tell a similar story on the sectoral composition of FDI. Chemicals, electrical and electronic equipment, and motor vehicles seem to be some of the more popular branches.

The OECD (1996a, p. 10) notes that the subsidiaries of MNEs tend to have higher labor productivity, investment, and trade intensity than domestic firms. Furthermore, they are usually larger than their domestic counterparts and employ the latest business methods in high-tech industries. According to the OECD, core functions, i.e., R&D and top management, nevertheless typically locate in the home country.

Table 3.9 The World's Top 20 MNEs in 1995.

Name	Industry	Country	**Foreign Assets (bn $)**	Sales (bn $)	Of which foreign	Employment	Of which foreign
1. Shell	Petroleum refining	UK/Netherl.	**80**	109.9	73%	104 000	78%
2. Ford	Motor vehicles	USA	**69**	137.1	31%	346 990	30%
3. GE	Electronics, electr. eq.	USA	**69**	70.0	24%	222 000	32%
4. Exxon	Petroleum refining	USA	**67**	121.8	80%	82 000	54%
5. GM	Motor vehicles	USA	**54**	163.9	29%	745 000	34%
6. Volkswagen	Motor vehicles	Germany	**50**	61.5	61%	257 000	44%
7. IBM	Computers, office eq.	USA	**42**	71.9	63%	225 347	50%
8. Toyota	Motor vehicles	Japan	**36**	111.7	45%	146 855	23%
9. Nestlé	Food	Switzerland	**33**	48.7	98%	220 172	97%
10. Mitsubishi	Diversified	Japan	**n/a**	124.9	41%	35 000	42%
11. Bayer	Chemicals	Germany	**28**	31.1	63%	142 900	55%
12. ABB	Electronics, electr. eq.	Switzerland	**27**	33.7	87%	209 637	94%
13. Nissan	Motor vehicles	Japan	**27**	56.3	44%	139 856	43%
14. Elf Aquitaine	Petroleum refining	France	**27**	42.5	65%	85 500	48%
15. Mobil	Petroleum refining	USA	**26**	73.4	66%	50 400	52%
16. Daimler-Benz	Motor vehicles	Germany	**26**	72.1	63%	310 993	22%
17. Unilever	Food	UK/Netherl.	**26**	49.7	86%	307 000	90%
18. Philips	Electronics, electr. eq.	Netherlands	**25**	40.1	96%	265 100	83%
19. Roche	Pharmaceuticals	Switzerland	**25**	12.5	96%	50 497	80%
20. Fiat Spa	Motor vehicles	Italy	**24**	40.6	65%	248 180	39%

Source: UN (1997, Table I.7). Mitsubishi employment: *Fortune, 4 Aug. 1997.*

Table 3.9 lists the top 20 MNEs in terms of foreign assets. The largest MNE in 1995 was Shell, which is originally a Dutch company. The other top five companies have roots in the USA. The largest MNE on the list, which has Scandinavian roots, is ABB (12th). Nowadays, the head office of ABB is located in Switzerland, but Swedes still have 50% ownership. In terms of multi-nationality, ABB is in 6th position (Table 3.10); right below it is the second

company with strong Scandinavian ties, Electrolux. Swedish firms perform quite strongly in terms of multi-nationality: there are four originally Swedish firms on the top 20 list. There are no other firms on the top 20 list, which have Scandinavian ties.

Table 3.10 The World's 'Most Multinational' MNEs in 1995.

Name	Industry	Country	Sales (bn $)	Of which foreign	Employ-ment	Of which foreign	Index
1. Nestlé	Food	Switzerland	48.7	98%	220 172	97%	**94.0**
2. Thomson	Media	Canada	7.2	93%	44 400	90%	**93.3**
3. Holderbank F.	Construction	Switzerland	7.0	93%	43 923	92%	**92.1**
4. Seagram	Beverages	Canada	9.7	98%	16 100	90%	**89.7**
5. Solvay	Chemicals	Belgium	9.3	95%	38 616	95%	**89.6**
6. ABB	Electronics, electr. eq.	Switzerland	33.7	87%	209 637	94%	**88.6**
7. Electrolux	Electronics, electr. eq.	Sweden	16.3	92%	112 300	87%	**88.3**
8. Unilever	Food	UK/Netherl.	49.7	86%	307 000	90%	**87.1**
9. Philips	Electronics, electr. eq.	Netherlands	40.1	96%	265 100	83%	**85.4**
10. Roche	Pharmaceuticals	Switzerland	12.5	96%	50 497	80%	**85.1**
11. SCA	Paper	Sweden	9.1	91%	34 857	78%	**79.7**
12. Northern Telec.	Telecommunication	Canada	10.7	86%	63 715	67%	**78.4**
13. Glaxo Wellcome	Pharmaceuticals	UK	12.1	92%	54 359	74%	**76.5**
14. Cable & Wireless	Telecommunication	UK	8.5	69%	39 636	77%	**75.6**
15. Volvo	Motor vehicles	Sweden	25.6	85%	79 050	85%	**73.8**
16. News Corp.	Media	Australia	10.3	87%	30 000	74%	**73.5**
17. Shell	Petroleum refining	UK/Netherl.	109.9	73%	104 000	78%	**73.0**
18. Grand Metrop.	Food/beverages	UK	12.6	90%	63 533	72%	**72.4**
19. Petrofina	Petroleum refining	Belgium	18.7	80%	13 653	68%	**70.4**
20. Saint-gobain	Construction	France	13.5	71%	89 852	75%	**69.7**

Source: UN (1997, Table I.7 – modified).
Note: Those among the top 100 that have the highest 'Transnationality' Index Value. The Transnationality Index is calculated as an average of (1.) foreign assets to total assets, (2.) foreign sales to total sales, and (3.) foreign employment to total employment.

From Table 3.11, we can infer that MNEs have on average 6 affiliates. Germany hosts over 16% of the parent companies. Surprisingly, Korea (not presented in Table 3.11) hosts over 10% of the world's parent corporations. Japan, Sweden and the United States each have roughly 7–8% of the parent corporations. China has the most affiliates – a total of 45,000 (over 16% of the world total – not presented in the table). The Czech Republic (not in Table 3.11)[41], Singapore (not in Table 8), and the United States each host 6–7% of the foreign affiliates. Note that only Japan and Iceland have higher parents to affiliates ratios than Finland.

[41] The source reports that the Czech Republic had 20,337 foreign affiliates in 1995. In our opinion, this figure is on the high side.

Table 3.11 Number of Parent Corporations and Foreign Affiliates.

Area/Economy	Year	Parent Corp. Based in Country	Foreign Affiliates Located in Economy	Parent Corp. to For. Affiliates Ratio	Share of World Total Parent Corp.	Share of World Total For. Affliates
World		**44 508**	**276 659**	**0.16**		
EU		**22 111**	**54 862**	**0.40**	**49.7%**	**19.8%**
Austria	'94	877	2 205	0.40	2.0%	0.8%
Belgium	'96	152	2 000	0.08	0.3%	0.7%
Denmark	'92	800	1 289	0.62	1.8%	0.5%
Finland	**'96**	**1 200**	**1 200**	**1.00**	**2.7%**	**0.4%**
France	'95	2 126	8 682	0.24	4.8%	3.1%
Germany	'94	7 292	11 581	0.63	16.4%	4.2%
Greece	91	n/a	798	n/a	n/a	0.3%
Ireland	'94	80	1 050	0.08	0.2%	0.4%
Italy	'95	966	1 630	0.59	2.2%	0.6%
Netherlands	'93	1 608	2 259	0.71	3.6%	0.8%
Portugal	'96	1 657	6 671	0.25	3.7%	2.4%
Spain	'95	236	6 232	0.04	0.5%	2.3%
Sweden	96	3 650	5 371	0.68	8.2%	1.9%
U.K.	'92	1 467	3 894	0.38	3.3%	1.4%
Other W. Europe		**4 050**	**7 040**	**0.58**	**9.1%**	**2.5%**
Iceland	'95	50	40	1.25	0.1%	0.0%
Norway	'94	1 000	3 000	0.33	2.2%	1.1%
Switzerland	'85	3 000	4 000	0.75	6.7%	1.4%
Other Developed C.		**10 219**	**33 610**	**0.30**	**23.0%**	**12.1%**
Australia	'96	875	2 961	0.30	2.0%	1.1%
Canada	'95	1 691	4 583	0.37	3.8%	n/a
Japan	95	3 967	3 405	1.17	8.9%	1.2%
New Zealand	'96	216	2 169	0.10	0.5%	0.8%
South Africa	'78	n/a	1 884	n/a	n/a	0.7%
U.S.	'94	3 470	18 608	0.19	7.8%	6.7%
Developed C.		**36 380**	**93 628**	**0.39**	**81.7%**	**33.8%**

Source: UN (1997, Table I.2 – modified) – UNCTAD.
Note: We include only developed countries unlike the source. Concerns the latest available year. Totals include countries for which data were available.

Our discussion above has focused on large MNEs. This is indeed justified, since FDI is concentrated in the hands of relatively few companies (UN, 1997, p. xvii). It should be noted, however, that small and medium sized enterprises (SMEs) do play a role in the global scene. Internationalized SMEs account for about one-third of world manufactured exports (OECD, 1997c, p. 7). These exports are 4–6% of GDP in the OECD countries and about 12% in Asian economies.

As the OECD (1997b, p. 16) notes, globalization of MNEs is a self-enforcing process. As MNEs diversify their production sites globally, suppliers of related goods and services (e.g., component producers and banks) increase their presence in the same locations: for instance, financial and telecommunications services in turn help to reduce the operating cost of global companies, thus making FDI all the more attractive. Furthermore, as a firm invests in a certain location, its competitors often do the same in order to hedge their bets.

The above discussion has shed some light on the four facets of globalization worldwide. The following section discusses globalization trends in Finland.

Box 3.8 Future Prospects of FDI.

The WEF (1997, p. 39) has created an index assessing the future FDI inflow prospects of a country. in WEF's 53 country comparison Japan (3rd) and Germany (7th) rank surprisingly high: this may be due to the fact that the institutional frameworks in these countries previously hindered inflows of foreign capital, and now, as some of the previous restrictions are removed, there is bound to be significant FDI inflows. The WEF's index is consistent with our argument that Finland has become a more attractive host for MNEs' business activities: based on the information on FDI stocks, Finland (28th) ranks quite high here.

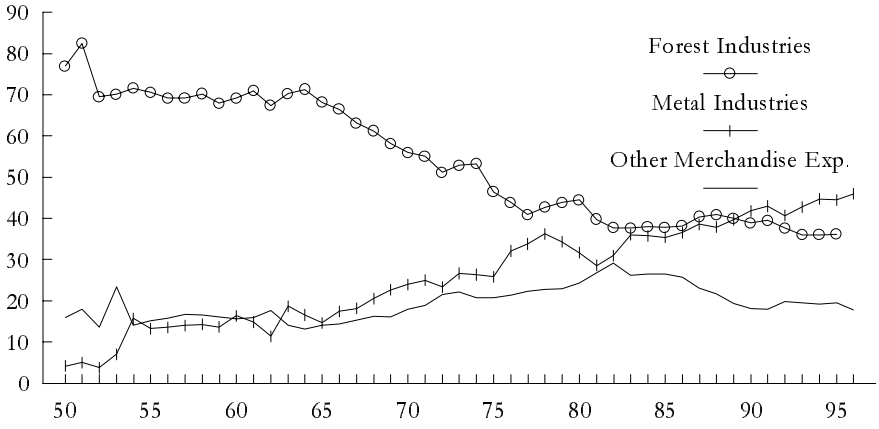
The WEF additionally asked *"What countries will attract the most FDI inflows in the medium term?"*, in its 'Executive Survey'. It turned out that China, the United States, India, Indonesia, and Brazil top the lists of business leaders.

4 GLOBALIZATION TRENDS IN FINLAND

4.1 Exports[42]

The history of Finnish exports evolves around forest-related products. As coniferous forests in Central Europe were used up in the early 17th century, new sources of wood tar – an important input for the shipbuilding industry at the time – had to be found. Finland (under Swedish rule at the time) answered the call and became the leading European producer. In the 18th century, increased competition and deteriorating prices made Finns shift towards the sawn wood business. Industrialization in Central Europe and the UK fueled demand. As late as the 1920s, forest-related products, mainly sawn wood and pulp, accounted for 80–90% of Finnish exports. As can be seen in Figure 4.1, the relative share of metal industries' products began to increase after the Second World War.

Figure 4.1 Merchandise Exports by Industry, % of the Total.



Source: Vartia & Ylä-Anttila (1996).

[42] This Section draws from Mäkinen (1998).

Table 4.1 Finnish Exports by Destination (Billions of $).

Country / Region	1990		Country / Region	1996	
	Exports value, bn $	Share of the total, %		Exports value, bn $	Share of the total, %
1. Sweden	3.8	14.0%	1. Germany	4.8	11.8%
2. The Soviet Union	3.4	12.5%	2. Sweden	4.3	10.5%
3. Germany (West)	3.3	12.4%	3. U.K.	4.1	10.0%
4. U.K.	2.8	10.4%	4. USA	3.2	7.9%
5. France	1.6	6.0%	5. Russia	2.4	6.0%
6. USA	1.5	5.8%	6. France	1.7	4.1%
7. The Netherlands	1.1	4.2%	7. Netherlands	1.6	3.8%
8. Denmark	0.9	3.5%	8. Denmark	1.2	3.0%
9. Italy	0.8	3.1%	9. Norway	1.1	2.8%
10. Norway	0.8	3.0%	10. Estonia	1.1	2.7%
EU	16.2	60.7%	EU	21.4	52.7%
Asia7[1]	0.7	2.6%	Asia7[1]	2.7	6.7%
Japan	0.4	1.4%	Japan	1.0	2.6%
China	0.2	0.6%	China	0.6	1.4%
KIE6[2]	0.3	1.0%	KIE6[2]	1.1	2.6%
Central & South Am.	0.3	1.1%	Central & South Am.	0.6	1.4%
Total	26.7	100.0%	Total	40.6	100.0%

Source: Mäkinen (1998) – OECD Int. Trade by Commodities Statistics.
Note: (1.) Asia7 = Hong Kong, Indonesia, Malaysia, Singapore, South Korea, Taiwan, and Thailand. (2.) KIE6 = Bulgaria, Czech Republic, Hungary, Poland, Romania, and Slovenia.

Table 4.2 Finnish Exports by Sector (Billions of $).

Branch	1990		1996	
	Exports value, bn $	Share of the total, %	Exports value, bn $	Share of the total, %
1. Agric., fishing, hunting & forestry; mining & quarrying	0,2	1%	0,7	2%
2. Wood & wood products	1,9	7%	2,5	6%
3. Pulp & paper	8,2	31%	9,3	23%
4. Basic metal	2,2	8%	3,2	8%
5. Metal prod. & mach.	4,4	17%	6,2	15%
6. Electric & electronic prod. & equip.	2,4	9%	7,1	18%
7. Food, beverage & tobacco	0,6	2%	1,0	2%
8. Textiles, apparel, leather & footwear	1,1	4%	0,9	2%
9. Chemical industries	1,7	6%	2,5	6%
10. Transport equipment	1,9	7%	2,9	7%
11. Other industries	2,2	8%	4,3	11%
Total	26,7	100%	40,6	100%

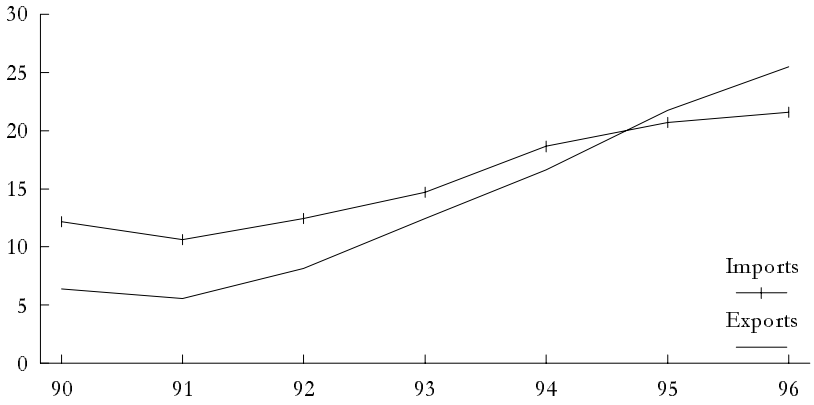
Source: Mäkinen (1998) – OECD Int. Trade by Commodities Statistics.

Besides changing in composition, there are two additional trends in Finnish exports since World War II: (1.) increasing value added content of export products, and (2.) improving terms of trade[43].

From 1991 onwards the balance of trade has been positive, i.e., merchandise exports have exceeded imports. Furthermore, both the geographical (Table 4.1) and sectoral (Table 4.2) distribution of exports have be-come considerably more diverse.

While traditional forest industry related products still dominate Finnish exports, the shift towards more knowledge intensive products has been remarkable in recent years. In the 1990s, the value of high-tech exports has surpassed the value of imports (Figure 4.2). The so-called 'high-tech' products comprised a good 6% of Finnish exports in 1990; by 1995, the figure had already risen to 12.4%.[44] Even the latter figure, however, is below the OECD average of 15.5%, but the current growth rates seem to suggest that Finland will surpass the OECD average by the year 2000.

Figure 4.2 High-Technology Exports and Imports (FIM Bn.).



Source: Mäkinen (1998) – Statistics Finland.

The changes in the composition of Finnish trade partly reflect worldwide trends. The effect of overall market effects can be removed by calculating various types of specialization indices. As already seen in Figure 2.4, improvements in the Finnish resource

[43] Roughly defined as the ratio of export and import prices. Note that (1.) and (2.) are interrelated.

[44] In 1996 nearly 80% of the Finnish high-tech exports originate from the telecommunications cluster.

base, i.e., higher R&D-intensity and a more educated labor force, have started to influence the country's production structure.

Table 4.3 Main Export Products of Finland in 1995: By Export Value and by OECD Export Market Share.

Rank	Top 20 products in terms of export value in 1995 (Mill. of $)	Exp. mkt share '95	**Export value '95**	Share of nat. exp.	Ann. exp. growth '90-5
1	Coated mechanical paper, e.g., LWC	35.2 %	**2 321**	5.74 %	14 %
2	Sawn soft wood	11.0 %	**1 711**	4.23 %	11 %
3	Mobile phones	10.6 %	**1 685**	4.17 %	58 %
4	Uncoated mechanical paper, e.g., SC	28.2 %	**1 505**	3.72 %	8 %
5	Passenger cruisers, ferry boats, etc.	22.9 %	**895**	2.22 %	76 %
6	Folding box board	28.9 %	**804**	1.99 %	11 %
7	Uncoated fine paper, 40–150g/m^2	13.6 %	**735**	1.82 %	4 %
8	Newsprint	7.3 %	**728**	1.80 %	4 %
9	Coated fine paper, <150g/m^2	12.5 %	**666**	1.65 %	24 %
10	Cellular & fixed network systems	12.3 %	**632**	1.56 %	39 %
11	Passenger vehicles	0.3 %	**559**	1.38 %	14 %
12	Parts for telecommunications equip.	3.5 %	**506**	1.25 %	39 %
13	Bleached hardwood pulp	10.6 %	**484**	1.20 %	2 %
14	Bleached softwood pulp	4.8 %	**475**	1.17 %	6 %
15	Graphic paper	20.7 %	**466**	1.15 %	25 %
16	ADP input & output units	2.0 %	**463**	1.15 %	36 %
17	Diesel generators & power plants	13.7 %	**409**	1.01 %	69 %
18	ADP processing units	4.7 %	**404**	1.00 %	615 %
19	Birch plywood	45.4 %	**404**	1.00 %	5 %
20	Static converters	7.2 %	**371**	0.92 %	36 %

Rank	Top 20 products in terms of OECD export market share in '95 (Mill. of $)	**Exp. mkt share '95**	Export value '95	Share of nat. exp.	Ann. exp. growth '90-5
1	Unroasted iron pyrites	**61.8 %**	14	0.03 %	11 %
2	Fox furskins	**61.5 %**	225	0.56 %	19 %
3	Cobalt oxides & hydroxides	**48.6 %**	66	0.16 %	35 %
4	Fructose	**45.5 %**	18	0.04 %	12 %
5	Birch plywood	**45.4 %**	404	1.00 %	5 %
6	Bituminized paper	**45.4 %**	4	0.01 %	5 %
7	Pitch & similar rosin preparations	**39.0 %**	9	0.02 %	74 %
8	Pulp making machinery	**38.9 %**	259	0.64 %	36 %
9	Uncoated kraft paperb., >225g/m^2	**35.9 %**	204	0.51 %	14 %
10	Coated mechanical paper, e.g., LWC	**35.2 %**	2 321	5.74 %	14 %
11	Mobile lifting frames, straddle carriers	**32.3 %**	79	0.19 %	22 %
12	Wallpaper base	**31.4 %**	76	0.19 %	2 %
13	Folding box board	**28.9 %**	804	1.99 %	11 %
14	Uncoated mechanical paper, e.g., SC	**28.2 %**	1 505	3.72 %	8 %
15	Fluting paper	**27.9 %**	209	0.52 %	13 %
16	Seal furskins	**27.5 %**	1	0.00 %	33 %
17	Uncoated kraft paperb., 150–225g/m^2	**25.6 %**	76	0.19 %	6 %
18	Passenger cruisers, ferry boats, etc.	**22.9 %**	895	2.22 %	76 %
19	Viscose fiber waste	**22.6 %**	7	0.02 %	17 %
20	Ferro-chromium	**21.6 %**	76	0.19 %	6 %

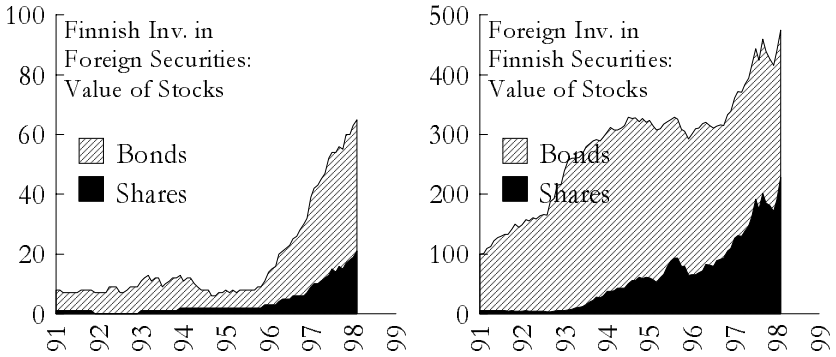
Source: Mäkinen (1998) – OECD Int. Trade by Commodities Statistics.

4.2 Capital Flows

The liberalization process in Finnish financial markets started in the mid-1980s, and the last restrictions on cross-border capital flows and foreign ownership were removed in the early 1990s. Liberalization of financial markets had, in the late 1980s, influence especially on private sector foreign borrowing. As the Finnish currency weakened in the early 1990s, the cost of foreign borrowing increased considerably and the volume decreased. At the same time, the public sector began to finance public deficits partly by issuing foreign bonds. As the currency has recovered during the 1990s, the public sector's borrowing strategy has proved quite successful.

Figure 4.3 shows that in the first half of the 1990s almost all of foreign investment in Finnish securities was in bonds. Foreign investment in Finnish shares began to increase in 1993 when the remaining restrictions on foreign ownership were abolished. Since then, foreign investment in Finnish shares has increased quite quickly. In February 1998, the values of foreigners' share and bond portfolios were almost equal. Foreign investors are mainly institutional investors, such as mutual and pension funds. They typically diversify their portfolios worldwide.

Figure 4.3 Portfolio Investment in Finland's Balance of Payments (Billions of FIM).



Source: ETLA Database – The Bank of Finland.

In addition, Figure 4.3 shows that until the mid-1990s Finnish investment in foreign securities was modest. Since then, investments both in foreign bonds and equities have increased quite rapidly. Investors have been mainly financial institutions and insurance

companies. However, the scale of Finnish investment in foreign securities is still quite insignificant compared to foreign investment in Finnish securities: the value of Finns' portfolio stock abroad was in early 1998 only one-seventh of the stock of foreigners' portfolio of Finnish stocks and bonds.

The Helsinki Stock Exchange is nowadays one of the most internationalized stock exchanges in the world, if we use the proportion of foreign ownership of shares as a unit of measurement. Foreign investors own some one-third of the shares listed in the Helsinki Stock Exchange. Measured by market value of their investment stock, the share is even larger, approximately 50%.[45,46] To compare, foreign investors' estimated proportion of market capitalization is, e.g., in Stockholm less than one-third and in Frankfurt slightly over ten percent.[47]

Foreign investment in Finnish shares has increased the market value of listed firms (Figure 4.4). The turnover of shares has also increased, largely due to increased foreign interest. In addition, listed Finnish firms have improved their methods of publishing information concerning, for instance, changes in current company performance or future company development scenarios. This, combined with increased share turnover and the increased number of investors, has made valuation of shares more reliable. Furthermore, foreign investors operating in the Finnish share markets have usually registered their holdings in administrative registers only. This indicates that they have not been interested in utilizing voting rights in annual meetings of companies. This, in fact, has increased the influence of Finnish owners. On the other hand, partly due to increased foreign interest, movements of share prices on the Helsinki Stock Exchange follow more closely the trends of global markets. This can, in turn, increase somewhat the volatility of the Finnish share markets. On the other hand, as mentioned above, strong foreign interest in the market has increased turnover and liquidity of shares. This can decrease the volatility of share prices because the influence of single trades on share prices may become smaller.

---

45 This is because foreign investors have relatively large investments in companies that account for a large proportion of the total market value of companies listed on the HSE (e.g., *Nokia*).

46 The situation in spring 1998.

47 These values are based on an inquiry published in the *Helsingin Sanomat* Nov. 16, 1997.

Box 4.1 Foreign Investment in Listed Finnish Firms.

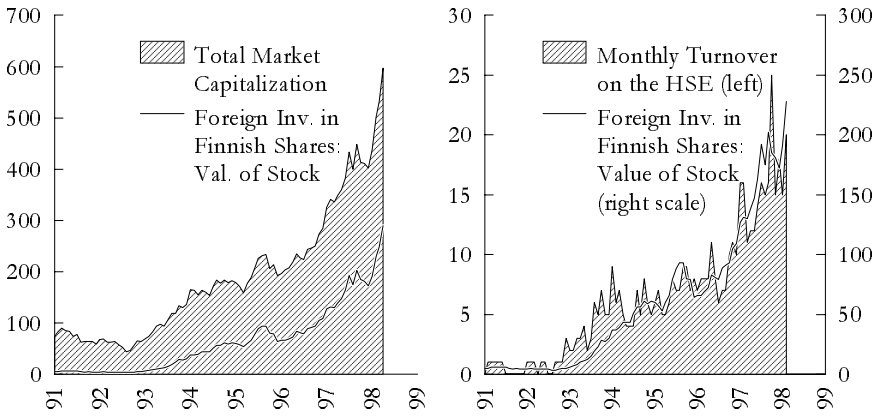
In the spring of 1998, about one-third of the shares of companies listed on the Helsinki Stock Exchange were owned by foreign investors. Measured by the market value of shares, foreigners' total proportion was even larger, approximately 50%. Foreign investors have made large investments, e.g., in the largest company in Finland, Nokia. Voting power in Nokia has, however, remained in Finland because foreign investors have not usually registered their holding in annual meetings. In addition, they have acquired mainly shares, which have minor voting rights. These two aspects are quite common in foreign investors' investment behavior in other companies, too. An explanation for this behavior is that foreign investors are mainly institutional portfolio investors, such as financial institutions and pension funds, which normally seek a competitive return on their investment rather than controlling power or strategic ownership.

Total Foreign Ownership Proportion (%) in Some Listed Firms in Finland (April 30, 1998).

Selected Listed Companies	Foreign Owneship, %
KCI KONECRANES	83
NOKIA	78
RAISIO	63
TAMRO	54
SAMPO	52
AMER	50
UPM-KYMMENE	49
CULTOR	49
POHJOLA	49
VALMET	48
ALMA MEDIA	40
TALENTUM	39
KONE	32
HUHTAMÄKI	31
OUTOKUMPU	26
ENSO	24
FINNLINES	21
KEMIRA	21
METRA	18
KESKO	16
VAISALA	12
ORION	11
PARTEK	8
NESTE	2
Total	
% of Stocks	35
% of Market Value	48

Source: Finnish Central Securities Depository (Arvopaperikeskus).

Figure 4.4 Foreign Influence in the Helsinki Stock Exchange (Billions of FIM).



Source: ETLA Database.

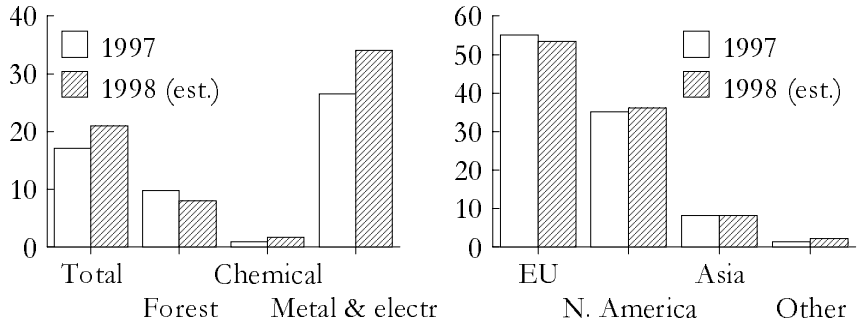
Summing up, foreign influence on Finnish capital markets has mainly had positive effects on the effectiveness and development of the markets. On the other hand, Finnish institutional investors, such as financial institutions and pension funds, have started to invest more in foreign financial markets. From the point of view of portfolio investment theory, this is a rational move. However, from the point of view of domestic market development, large-scale portfolio investments abroad may have adverse effects on the domestic market because they may decrease trading volume of shares listed on the Helsinki Stock Exchange.

4.3 Technology

In the previous sections there has been some discussion on the Finnish position in the global technology race. We have noted that Finland invests quite heavily in R&D and has also benefited from these investments. In this section, we analyze in some detail how globalization affects the Finnish technology base, although, as Åkerblom (1994, p. 7) notes, there are not comprehensive statistics available on this issue. In addition, a growing proportion of R&D activities is based on strategic alliances and informal R&D cooperation between firms. Traditional statistics give us no accurate information on these activities.

Internationalization of Finnish firms' R&D activities has followed the globalization trends of other functions, such as production and marketing. It is estimated that already approximately one-fifth of Finnish manufacturing companies' R&D is done abroad (Figure 4.5). The foreign R&D shares are largest, about one-third of the total R&D expenditure, in the metal and electronics industry. In other industries, foreign R&D activity is still quite insignificant. In the forest industry, for example, the proportion of foreign R&D activity is some ten percent. Foreign R&D activities of Finnish firms are located, primarily, in other EU countries and in the USA.

Figure 4.5 Finnish Firms R&D Activity Abroad (*Left*: % of the Total R&D, *Right*: Geographical Distribution, %).



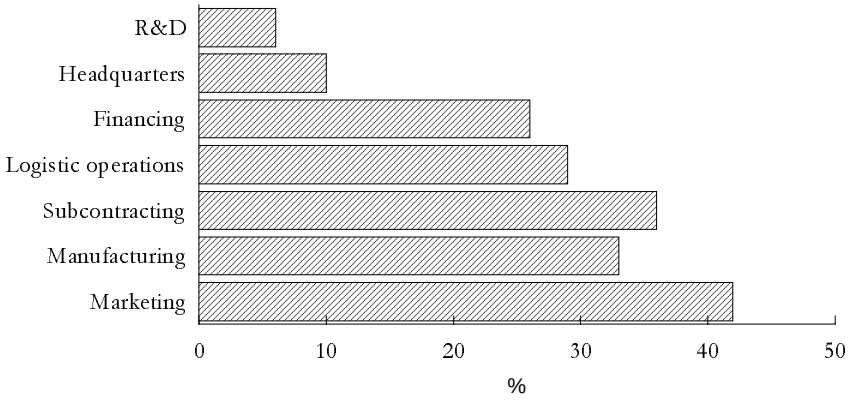
Source: Teollisuus ja Työnantajat (TT, 1998).
Note: EU excludes, of course, Finland.

Although a quite large proportion of R&D activities of Finnish companies is conducted abroad, the focal point of R&D activity is still located in Finland. In fact, according to Puhakka (1994), among others, R&D activities are one of the least globalized function of firms: less than ten percent of firms in her sample reported that the focal point of their R&D activities has shifted abroad. In marketing activities, for instance, the corresponding share was more than 40% and in manufacture of goods above 30% (see Figure 4.6). The foreign focused R&D activity was largest among metal and electronics industry firms: about 10% of the firms in the sample had shifted the focal point of R&D activity abroad.

It has not been very common in Finnish industry to establish greenfield R&D centers abroad. Most of the Finnish companies' foreign R&D functions have become part of the company, as Finnish firms have acquired foreign firms. Moreover, the primary mo-

tive for internationalization of R&D activities has been in most cases related to market expansion – firms have sought to increase their market shares in foreign markets. Thus, the focus of foreign R&D activities has been in adaptation of firms' products to preferences and requirements of foreign markets.

Figure 4.6 Internationalization of Various Activities of Large Finnish Manufacturing Firms in 1993.



Source: Puhakka (1994).
Note: Share of the firms that have shifted the focal point of their activities abroad.

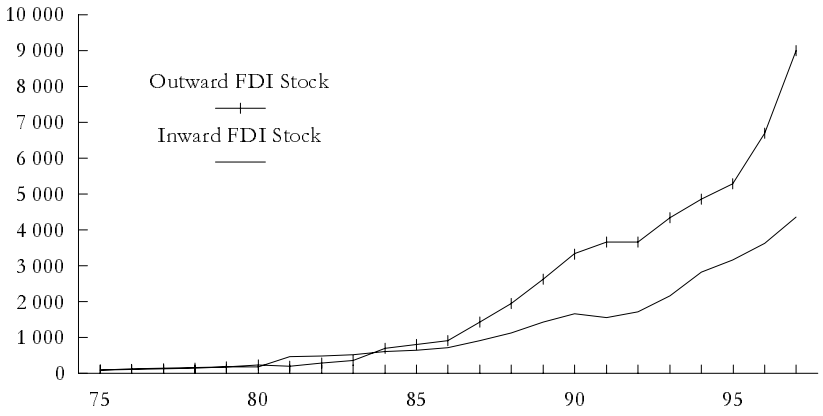
However, there are some arguments which support fears that R&D activities will be moved abroad on a larger scale than has occurred so far. For instance, due to large economies of scale and positive spillover effects related to R&D activities, there is a tendency for research functions to concentrate geographically. This is why potential bottlenecks in the technological infrastructure and in the educational system may cause a movement of R&D functions abroad. In addition, the internationalization process of Finnish industry has followed Swedish trends quite closely, with a lag of 10–15 years. Thus, it is possible that globalization of Finnish industry will lead to the same kind of situation that prevails nowadays in Sweden: a majority of R&D activities are located in the home country, but the adaptation of research and development results – the manufacture of knowledge intensive products – is carried out elsewhere.

At the time of writing this report, up-to-date statistics on the foreign owned firms' share of R&D in Finnish industry were not available. In the early 1990s, the share was some ten percent (Luukkanen, 1994). It is highly likely that the foreign-owned companies' share of R&D activity in Finland has increased during the 1990s due to an increased number of foreign-owned knowledge intensive firms.

4.4 Foreign Direct Investment

Figure 4.7 illustrates the development of inward and outward FDI stocks in Finland. As we can see, both inward and outward foreign direct investment started to expand quite rapidly in the second half of the 1980s. This trend has intensified during the 1990s, although growth temporarily slowed down in the early 1990s.

Figure 4.7 Inward and Outward FDI Stocks in Finland.



Source: ETLA Database – The Bank of Finland.
Note: Index where 1975=100.

Globalization of Finnish enterprises started much later than in most industrialized countries. At the end of the 1970s, foreign direct investment (FDI) outflows averaged less than FIM 500 million annually: mainly sales offices were established. It was not until the early 1980s that Finns started to acquire major productive assets abroad. It is fair to say that, in this respect, we were at least ten years behind the Swedish development. The largest companies commanded a lion's share of FDI outflows in the 1980s: in 1981 the fifteen largest investors comprised over 80% of the turnover of foreign subsidiaries (Ali-Yrkkö & Ylä-Anttila, 1997b, p. 24).

There are several explanations for the increase in *inward FDI flows*. The removal of the remaining restrictions on foreign ownership in 1993 made Finland a more potential destination for foreign firms' direct (as well as portfolio) investments. Furthermore, as the technological level of Finnish companies has improved quite rapidly, acquiring one of the existing companies has become a more attractive option. The deep recession in the early 1990s paved the way for foreign firms' to enter Finland: companies with sound business operations ran into financial difficulties and could be acquired at a reasonable price. Also, the depreciation of the Markka, Finnish membership in the EU, as well as the growth prospects of the Russian and Baltic markets has helped the matter.

The recent tendency of Finnish companies to focus on their core competencies contributes to both outward and inward FDI. Specialization on narrower segments requires global presence and large market shares in order to reach profitable business volumes. On the other hand, Finnish companies are more willing to sell the subsidiaries that are not considered to be of strategic importance: lately the buyers have often been foreign firms.

There is a clear imbalance between inward and outward investment: in 1997, for example, the outward FDI stock was two times greater than the inward stock. One explanation for the imbalance, as we shall observe in the following sections, is that Finnish firms have invested abroad mostly in manufacturing companies, whereas foreign companies have invested in Finland primarily in trade and services sectors.[48] The average size of acquisitions may also have been larger in outward FDI. Furthermore, in addition to capital flows related to mergers and acquisitions, direct investment capital flow statistics also include capital flows related to financial operations between parent company and foreign affiliate. The proportion of intra-group financial flows has been substantial especially in the case of capital outflows (Ali-Yrkkö & Ylä-Anttila, 1997b, pp. 37–8). Thus, aggregate direct investment capital flow statistics may give us biased information on the actual size of operations.

As we saw in an earlier section, the outward FDI stock has also been larger than the inward stock in some other small industrial countries, for example, in the Netherlands, Norway, Switzerland

[48] The amount of invested capital in manufacturing firms is usually larger than, for example, in sales offices.

and Sweden.[49] In fact, relative to, for instance, Sweden, the Finnish FDI imbalance is substantially smaller both in absolute terms and in relation to GDP. On the other hand, both actual outward and inward stocks are considerably smaller in Finland than in Sweden, irrespective of measurement method.

Geographical Distribution

Finnish companies have directed their outward FDI mainly to the current member countries of the European Union. As we can see from Table 4.4, almost 70% of the FDI stock is in the EU countries. The Netherlands and Sweden have been the most important EU host countries, followed by Germany, the UK and Denmark. The United States hosts the largest stock of direct investment outside the EU.

Table 4.4 Destinations of Finnish Outward FDI and Exports of Goods in 1996.

	FDI Stock		Exports	
	Billion $	% of the total	Billion $	% of the total
EU	12,3	69 %	21,4	53 %
Netherlands	3,1	18 %	1,6	4 %
Sweden	3,1	17 %	4,3	11 %
Germany	1,5	9 %	4,8	12 %
UK	1,4	8 %	4,1	10 %
Denmark	1,0	6 %	1,2	3 %
North America	3,0	17 %	3,4	8 %
USA	2,8	15 %	3,2	8 %
Central and South Am.	0,3	2 %	0,6	1 %
Asia	0,4	2 %	6,0	15 %
Other	1,8	10 %	9,1	23 %
Total	17,9	100 %	40,6	100 %

Source: ETLA Database.

In addition to outward FDI stock destinations, Table 4.4 shows the geographical distribution of Finnish exports. We can see that there are some differences in distributions. The FDI stock in 1996, for instance, was more concentrated in the EU and North America

[49] Grossman & Helpman (1991) argue that firms in R&D intensive small countries are most likely to invest abroad.

than exports. Furthermore, the proportion of Asia within the FDI stock was much lower than Asia's share of exports in 1996. Country-level analysis reveals that the relative export share was larger than the relative outward FDI stock share in the case of Germany and the UK. In contrast, the relative FDI stock shares of Denmark, the Netherlands and the USA were substantially larger than relative export shares.

Swedes have clearly been the most active direct investors in Finland. Table 4.5 shows that they command nearly one-third of the inward FDI stock.[50] Other EU countries, particularly the Netherlands, Denmark and the U.K. are also quite large investors. All in all, 70% of the foreign direct investment stock has come from the EU countries. By comparing the inward FDI stock distribution and the import of goods distribution by main partner countries, we can notice that only English and German investment in Finland has been less than each country's respective 1996 import share.

Table 4.5 FDI Stock in Finland and Import of Goods by Country in 1996.

	FDI Stock		Imports	
	Billion $	% of the total	Billion $	% of the total
EU	6,2	70 %	18,1	58 %
Sweden	2,7	30 %	3,7	12 %
Netherlands	1,4	16 %	1,1	4 %
Denmark	0,7	8 %	1,1	3 %
UK	0,6	6 %	2,7	9 %
Germany	0,3	4 %	4,6	15 %
North America	1,1	12 %	2,4	8 %
USA	1,1	12 %	2,3	7 %
Other	1,6	18 %	10,4	34 %
Switzerland	0,8	9 %	0,5	2 %
Norway	0,4	5 %	1,3	4 %
Total	8,9	100 %	30,9	100 %

Source: ETLA Database.

By comparing Table 4.4 and Table 4.5, we can notice that, quite unsurprisingly, the largest direct investor countries in Finland and

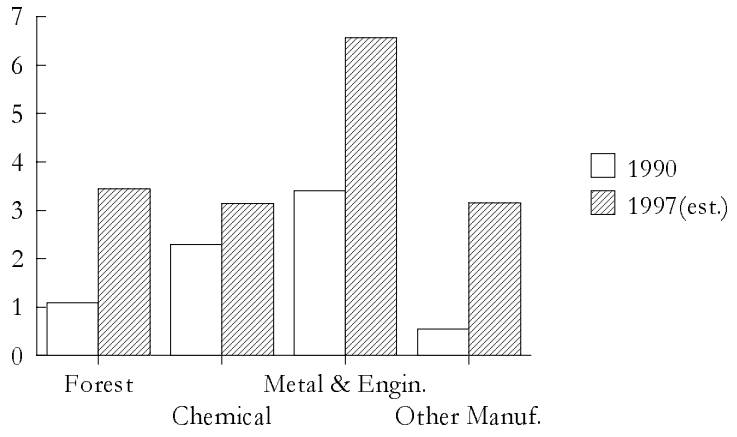
[50] Measured by the number of firms or employees, their share is distinctly over one-third (Pajarinen & Ylä-Anttila, 1998).

host countries of Finnish FDI are, broadly speaking, the same. In addition, the relative proportion of the EU is approximately the same both in outward and inward investments, although, measured by the actual size of stock, Finnish firms have invested in the EU almost two times more than other EU firms combined in Finland. Furthermore, by analyzing outward and inward stocks, we can note that Finland has invested more in most of the main partner countries than it has received from them. This can be seen particularly in the case of the USA, the Netherlands and Germany. Swedish and Danish firms, on the other hand, seem to have been almost as active investors in Finland as Finnish firms have been in Sweden and Denmark.

Sectoral Distribution

Globalization of Finnish industries started with traditionally strong export industries, the forest and metal industries. In 1981, the forest industry's investment stock abroad was FIM 300 million, while that of the metal industry was FIM 900 million (Ali-Yrkkö & Ylä-Anttila, 1997b). In the 1980s, the chemical industry came into the picture with a bang: by 1990 its foreign employment was more than half of the branch total. Figure 4.8 shows that forest and metal industry companies in the 1990s have increased their direct investment more than chemical industry companies. It is also noteworthy that other industries on the whole have increased their FDI stock abroad quite notably.

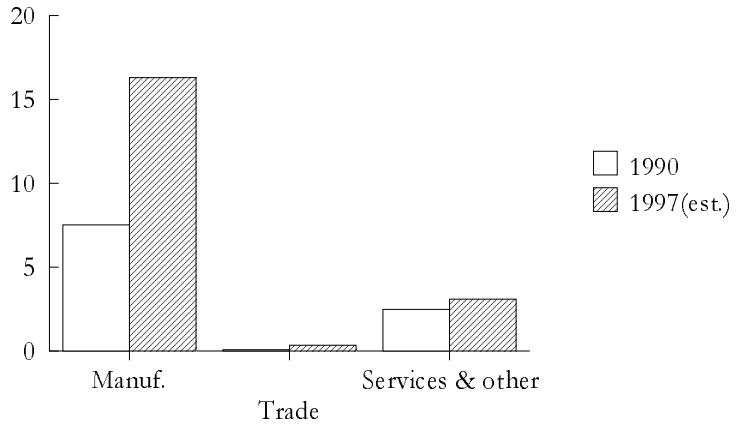
Figure 4.8 Finnish FDI Stock Abroad: Manufacturing (Bn. $).



Source: ETLA Database – The Bank of Finland.

Finnish firms have invested abroad mainly in manufacturing. As seen in Figure 4.9, direct investments in the trade sector are almost non-existent.[51] By comparing the situation in 1990 with that in 1997, we note that the capital stock has increased in all sectors; the increase has been the largest in manufacturing.

Figure 4.9 Finnish FDI Stock Abroad by Economic Activity (Bn. $).



Source: ETLA Database – The Bank of Finland.

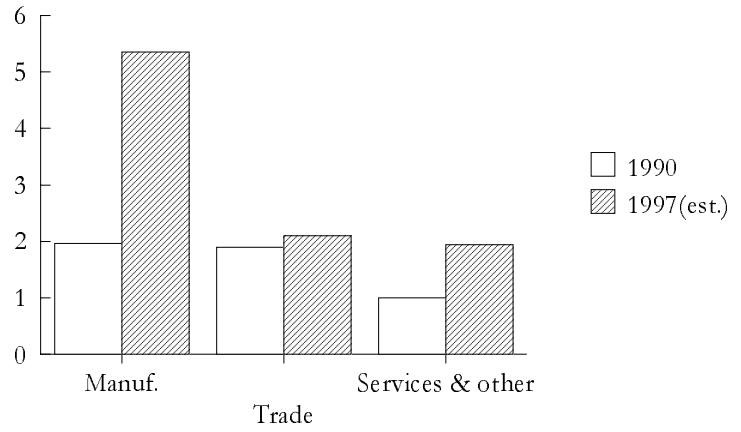
Decomposition of the FDI stock in Finland by economic activity reveals that foreign companies have invested in Finland more evenly across different economic sectors than Finnish firms have abroad. In fact, measured by the number of firms, trade and services sectors have been even more popular targets of foreign direct investment in Finland than Figure 4.10 illustrates (see Pajarinen, 1997). An explanation for this is that, for example, most foreign-owned firms in the trade sector are traditionally importers and wholesale traders. These companies have usually been established with small initial capital investments.

The growth of the inward FDI stock in the 1990s can mainly be attributed to foreigners' increased interest in Finnish manufacturing. Figure 4.10 shows that investment in manufacturing has almost tripled in seven years. Within manufacturing, the metal and engi-

[51] However, because the amount of invested capital in the case of sales offices is usually considerably smaller than in the case of manufacturing companies, Figure 4.9 underestimates the actual number of sales offices abroad.

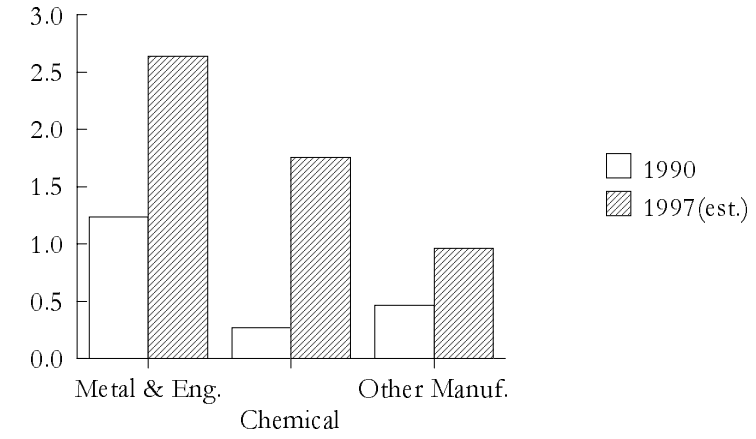
neering industries have attracted the largest share of FDI (Figure 4.11): in 1997 they comprised almost half of the total FDI stock in manufacturing and nearly 30% of the total FDI stock in Finland. The manufacture of electrical machinery was one of the biggest subgroups within the metal and engineering industries.

Figure 4.10 FDI Stock in Finland by Economic Activity (Bn. $).



Source: ETLA Database – The Bank of Finland.

Figure 4.11 FDI Stock in Finland: Manufacturing (Bn. $).



Source: ETLA Database – The Bank of Finland.

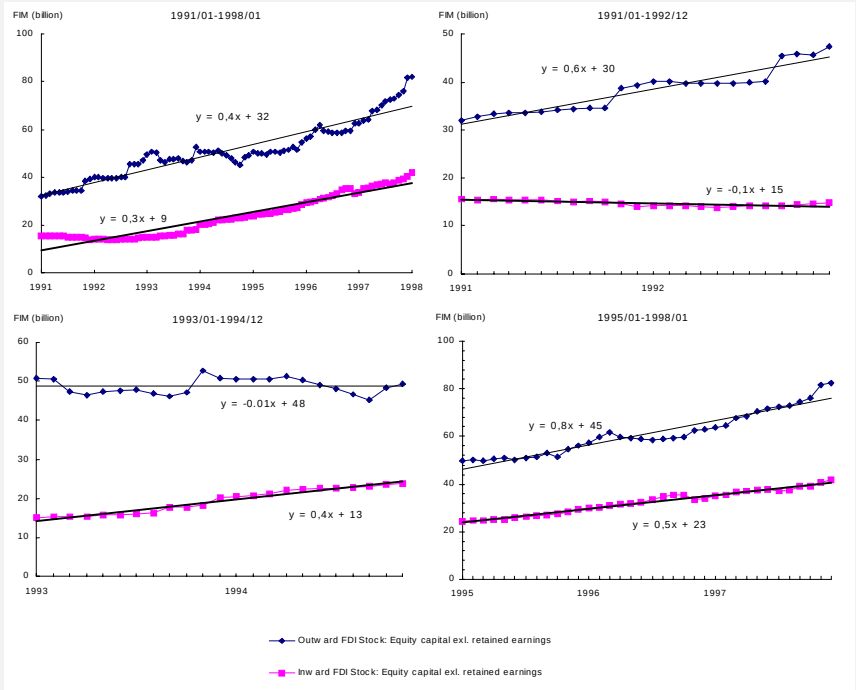
As Figure 4.11 illustrates, in recent years FDI in the chemical industry has increased quite substantially. In 1997, one-third of all the

FDI stock in manufacturing was invested in the chemical industry, whereas in the early 1990s the proportion was roughly ten percent. One explanation for the FDI boom in the chemical industry is that Finnish forest companies have sold part of their ownership in forest-related chemical companies.

Box 4.2 FDI Trends in Finland – Equity Capital.

Investment in equity capital is one of the main components of foreign direct investment. Figure 1 illustrates the development of inward and outward equity capital stocks in the 1990s. Besides the aggregate time period, we consider three sub-periods: 1991–2, 1993–4 and from 1995 onwards. These sub-periods are of particular interest since in 1993 the remaining restrictions on foreign ownership in Finland were removed, and in 1995 Finland joined the EU. As seen below, the outward equity capital stock has increased in the 1990s a bit faster than the inward stock. However, by analyzing sub-periods we observe that the development has not been uniform. From 1991 to 1993, the outward equity capital stock increased, while the inward equity capital stock remained almost unchanged. A change in the law in 1993 increased equity capital inflows, although it did not cause any rush. The gap between outward and inward equity capital stocks decreased in the period 1993–5.

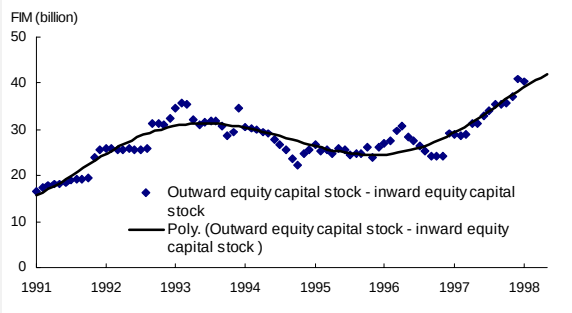
Figure 1: FDI Trends in Finland – Equity Capital.



Source: ETLA Database – The Bank of Finland.

Since 1995, both inward and outward equity capital stocks have increased considerably. The gap between outward and inward equity capital stocks decreased in 1995, as capital outflows remained modest while capital inflows increased. Nevertheless, recent trends seem to indicate that the imbalance is again increasing, in favor of outward investment. The figure below gives some support for this observation. It shows that, if the recent trend continues in the future, equity capital outflows will increase, at least for some time, by more than equity capital inflows.

Figure 2: Outward Equity Capital Stock – Inward Equity Capital Stock: Finland (Monthly Observations, Jan. 1991 – Jan. 1998).



Source: ETLA Database – The Bank of Finland.

By comparing inward and outward FDI stocks in the main industries, we can observe, as in the country analysis case, that there is also a distinct imbalance between outward and inward stocks in this case. For example, in metal and engineering, the outward stock in 1997 was more than two times greater than the inward stock. Even in the chemical industry, where transactions have been done quite extensively in both directions, the outward stock in 1997 was substantially larger than the inward stock. Furthermore, foreign-owned forest companies are quite rare in Finland (Pajarinen & Ylä-Anttila, 1998).

In spite of rapid growth, it seems that the globalization of the Finnish economy is still lagging behind the most globalized economies. Furthermore, Finnish manufacturing firms' interest in acquiring foreign firms has been, thus far, notably greater than the corresponding interest of foreign firms in Finland. Nevertheless, in recent years, foreign firms have shown increasing interest in establishing subsidiaries in Finland. In the following section, we shall analyze how foreign-owned firms have actually performed in Finland and, on the other hand, how Finnish companies have performed abroad.

5 THE FINNISH PERSPECTIVE ON FIRM-LEVEL GLOBALIZATION

This section studies globalization of Finnish firms. The focus is to analyze what effects outward (Section 5.1) and inward (Section 5.2) foreign direct investment flows have had on growth prospects of firms.

5.1 Globalization of Finnish Companies – Recent Trends

The internationalization process of Finnish business has been dominated by large manufacturing firms, which are today highly internationalized compared to many other industrial countries. The FDIs of the large industrial firms have been growing particularly in Europe, North America and East Asia. Especially in the engineering industry, the business operations of all large firms have become markedly global. Forest industry firms have traditionally been more Europe-oriented in their internationalization strategies, but in the 1990s the globalization of large paper companies has also proceeded rapidly outside the old continent.

Following the surge in global foreign direct investment flows, foreign acquisitions of Finnish firms accelerated in the late 1980s. After a short break in the early 1990s, this trend of rapid globalization has continued in 1994-1998 (Ali-Yrkkö & Ylä-Anttila, 1997b). Finnish FDI seems to have followed more or less the growth pattern of other industrial economies, but the growth rate has been even faster than in industrial countries on average.

As Table 5.2 indicates, in the beginning of the 1980s, only some 15% of the large firms' employees were in foreign affiliates. Only a couple of firms in the group of 30 largest were truly multinational. Since then, the situation has changed dramatically. The average share of foreign employment is as high as 50%. Internationalization progressed through major acquisitions in the late 1980s and, again, since 1993, particularly in metal and engineering industry firms.

Table 5.1 Foreign Sales of Large Finnish Manufacturing Firms.

Company	1983		1997	
	Foreign sales FIM (mill.)	% of total sales	Foreign sales FIM (mill.)	% of total sales
NOKIA	3 501	50 %	50 055	95 %
UPM-KYMMENE*	7 688	73 %	42 341	84 %
KONE	3 287	83 %	11 923	97 %
ENSO	4 539	79 %	24 991	85 %
METSÄLIITTO	1 853	56 %	20 938	80 %
AHLSTRÖM	2 589	63 %	12 903	89 %
OUTOKUMPU	3 167	84 %	17 473	92 %
VALMET	3 050	62 %	9 799	80 %
METRA**	4 977	69 %	14 528	95 %
RAUTARUUKKI	1 351	45 %	9 965	73 %
Total	36 016	67 %	214 992	88 %

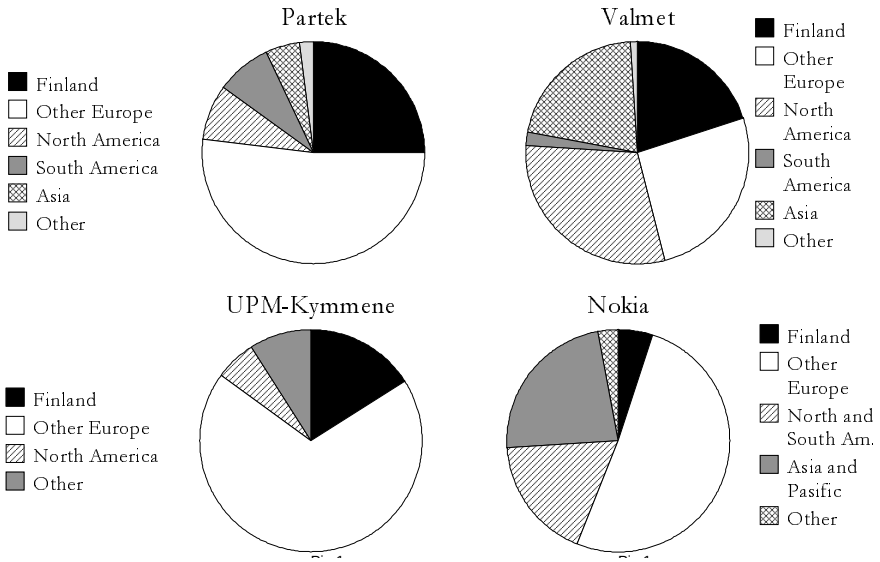
Source: Ali-Yrkkö & Ylä-Anttila (1997b) – modified.
Note:
* = 1983 values are calculated by summing up Rauma-Repola and Kymmene.
** = 1983 values are calculated by summing up Lohja and Wärtsilä.

Table 5.2 Employment of Large Finnish Manufacturing Firms.

Company	1983		1997	
	Number of Employees	of which abroad	Number of Employees	of which abroad
NOKIA	23 651	18 %	35 490	46 %
UPM-KYMMENE*	34 599	12 %	33 814	31 %
KONE	13 137	66 %	22 499	92 %
ENSO	15 315	10 %	19 870	20 %
METSÄLIITTO	7 891	8 %	18 717	40 %
AHLSTRÖM	12 472	14 %	13 758	71 %
OUTOKUMPU	10 089	1 %	13 734	47 %
VALMET	15 371	13 %	13 480	36 %
METRA**	22 346	10 %	13 384	72 %
RAUTARUUKKI	7 712	2 %	12 705	37 %
Total	162 583	15 %	197 451	48 %

Source: Ali-Yrkkö & Ylä-Anttila (1997b) – modified.
Note:
* = 1983 values are calculated by summing up Rauma-Repola and Kymmene.
** = 1983 values are calculated by summing up Lohja and Wärtsilä.

Figure 5.1 Regional Distribution of Sales in Selected Large Manufacturing Companies.



Source: ETLA – Annual reports.

While outward FDI – thanks to large industrial firms – has been growing fast, inward FDI has been increasing at a slower pace, as indicated in the earlier section. Hence, there is still a striking imbalance between the stocks of outward and inward FDI in Finland. The stock of outward investment is about two times larger than the stock of inward investment. This, together with the high rate of internationalization of the leading manufacturing firms, makes the economy rather sensitive to the strategies of MNEs.

At the same time, while the FDIs of large Finnish corporations have been growing fast, the *internationalization of ownership* of large companies has been increasing rapidly (see Section 4): the share of foreign ownership in the Finnish companies listed on the Helsinki Stock Exchange is as high as 50%. In contrast to the extensive inflows to the Finnish capital markets, the portfolio investments of Finnish investors abroad have been growing fairly modestly. So, there is also an imbalance in portfolio investment, but of an opposite kind compared to the case of FDI.

Outward FDI of Large Industrial Companies – Exporting of Jobs?

In the first half of the 1990s, employment in Finnish manufacturing dropped dramatically. The labor input in manufacturing fell by some 15% from 1989 to 1993. The domestic employment of large multinational enterprises fell at approximately the same rate, whereas their foreign acquisitions and, consequently, their foreign employment increased. This has raised the question of possible exports of jobs via increased FDI. *Do FDI and increasing employment in foreign affiliates complement or substitute employment in domestic units of MNEs?*

Economic theory is far from providing any clear-cut *a priori* answers to what kind of employment effects outward FDI might have. Theoretical considerations, on which most of the empirical studies rely, are based on the so-called OLI-theory. The empirical models include variables representing firm-specific as well as country-specific factors behind the locational decisions of firms. It is the combination of location bound (country-specific) comparative advantage and firm-specific competitive advantage that determines the location of production of multinational firms.

On the basis of these types of empirical models, the employment effects are assessed through the following reasoning. Foreign production allows firms to grow more than would be otherwise possible, thus allowing the fixed costs of R&D and of other competitiveness enhancing activities to be distributed over larger sales volumes. In addition, higher sales and larger market shares help to finance and possibly increase the magnitude of such activities. To the extent that foreign affiliates help generate new knowledge or innovations and strengthen firm-specific advantages, and to the extent that the multinational organization of the firm helps diffuse this knowledge, FDI should strengthen the competitiveness of the firm as a whole. This should have positive growth, employment and structural effects in the home economy of the MNEs.

This conventional view needs a bit more elaboration. First, we have to separate between long- and short-term. The above considerations relate to long-term growth and industrial structure, and could be augmented by aspects from more recent literature. The new locational literature looks at why firms tend to concentrate geographically in certain well-defined areas irrespective of higher

costs. The basic presumption is that there are increasing returns to scale. The increasing scale economies from firm-specific inputs, together with low trade costs, technological spillovers and pecuniary links between firms (externalities arising from market interactions) lead to agglomeration tendencies especially in the knowledge-intensive industries (Krugman, 1991). This type of reasoning can be applied to the analysis of FDI flows as well as geographical concentrations within a national economy.

If the knowledge-intensive firms have a higher propensity to expand abroad than basic industry firms, it can be hypothesized – referring to new growth theories – that extensive outflows of FDI in knowledge-intensive industries can lead – as opposite to what was said above – to negative long-term growth (and employment) effects in the home country (Braunerhjelm, Heum, & Ylä-Anttila, 1996).

In the short-term, production can be – to a certain degree – moved between existing subsidiaries within the MNE. This decision is based on trade and direct production costs. The home economy may become highly sensitive to changes in relative costs between the home country and host countries when key industries and firms are highly internationalized and the leading firms have horizontally internationalized over several regions and countries.

So far, most of the studies looking at the home country effects of outward FDI have indicated that the effects of FDI on domestic employment and industrial growth have been mainly positive. The competitiveness of the domestic units of firms has strengthened as a consequence of internationalization.

Most of the previous studies looking at the growth and employment (welfare) effects of outward FDI have indicated a positive relationship. The internationalization process of industrial firms has promoted the firms' capabilities of reaping the benefits of specialization and economies of scale and has, consequently, contributed to the growth of the domestic economy. Foreign production seems to have complemented rather than substituted for domestic production, generating positive effects on exports, domestic investment and productivity (see, e.g., Braunerhjelm et al., 1996; Kinnunen, 1993; Swedenborg, 1979; Swedenborg, Johansson-Grahn, & Kinnwall, 1988).

These results have been questioned by some recent studies (see, e.g., Ali-Yrkkö & Ylä-Anttila, 1997b; Andersson, 1994; Braunerhjelm & Oxelheim, 1996; Svensson, 1993; Svensson, 1996). The focus of these studies has been on exports: how the increased foreign production affects the production (and exports) of home country units. Svensson (1993; 1996) finds a clear substitution effect of Swedish firms' foreign production on home country exports. This is caused by third country exports: exports from the home country units are substituted by exports from foreign affiliates. The results show that increased foreign production both substitutes exports of finished goods and attracts intermediate goods from the parent company. However, the net effect is negative.

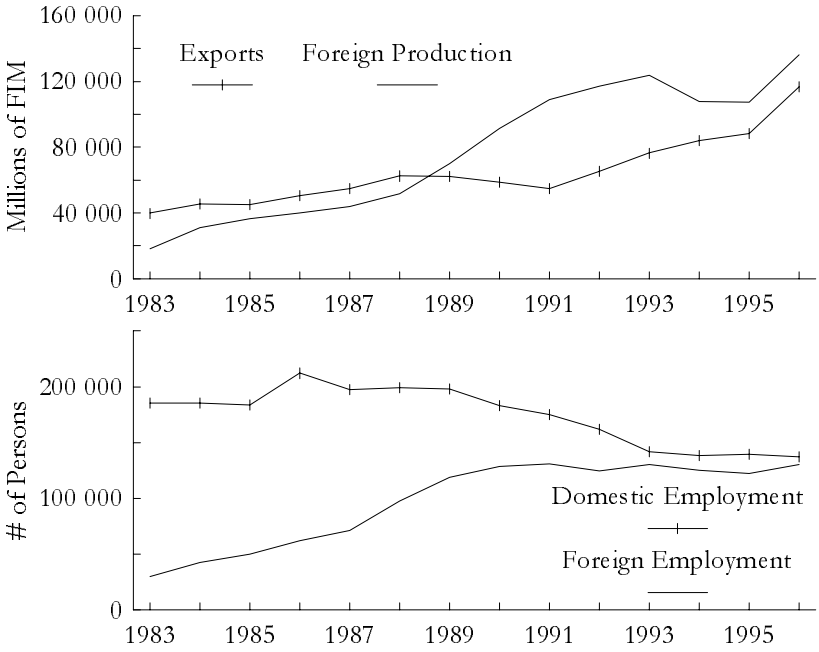
Ali-Yrkkö and Ylä-Anttila (1997b) have studied the employment effects of the FDIs of Finnish industrial firms using data on the 30 largest Finnish manufacturing companies from the early 1980s to 1996. The results mainly confirm those of the previous studies. Technology-intensity (investment in R&D in relation to sales) seems to have increased international production. Scale factor (size of the firm) is positively related to the extent of foreign production. Relative production costs (a country-specific factor) also matter. The question of whether foreign production and employment complement or substitute domestic production (exports from the home country) proved to be a bit less clear-cut.

Figure 5.2 shows the growth of foreign production (sales) and exports (from the home country) as well as foreign and domestic employment in the group of the top 30 industrial companies. Exports and foreign production seem to have grown in line up to the late 1980s, since then the pattern changed. The change in the late 1980s and early 1990s coincides with the overheating of the economy (and the subsequent cost overshooting), and the deep recession of the early 1990s. The changes in cost competitiveness of the economy seem to have played a significant role in firm behavior, although most of the large firms are technology-intensive and assumed to be fairly insensitive to short-term cost fluctuations.

The rapid internationalization of the large firms becomes evident from the employment figure: the number of employees in the foreign affiliates has grown from the early 1980s to the mid-1990s by a factor of 4.5, whereas the domestic employment of the large firms has decreased by some 15% during the same period. This is a bit less than in the whole domestic (mining and) manufacturing

sector, but – here too – the development over time has changed. Up to the late 1980s, the domestic employment of the large MNEs grew or decreased less than in domestic manufacturing – thus contributing positively to domestic employment – but in the 1990s the pattern changed: domestic employment of large industrial MNEs decreased faster than domestic industrial employment as a whole (Ali-Yrkkö & Ylä-Anttila, 1997b). The results show that in the 1980s the FDIs complemented rather than replaced domestic investment. The contribution of the large industrial firms to domestic employment seems to have been positive up to the late 1980s.

Figure 5.2 Exports, Foreign Production, and Employment in the Group of Large Industrial Firms.



Source: Ali-Yrkkö & Ylä-Anttila (1997a).

In the 1990s, however, the complementary relationship between outward FDI and domestic employment has become blurred. It is concluded that foreign production has become, to a certain degree, a substitute for exports, as internationalization has proceeded to such an extent that the relative size of the domestic units of MNEs has become insignificant and the foreign subsidiaries are increasingly competing with home country units for third country exports.

It is emphasized that, although the relationship between FDI and home country activities has changed, one cannot draw the conclusion that the Finnish economy would have been better off had the large firms not invested abroad.

Technology, Globalization and Competitiveness – Future Perspectives

It seems likely that the globalization of Finnish firms will continue, at least at the same rate as in the last few years. This is evident already from the fact that, in spite of the rapid growth of FDI, the stock of outward foreign direct investment in relation to GNP is still smaller than in some other open economies of similar size and structure, for example, the Netherlands, Sweden and Switzerland.

The pattern of globalization is, however, changing. The small and medium size enterprises, and especially knowledge-based fast growing SMEs, are rapidly internationalizing their activities. Also, firms in the services sector are becoming increasingly global. A particular group is specialized subcontracting firms, for example in electronics, which are growing to be parts of global production networks. Hence, the dominance of large firms in the globalization process is likely to decrease. At the same time, non-FDI globalization – R&D alliances, value-added services, partnerships, contract manufacturing – is bound to increase. The third phase of EMU is likely to increase the propensity of smaller firms to both increase their exports and expand production abroad.

Advances in information and communication technologies tend to further favor international decentralization of industrial activities. On the other hand, there seems to be a tendency of knowledge-based industries to concentrate geographically in certain areas to benefit from technological spillovers and positive externalities arising from market interactions with similar types of firms. This poses a challenge to industrial and technology policies – how to attract knowledge-intensive firms and create favorable milieus for innovative firms.

In this section, we studied outward cross border expansion of Finnish firms. In the following section, we shall study the other side of the internationalization process through FDI, that is, foreign-owned firms in Finland.

5.2 Foreign Owned Firms in Finland

From an historical perspective, foreign firms have made few direct investments in Finland. This is due to, e.g., the small Finnish market size and unfamiliar language and culture. Nor have Finns tried to actively attract foreign direct investment inflows.

However, foreign direct investment inflows began to increase in the 1980s, and the increase has continued during the 1990s. There are many explanations for the increase. *First*, as we have seen in the earlier sections, it is partly due to global development: global FDI flows have increased substantially since the early 1980s. A small part of this growth has been directed at Finland. *Second*, the technological and knowledge levels of Finnish manufacturing firms have increased quite rapidly in the past few decades. As a consequence, acquiring an existing firm has become a popular method of establishing production in Finland. In fact, mergers and acquisitions have been a much more popular method of foreign direct investment in the 1980s and 1990s than greenfield investment. *Third*, the atmosphere in Finland has changed. Nowadays, foreign direct investment inflows are encouraged: the *Invest in Finland Bureau* was founded in 1992, and remaining restrictions on FDI inflows were abolished in 1993. Furthermore, European Union membership in 1995 most likely had a positive signal.

Although foreign direct investment inflows have increased in the 1980s and 1990s, the number of foreign affiliates in Finland is still relatively small. According to Statistics Finland, there were about 1,500 foreign-owned companies in Finland in 1995.[52] This was roughly only one-half percent of all firms in Finland. However, foreign-owned companies' share of value added and employment was almost ten percent. This implies that foreign-owned firms are, on average, larger than Finnish-owned firms. Table 5.3 shows that the foreign affiliates' shares of the number of companies and personnel increase quite notably as the size of firm increases. In addition, one-third of the 500 largest firms in Finland are controlled by foreign parent companies (Pajarinen & Ylä-Anttila, 1998).

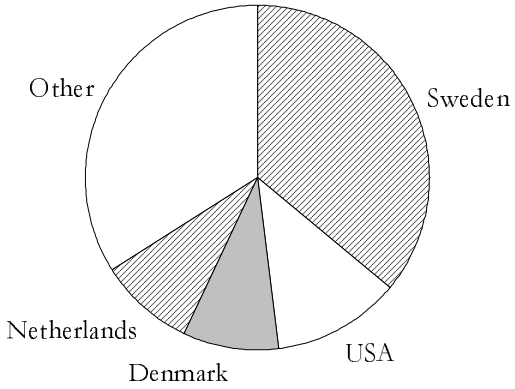
[52] According to our estimates, there were some 1,700 foreign-owned firms in Finland in the spring of 1998.

Table 5.3 Foreign Affiliates in Finland: Shares of Firms and Employment in the mid-1990s.

Company size (Number of employees)	Foreign owned firms' share of	
	Number of firms	Personnel
0-9	0.3 %	1 %
10-19	4 %	4 %
20-49	8 %	8 %
50-99	11 %	11 %
100-	16 %	11 %
All	0.5 %	8 %

Source: ETLA – Statistics Finland.

Figure 5.3 Foreign Affiliates in Finland by Owner Country in 1995.



Source: ETLA – Statistics Finland.

As we can see from Figure 5.3, Swedish owned firms are distinctly the largest group of foreign affiliates in Finland. Their proportion is over one-third of the total number of foreign affiliates (and personnel employed by foreign affiliates). Swedish firms are followed by firms from the USA, Denmark and the Netherlands. Nordic firms are, on the whole, quite well represented in the list of foreign affiliate owners: the number of Norwegian-owned firms has also increased during the 1990s.

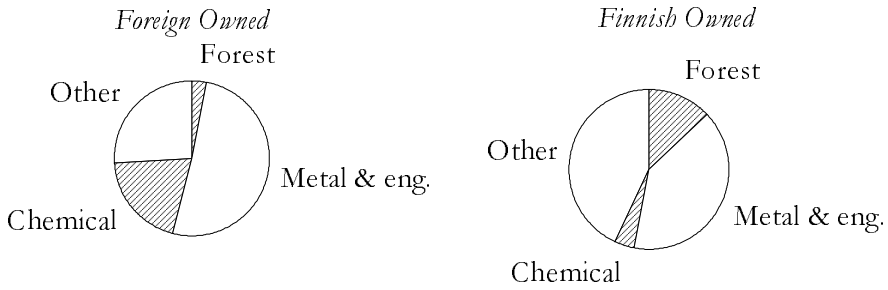
Over 80% of foreign affiliates in Finland are located in trade and services sectors. Nevertheless, the number of foreign manufacturing firms is increasing. As the technological and knowledge levels

of Finnish manufacturing firms have improved during the last decades, acquiring an existing firm has become an increasingly popular method of establishing production in Finland. Moreover, although only a minority of foreign affiliates operates in manufacturing, they employ over half of the personnel working in foreign affiliates.

In manufacturing, about half of the foreign-owned firms are located in the metal and engineering industries. In the mid-1990s, their share of total foreign affiliates' net sales and personnel employed was even larger, about 60%. A popular sub-industry in metal and engineering has been the electrical and electronics industry. On the other hand, in the manufacture of basic metals, for example, foreign owned firms are practically non-existent.

We can see from Figure 5.4 that, in terms of the industry distribution of foreign affiliates, the chemical industry is second to metal and engineering only. In addition, the figure reveals that the metal and engineering and chemical industries are much more dominant in the case of foreign affiliates than in the case of Finnish owned firms.

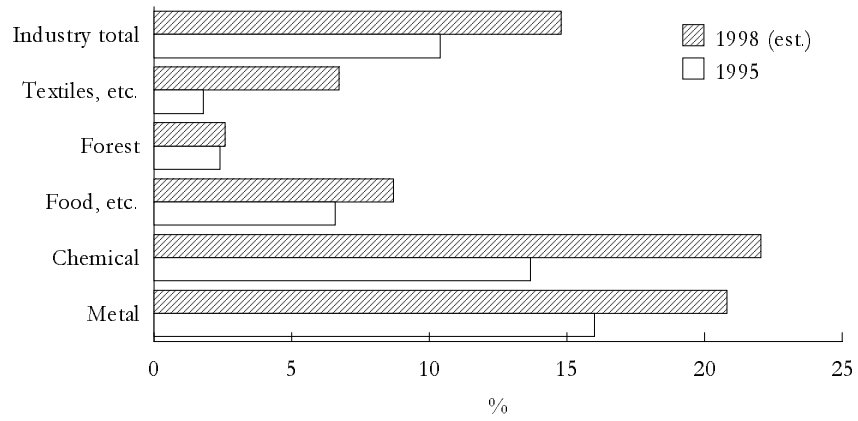
Figure 5.4 Industry Distribution of Foreign Owned and Finnish Owned Firms.



Source: ETLA – Statistics Finland.

Figure 5.5 illustrates foreign owned firms' share of employment in some manufacturing industries in 1995 and in 1998. In 1995, foreign affiliates' proportion of employment in manufacturing industries was about ten percent. Since 1995, the proportion has increased, primarily due to mergers and acquisitions. We have roughly estimated that the foreign affiliates' proportion of employment was approximately 15 % in the first half of 1998.

Figure 5.5 Foreign Owned Firms' Share of Employment in Some Manufacturing industries in 1995 and 1998.

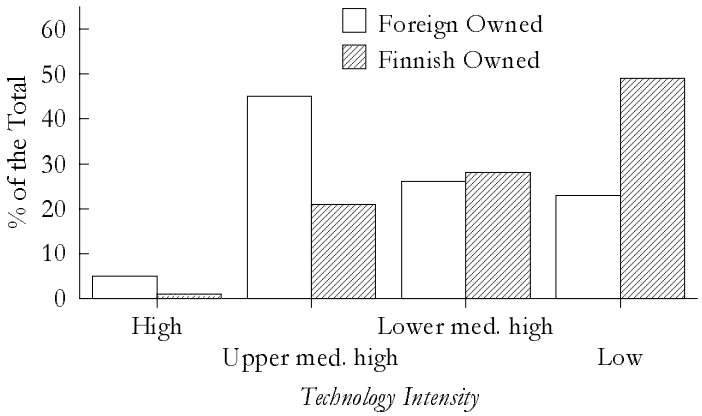


Source: 1995 shares are authors' estimates based on data provided by Statistics Finland, 1998 shares are authors' estimates based on foreign mergers and acquisitions since 1995.

Upon analyzing foreign affiliates in more detail, we note that they have only a minor role in the forest sector.[53] In the manufacture of food and textiles, their share is also below that of total industry average. Foreign-owned companies' influence is largest in the metal and engineering and chemical industries. Within these two industries, foreign influence is substantial in many higher technology sectors. In the electrical industry, for instance, foreign-owned firms' share of employment is almost one-fourth. On the other hand, foreign firms have not only acquired high technology firms. Their share of output and employment is also significant in some lower technology sectors. Shipbuilding, for instance, is nowadays an almost totally foreign-owned sector. However, foreign owned firms are often located in higher technology sectors. This can be inferred from Figure 5.6, which sorts manufacturing companies by their level of technology. Differences in industry distributions are reflected in average wage levels, too. In 1995, personnel in foreign affiliates received, on average, some ten percent higher compensation than personnel in Finnish-owned, private sector companies.

[53] We have not classified *Enso* as a foreign owned company (see Box 5.1)

Figure 5.6 Manufacturing Companies by their Technology Level in 1995.



Source: ETLA – Statistics Finland.

High and upper medium high technology firms employed nearly 130,000 employees in Finland in 1995 and their net sales were about FIM 117 billion. The employment proportion of foreign owned companies was almost 20%; the net sales proportion was over 20%. Since 1995, the proportions have increased somewhat as foreign firms have continued to acquire higher technology companies in Finland.

Keeping in mind the differences in the technology intensity distribution, it is quite unsurprising that foreign-owned manufacturing firms invest, on average, more in research and development than Finnish-owned firms. According to Luukkanen (1994), foreign-owned firms spent some 3.5% of net sales on R&D in 1991, while the proportion in Finnish-owned companies was about 1.6%. According to our estimates, some differences in R&D-intensity have remained during the 1990s. Nonetheless, both Finnish-owned and foreign-owned firms have increased their R&D spending: In 1996, for instance, in our sample of the 500 largest companies, foreign-owned manufacturing companies spent, on average, about four percent of net sales on R&D and Finnish-owned companies spent about two percent.

Foreign Owned Companies' Performance in the 1990s

Foreign companies have performed quite well compared to their Finnish counterparts.[54] Figure 5.7 illustrates foreign affiliates' growth compared to indigenous firms. Foreign affiliates have grown faster: from 1990 to 1996, the number of employees in foreign-owned firms, for instance, *increased* some 15%, whereas in Finnish-owned firms the number of employees *decreased* by about 10%.

Figure 5.7 Employment and Output Trends of Manufacturing Firms in 1990-1996.[55]

Source: Pajarinen & Ylä-Anttila (1998).
Note: Index: 1990 = 100.

Furthermore, we can see that employment trends diverged in 1992: foreign manufacturing affiliates began to employ more personnel already in 1993, whereas the downward employment trend in indigenous firms was not broken until 1995. There are many possible explanations for the different development. *First*, foreign affiliates

[54] Our data consists basically of the 500 largest companies in Finland. This data has been supplemented by some smaller foreign-owned companies in order to obtain a larger sample size of foreign-owned firms.

[55] Sample of firms which were, during the whole period, Finnish-owned or foreign-owned (49 foreign owned and 101 Finnish owned firms). Output in Figure 5.7 is defined as nominal value added deflated by the producer price index. Due to data constraints, employment and value added are the sums of foreign and domestic values. This gives us somewhat biased trends, especially in the case of large Finnish-owned firms. In 1996, for instance, nearly half of the personnel of the 30 largest Finnish-owned manufacturing firms worked abroad. On the other hand, foreign-owned firms employ personnel primarily in Finland only.

have been, on average, more export intensive: during the deep recession in the early 1990s, the Finnish currency was devalued several times, which helped export intensive firms recover more quickly than domestic market intensive firms. This has partly contributed to the better output and employment performance of foreign affiliates. *Second*, there has been a tendency in the 1990s, particularly among large Finnish companies, to concentrate in core business areas, to sell businesses outside core functions and for outsourcing.[56] This tendency is reflected in Figure 5.7, especially in the case of Finnish owned firms: their adverse employment trend is partly explained by divestment of non-core business areas.

Table 5.4 illustrates the average financial performance of foreign-owned manufacturing firms and indigenous firms in the 1990-1996 period. According to these figures, indigenous companies seem to have had, on average, slightly better profit margins. One explanation for differences in profit margins could be that Finnish-owned firms have operated, on average, in less competitive industries or market segments than foreign-owned firms. There have been, in fact, only a few major domestic firms in some sectors, such as in food, energy and wood-processing industries. On the other hand, differences in profit margins have been, on average, relatively small.

In addition, we can notice from Table 5.4 that Finnish-owned firms have invested in fixed capital relatively more than foreign affiliates. On the other hand, foreign affiliates have had, on average, a better capital turnover ratio[57]. This has contributed to a better return on investment ratio, although, as mentioned earlier, foreign affiliates have had slightly lower profit margins on average.

Moreover, we can see from Table 5.4 that foreign affiliates have had, on average, less debt relative to net sales. Furthermore, they have had a slightly better labor productivity and they have been more export intensive. In addition, it seems that foreign affiliates have paid, on average, higher compensations to their employees than indigenous firms. Employee cost per employee data is, however, somewhat biased due to the fact that we only had aggregate information on employee costs and number of employees of firms.

---

[56] The group of Finnish-owned companies consisted of the 100 largest manufacturing firms.

[57] Measured by the ratio: value added per invested capital.

We know from other sources that many Finnish-owned firms in the sample have production and other activities abroad and, at least in some cases, in countries where labor costs are lower than in Finland. On the other hand, foreign affiliates in Finland employ personnel primarily in Finland only. This could explain, at least partly, the difference in average labor compensation.

Table 5.4 Average Performance of Finnish-Owned and Foreign-Owned Manufacturing Companies in 1990–6.[58]

	Owner	
	Foreign	Finnish
Profitability		
Return on investment, %	16	10
Operating income, %	6	7
Productivity		
Value added per invested capital	0.8	0.5
Value added per employee; FIM 1,000	328	313
Capital Structure		
Debts per turnover, %	47	68
Equity Ratio,%	40	40
Other		
Fixed asset investment per turnover, %	8	11
Employee costs per employee; FIM 1,000	180	165
Exports per turnover, %	40	28
Sample size (number of firms)	49	101

Source: Pajarinen & Ylä-Anttila (1998).

Some differences in financial performance also remained in the more detailed industry classification. In the *electrical and electronics industry*, for example, Finnish-owned firms had, on average, a better operating margin and they invested relatively more in fixed assets over the 1990–6 period. On the other hand, they had a worse capital turnover ratio, they were more indebted and paid slightly worse wages than foreign affiliates. However, in contrast to the figures in Table 5.4, indigenous firms had a slightly better return on investment ratio and their labor productivity ratio was also better than in foreign-owned companies. In addition, there were no differences in average export intensities.

[58] The sample consists of firms in which no ownership change took place in 1990–6.

Box 5.1 The Largest Foreign-Owned Companies in Finland.

The table below shows the largest *majority* foreign-owned firms in Finland in terms of employment. As we can see, manufacturing firms dominate the list. The electronics industry and the chemical industry are well represented. The largest foreign-owned company in the 1990s has been *ABB Finland*, former *Strömberg Oy*. *ABB Finland* is one of the best performers in the *ABB Group*.

There are also quite a few services sector firms in the top 20. One of the largest land transport and forwarding company in Finland (*BTL*; includes *Scansped* and *Huolintakeskus*), for instance, is a foreign-controlled company. The largest security services company in Finland, *Securitas*, is also foreign owned. Most of the largest firms were formerly Finnish owned, but were acquired by foreigners. *Ericsson* and *Siemens* are exceptions to this rule.

In June 1998, the second largest Finnish forest industry company, *Enso*, announced that it will merge with the Swedish *Stora*. This was the first major cross-border merger in the Finnish forest industry. *StoraEnso* is not classified as a foreign-owned company, although the owners of *Stora* have a total of 55 percent of the voting rights in the merged company. However, Swedish ownership is quite diversified. The largest Swedish owner in *StoraEnso*, *Investor*, has approximately 10% of the voting rights. The largest owner in *StoraEnso* is the State of Finland, which has some 30% of the voting rights. In addition, the head office of the company is located in Finland, and the managing director is a Finn. Thus, we argue that Finnish ownership has a stronger position in the firm. The situation may change if the Finnish government decides to divest its holding in the company.

Table: Largest Foreign-Owned Companies in Finland (by employment).

Company	Industry	Employment '97
ABB FINLAND	Electronics, electr. equip.	9 228
ISS FINLAND	Services	4 765
KVAERNER MASA YARDS	Metal	4 612
BTL	Services	2 518
SECURITAS	Services	1 854
ICL DATA FINLAND	Computers & software	1 742
ARCTIA	Services	1 677
NCC PUOLIMATKA	Construction	1 633
STARCKJOHANN	Diversified/trading	1 557
TAMROCK	Metal	1 517
PILKINGTON LAMINO	Manuf. of glass prod.	1 395
POLARKESTI	Services	1 307
FINNYARDS	Metal	1 200
BOREALIS POLYMERS	Chemicals	1 159
NK CABLES	Metal	1 145
SKANSKA	Construction	1 134
ERICSSON LM	Electronics, electr. equip.	1 072
LEIRAS	Pharmaceuticals	1 000
FOSTER WHEELER	Metal	875
SIEMENS	Electronics, electr. equip.	812

Foreign affiliates in Finland have performed quite well in the 1990s. We also studied the performance of firms that were acquired by foreign companies during the 1990s.[59] The results of these analyses indicate that the performance of acquired firms has been mainly positive, e.g., with respect to the increase of foreign sales and improvement in capital productivity and profitability. On the other hand, the analyses indicate that there have also been some adjustment costs related to ownership change. Operating profit, for example, decreased in almost half of the companies in the first few years after acquisition.

5.3 Summary: Increased FDI Activity Has Had a Positive Impact on the Development of Finnish Industry

In recent years, the internationalization process of Finnish industry has been quite intensive. Both inward and outward foreign direct investment have increased rapidly. The FDI activity seems to have more or less followed the growth pattern of other industrial economies, but the growth rate, especially in the case of outward direct investment, has been even faster than in industrial countries on average.

Cross-border expansion of *Finnish firms* has been dominated by large manufacturing companies, which are today highly internationalized compared to those in most of the other industrial countries. The dominance of large firms is, however, likely to decrease. Small and medium size enterprises, and especially knowledge-based fast growing SMEs, are rapidly internationalizing their activities. Also, firms in the services sector are becoming increasingly global. Thus, globalization of Finnish firms will intensify.

It seems that cross-border expansion of large Finnish manufacturing firms has reduced, to some extent, their domestic employment. However, it must be emphasized that one should not draw the conclusion that the Finnish economy would have been better off had the large firms not invested abroad. Outward foreign direct investment has, in many cases, strengthened the competitiveness of firms as a whole. This has, in turn, positive growth, employment and structural effects on the Finnish economy.

---

[59] See Pajarinen & Ylä-Anttila (1998).

As we have already noticed, *foreign direct investment inflows* have had more positive effects than negative effects on Finnish industry.[60] Foreign-owned firms in Finland have grown, on average, faster and they have been more profitable than indigenous firms. Foreign firms have provided new technology and, for instance, marketing and organizational skills, too. So, they have reinforced the competitiveness of Finnish industry. It is very likely that the number of foreign-owned firms in Finland will increase, following the natural progress of globalization of firms and industries.

[60] One negative effect has been that, in some FDI, particularly in low technology industries, production facilities have been closed down after acquisition and production has been moved abroad. However, the negative effects have been minor compared to the many positive effects, such as improved growth prospects of higher technology companies.

6 GLOBALIZATION AND PUBLIC POLICY

6.1 Changing Patterns of Industrial Policy Guidelines

Economic integration has been thought to strengthen those industries, which enjoy comparative advantage based on (relatively abundant) factors of production, such as labor, raw materials, and energy. However, the significance of comparative advantage in the traditional sense, as a determinant of the location of production, has changed as a consequence of the increased mobility of production factors. Furthermore, along with increased specialization and product differentiation, it is the firm-specific capabilities and created – rather than inherited – factors of production which determine the competitiveness of a country or a region.

It can be argued that the principle of comparative advantage is losing importance at the expense of absolute advantage and firm-specific competitive advantage. The comparative advantage of a country and the competitive advantage of a firm can no longer be equated. Hence, the policy thinking has changed.

The main industrial policy stance in the 1970s could, roughly speaking, be described as 'backing the losers'. Governments in most European countries subsidized ailing industries in order to bridge them over recessions and to prevent unemployment from rising rapidly. This policy proved to be a failure: structural changes were hindered and competitiveness deteriorated. In the 1980s, the policy changed to give special attention to new, promising technologies and firms utilizing these. In the 1990s, in turn, we have seen a shift from this type of 'picking the winners' to 'let the market pick the winners' policies. This is in accordance with internationalization of firms and the changing mechanisms of creating competitive advantages. Industrial policy aims at improving framework conditions or the operational environment of firms. Direct investment subsidies are seen as harmful in the long-run, since they distort competition. Governments do not have superior knowledge over private firms in foreseeing the future success of business.

However, industrial policies have an important role to play. The main goals of the policies are, on the one hand, to ensure the efficient functioning of the market and, on the other hand, to create advanced and specialized factors of production. Industrial policies are taking a broad scope in modern policy thinking: educational, trade, energy, environmental, and competition policies overlap, to a large extent, the areas of industrial policies (see Hernesniemi et al., 1996).

To summarize, industrial policies are becoming competitiveness policies. Governments are aiming at creating attractive locations for internationally competitive firms by developing high level technological infrastructures and other internationally immobile (created) factors of production.

6.2 Policies towards FDI

Many governments have actively liberalized policies regarding FDI and foreign companies in the national economy; as a consequence, FDI inflows have typically increased considerably. Even though national policies towards FDI are converging, large differences across countries remain. (UN, 1996). To some extent, variety in the applied policies is desirable since national objectives may differ; the applied policies should, of course, first and foremost promote other government goals. On the other hand, there ought to be multinational coordination of policies towards FDI to avoid unfair practices. As soon as there is sufficient coordination of FDI policies, the attractiveness of the country as such will determine international direct investment flows. In conducting any economic policies, it should be kept in mind that it is the private enterprises that are the primary source of wealth in a modern society. Public and private interests are thus largely parallel.[61] This brings us back to the issue of national competitiveness, as discussed in the introductory section.

Three commanding principles in the formulation of FDI policy are (1.) market contestability,[62] (2.) modal neutrality,[63] and (3.) pol-

---

61 The government is of course much more concerned with national defense, security, social issues, employment, etc. than a private enterprise. Furthermore, it can be argued that the government's planning horizon is, or at least should be, longer than that of a firm.

62 A 'contestable' market is open to entry by all firms, domestic and foreign. 'Market contestability' extends the traditional definition of 'access to markets'. The former

icy coherence[64] (UN, 1996, see p. 167 & Box VI.2 and references therein). Compared to the old policy regime, where policy makers focused on to what degree firms (domestic or foreign) had 'access to market', the new broader concept focuses "... more on the degree of freedom the firms enjoy in contesting the markets, irrespective of the modality used to contest them." (UN, 1996, p. 167).

Nation-states have traditionally exercised control over the activities of foreign citizens and/or firms within the country. Globalization, and especially European economic and political integration, will considerably reduce a country's ability, and maybe also willingness, to exercise this control. While the diminishing power of the nation-state can be considered the next stage in our economic development, we should proceed with caution; the effects of FDI and MNEs may not always be desirable. At the very least, we should carefully monitor foreign activity within the country and continuously evaluate its effects.

Dunning (1993, p. 288) notes that two-thirds of civilian R&D and 90% of trade in technology and technology-intensive products is undertaken by MNEs. It is therefore clear that MNEs have an effect on virtually any country's technological capacity.[65] According to Dunning (1993, p. 301–5), the proportion of R&D activity MNEs undertake outside their home countries is currently small – a little over 10%. There are, however, several exceptions to this rule and, as we have argued above, MNEs may start tapping foreign 'centers

---

term includes the idea that domestic and foreign companies should be able to serve the national market in a way they consider the most appropriate (without any policy restrictions). In other words, a foreign company may have 'access to market' if there are no tariffs or quotas that would restrict the flow of goods across the national border, but the market may not be 'contestable' if there are still limitations on FDI. The term also includes the idea that all firms have equal access to, and can compete for, all factors of production. Note that this definition considerably broadens the scope of FDI policy; for example, restrictions on foreign real estate ownership and public R&D grants/contracts exclusively to domestic companies reduce contestability.

[63] 'Modal neutrality' means that it should be left to the firm to choose the mode it uses to serve the market (i.e., whether the firm wants to export, license or franchise, or engage in FDI and produce locally).

[64] 'Policy coherence' means that all public policies should consistently support objectives across a broad spectrum of issues. A high level of policy coherence is desirable since it is more likely that objectives are achieved then. For example, policies supporting industrial investment and restrictions on capital equipment imports are incoherent.

[65] Possession and control of technological capacity is one of Dunning's 'O' (ownership) advantages.

of excellence' more actively and move a greater amount of their R&D abroad.

Foreign-based R&D by MNEs is more likely if the host country has a sophisticated technological and educational infrastructure and a wealth of related/supporting activities. All centralization and decentralization forces of R&D enter the equation.[66] At this point, it seems that the primary reason for foreign R&D is the need to customize/develop products for local markets, although having an abundant supply of R&D inputs is also important (Pearce & Singh, 1992).

Technology transfer by MNEs potentially upgrades the national technology base and possibly contributes to a more efficient use of domestic resources. Whether this in fact occurs depends on the dynamic interaction between the host country and MNEs. If a country is in factor- or investment-driven stages of its development, the effect of MNEs will most likely be positive.[67] The effects on a country that has already entered the innovation-driven stage are somewhat unclear. If such a country has a small domestic market and/or is technologically uncompetitive in the global market, it may only be able to attract low value-added activities of MNEs. In turn, the presence of the MNE's subsidiary could force the uncompeti-

---

66 Dunning's 'centralization forces' of R&D activity include: (1.) need for a critical mass for economies of scale, (2.) presence of supporting industries, (3.) adjacent downstream operations, (4.) availability of resources and capabilities, (5.) accumulated experience of R&D, and (6.) avoidance of cross-border communications and coordination problems. 'Decentralization forces' are (1.) need for localization of R&D because of differences in market characteristics, raw materials, laws, etc., (2.) need to be near clusters of cutting-edge activity, (3.) monitor R&D activities of foreign firms, (4.) accessing local R&D resources, and (5.) to defend competitive positions in R&D-intensive sectors (see Exhibit 11.1 Dunning, 1993, p. 310 for a complete list of both 'forces'). Note that arguments (2.) to (5.) for centralization could also favor decentralization in certain cases. Based on transaction cost theory, Dunning makes the statement that "... newer technologies, those which represent a radical change in the state of the art, those which require the presence of related industries and sophisticated supply capabilities if they are to be used properly, and those where the perceived risk of loss of proprietary rights is the highest, are most likely to be internalized." (Dunning, 1993, p. 311). This argument assumes, however, that the firm is already relatively well informed about the new technology. Had this *not* been the case, arguments (2.), (3.), and (5.) would be effective and MNEs would have to decentralize R&D to some extent.

67 FDI would bring much needed capital to a factor-driven economy. In an investment-driven economy, MNEs could act as 'tutors' of latest business practices and also provide capital.

tive domestic firms out of business.[68] However, if the country's technology base is solid and domestic companies are competitive, the country should be able to attract high value-added activities of MNEs, which would further enhance competitiveness through spillovers and increased competition. In practice, there have been examples of cases where FDI supports the 'virtuous' cycle, thus promoting competitiveness of the cluster in question, and cases where FDI has reinforced the 'vicious' cycle of the sector, thus increasing the dependency on externally supplied technology (Dunning, 1993, p. 317). Of course, there is a fear that an increasing amount of domestic innovative capacity is under foreign ownership – on the other hand, the question remains, why should it matter?

6.3 Technology Policies and FDI – Need for International Cooperation

In evaluating FDI, it should be kept in mind that a small country, such as Finland, can not be technologically competitive in all sectors. The most logical strategy on the policy front is to strengthen the existing knowledge concentrations that have already met the market test (for discussion see Jacobs & De Man, 1996). Furthermore, Finland will never be completely self-sufficient in *any* technology; thus foreign contacts in one form or another are essential. In order to benefit from our existing knowledge, a well-defined, broad, and coherent technology strategy is vital; as we have discussed on other occasions, promoting the creation of human capital, improving the scientific infrastructure, and reducing the time-to-market on innovations are all part of the appropriate policy mix.

Ultimately, we do not want to only be a *host* of MNEs' value-added activities, but we rather want to offer an environment that is attractive enough for Finland to become the *home* of globally competing MNEs. The sheer size of the country obviously limits the possibilities on this front, but at least the most dynamic clusters in Finland are able to offer operating environments that are attractive for globally competing firms.

---

[68] This would, of course, only speed up the restructuring of an uncompetitive company / industry / country, which it would have to undergo anyway.

Box 6.1 Multilateral Agreement on Investment (MAI).

To date, cross-border investment flows have suffered from the lack of multilateral agreements to eliminate barriers and distortions to investment flows. International cooperation has relied mainly on bilateral investment treaties. Bilateral treaties are, however, not ideal in a rapidly integrating world economy. In order to mitigate this gap, OECD Ministers launched in May 1995 negotiations on a Multilateral Agreement on Investment (MAI). 29 OECD member countries take part in negotiations. OECD countries account for some 85 percent of worldwide foreign direct investment outflows and 60 percent of inflows.

The mandate for the negotiations is to achieve a comprehensive multilateral framework for investment with high standards of liberalization and investment protection with effective dispute settlement procedures. Negotiations deal with international labor standards and environmental issues, too.

The scope of the MAI is to cover all forms of investment coming from MAI investors. These include direct investment, portfolio investment and intangible assets. One of the main elements of the MAI is that the MAI parties will commit themselves to treat foreign investors and their investment *no less* favorably than they treat their own investment. In addition, they will also agree not to discriminate among the investors or investments of different MAI parties. The MAI will not inhibit normal non-discriminatory government regulatory activity. So, every state will still have the right to prescribe the conditions under which multinational enterprises operate within its national jurisdiction. Furthermore, *positive discrimination* of inward foreign investments will be still allowed, but as mentioned, all foreign investors should be treated equally.

Most of the aspects of the MAI are already covered by bilateral investment treaties and by different OECD recommendations. However, the MAI will contribute to the existing treaties by creating a single, binding and comprehensive multilateral investment agreement, which will have effective dispute settlement procedures. Thus, it will decrease uncertainty and costs related to cross-border investments. From the Finnish point of view, a positive aspect of the MAI is that liberalization of investment rules in other MAI countries will make it easier for Finnish investors to invest in those countries. In addition, as Finland has high labor and environmental standards, it will benefit if these issues are included in the MAI.

Competition between countries for MNEs should not take a form of a new kind of protectionism. MNEs and/or their value-added activities should be attracted indirectly through creating advanced factors of production, not directly through subsidies, company-specific tax reductions, etc. Multinational cooperation is needed in order to ensure that these policies are not used elsewhere.

As far as taxation and environmental regulation are concerned, uncoordinated national efforts to attract inward FDI may cause a

'race to the bottom'; countries may start competing on who offers the lowest corporate tax rates and the least strict environmental regulations. Surprisingly enough, Finland fairs well in the comparison of corporate taxation; on the flip side of the coin, personal taxation is extremely high when compared internationally.

6.4 Finnish Policies Towards FDI

Economic policy thinking in Finland was characterized by economic nationalism in the inter-war period as well as during the early postwar decades. This entailed restrictive policies towards FDI (see Myllyntaus, 1992). Controls on capital movements were lifted gradually only in the late 1980s and early 1990s, and the remaining restrictions on foreign ownership were removed as late as 1993, as part of the European integration process. Finland was not unique in this sense – the other two Nordic countries, Norway and Sweden, had capital controls until the late 1980s as well.

In practice, Finnish policies regarding inward FDI were fairly liberal already before full liberalization. However, the formal restrictions and actual involvement of government in some larger acquisitions by foreign companies (like the Swedish *ASEA* acquiring *Strömberg*) undoubtedly diminished the capital inflow to the country.

It can be argued that, with its restrictive policies, Finland kept one important channel of technology transfer narrower than many other small countries. In fact, Finland developed its own model of technology transfer in which imports of machinery, acquiring foreign licenses and patents, and "natural diffusion" (through trade and analyzing foreign products) were emphasized at the expense of receiving FDI (Myllyntaus, 1992). The absence of foreign competitors also led to less competition and inefficiencies in some industries, which became visible after the removal of restrictions in the early 1990s (see Pohjola, 1996; Vartia & Ylä-Anttila, 1996). The restructuring aimed at correcting these inefficiencies had a bearing on the deepness of the recession of the early 1990s.

6.5 Closing the Circle – The Basic Policy Issue

In a world of free factor movements, the emphasis of competition is moving from product markets to factor markets. The basic policy issue is: *How to make a country (or a region) an attractive location for internationally competitive firms?*

Subsidizing the basic factors of production or declining industries and firms leads to distortion of competition and reduces competitiveness in the long run. Supporting the national champions is not a viable strategy either. The governments' role is to indirectly influence the operational environment of firms and to act where the market fails.

National policies still matter – one could even argue that their role has become more important than before. The modern growth literature emphasizes the roles of technology and knowledge as the main determinants of economic growth and welfare. Education and R&D will typically remain as public sector activities and major policy instruments.

Box 6.2 FDI and the Irish Economy – The Use of Fiscal Incentives to Promote Investment Inflows.

Ireland has pursued an industrial strategy that (i) promotes export-led growth in manufacturing through financial supports and fiscal incentives, and (ii) encourages foreign companies to establish manufacturing plants specializing in exports. In 1993, foreign companies produced 69% of total net output and accounted for 45% of employment in Irish manufacturing.

Until the mid-1960s, Ireland was a highly protected economy. The removal of trade barriers was coupled with restructuring support for import-substituting Irish firms and sizable inflows of FDI. The country was able to maintain the previous exchange rate against Pound Sterling, and there were not massive adverse effects on manufacturing employment. Inflows of FDI contributed to reallocation of resources across branches and geographical regions.

The main element of the pro-FDI policy, an *automatic tax holiday* on the profits from all new export sales, was introduced in the 1950s. The holiday was set to terminate in 1990, but already prior to that the European Commission forced Ireland to alter the policy as far as new firms were concerned.[69] The automatic fiscal incentives are complemented by *double-taxation agreements* designed to compensate for any deterioration of tax benefits due to the policies of respective host countries. Cash grants for machinery & equipment and training, subsidized rents, and technology-transfer supports are, among others, additional components of the policy-driven FDI incentive package. In addition to these, there are also purely discretionary grants. The Irish have also attempted to minimize the uncertainty factor through establishing policy continuity.

In the Irish case, the indigenous companies appear to prosper with the inward FDI, which has reduced hostile attitudes and lessened fears of 'crowding out'. Clearly, Ireland would be harmed by massive outflows of capital. The increased *real* attractiveness of Ireland as a base for foreign investment decreases the likelihood of this scenario. At this point it seems that the Irish strategy succeeded, and governments throughout the world are now following the Irish example. It is clear that the issue of FDI promoting policies will soon receive more attention from the European Commission.

Source: Ruane & Görg (1997).

[69] New firms would be entitled to a corporate tax rate of 10% applied to total profits. This modification was done in order to remove the export bias of the previous policy.

7 CONCLUSION

Globalization raises both fear and optimism. This is partly due to the fact that the concept is not well defined and that there are many conflicting views and research results concerning its consequences. It is evident, however, that the process is irreversible.

The Finnish economy has moved to the era of global competition, an era which also touches upon previously protected industries. Households and individuals also participate in the global economy in many ways: they are employed by multinational enterprises, invest in global capital markets, consume globally branded products, are members in international organizations etc.

There is a growing need for research on the effects of globalization in small economies. Väyrynen (1997; 1998) are excellent reviews of the current literature. The European discussion is summarized and assessed by Raumolin (1998), regional and local impacts in Finland are considered by Okko, Miettilä & Hyvärinen (1998), and Kasvio & Nieminen (1998) discuss labor market issues with particular reference to Finland.[70]

The poor information base is a major problem in further empirical research on globalization. National accounts and other national statistics simply do not provide relevant data on cross border technology and knowledge flows or global networking of companies (Ylä-Anttila, 1997). New firm and other micro data are needed urgently.

This report considers economic aspects of globalization in a small open economy. Understandably, we mainly focus on Finland. The current globalization wave is characterized by fast growth of direct investment and huge advancements in information and communication technologies. As compared to other industrialized countries of similar size, Finland faces globalization challenges from a slightly different starting point. The impacts are also somewhat different.

---

[70] Several other interesting reports are forthcoming in Sitra's globalization project.

7.1 Globalization – Just a Zero Sum Game?

Above we have mainly discussed what can be characterized as the 'second wave' of globalization. Removal of trade restrictions in the 1960s and 1970s initiated this wave; fewer restrictions on capital movements since the mid-1980s further fuelled it.[71] As discussed in the introduction, the labeling and dating of various internationalization eras is subject to dispute. We continue to argue, however, that the 'second wave' has several distinctive characteristics (see also Baldwin & Martin, 1998). Among other things, 'physical' migration has a lesser role in the current era: capital and in particular information, rather than people, move. Furthermore, lower transportation, communication, and computing costs have shifted the priorities of business enterprises and decreased the importance of geographical location.

The increased interdependence of world economies and the emphasized role of MNEs have had a much more profound effect on our lives than, e.g., the European integration process. In the public globalization discussion negative aspects of the phenomenon have been quite pronounced. It has been argued that globalization will, among other things, increase social and economic inequality, shift economic and political power from democratically elected decision makers to MNEs, and put downward pressure on hourly wages in the industrialized countries as competition from third world countries tightens. Many observers make the pessimistic conclusion that, as a consequence, worldwide welfare deteriorates and a handful of large companies will rule the world (see, e.g., Korten, 1997).

Regardless of whether one accepts the pessimistic scenario or not, "The general consensus is that the process of globalisation of economic activity is irreversible." (OECD, 1997c, p. 27). If we try to isolate ourselves from worldwide trends and their effects, the consequences will almost surely be detrimental.

The tone of the globalization discussion has been distinctly western. One of the central themes has been the worry that in the 'borderless' world low skill employment is only found in low-income developing countries, causing massive unemployment and deteriorating standards of living throughout the developed world.

---

[71] We have also emphasized the important role of advances in information and communication technologies.

On the other hand, the *same* authors often state that MNEs, with their efficient production and distribution methods, make it impossible for the developing countries to compete in the world market. These arguments are conflicting.

In reality, global annual GDP continues to grow; freer trade and market integration has generally improved welfare. While the benefits, in terms of faster economic growth for instance, are unevenly distributed across countries, there is little evidence on clear adverse effects of globalization (see Bhagwati, 1998).

This is not to say that there would not have been profound, and sometimes unwelcome, labor market changes among the industrialized countries. Labor demand has shifted towards 'high skill' professions, which is also reflected in relative wages; since the 1970s real earnings of low skill workers have in fact *de*creased (for U.S. evidence see Slaughter & Swagel, 1997; Haskel & Slaughter, 1998). In Europe the changing labor demands have been manifested by the high unemployment rates[72] and, in some countries, increased income inequality among low-skill workers. Figure 7.1 shows that Finnish employment has improved the most in the *high skills /high wages /high tech/ high knowledge* industries. While the developments in other OECD countries are similar, the scope of change is exceptionally large in Finland. The question remains *what are the respective roles of globalization and technological change in all this?*

Research has shown that a lion's share of the changes in labor demand can be attributed to technological change rather than globalization. Outsourcing through imports[73] account for up to one-fifth of the overall change (see, e.g., Slaughter & Swagel, 1997; Machin et. al., 1996).

According to Parjanne (1997; 1998) Finnish *intra*-industry changes in skill composition account for 90% of the overall high skill labor demand increase. Thus only 10% can be attributed to *inter*-industry factors, i.e., to the fact that some industries grow while others do not, which in turn is partly caused by globalization.[74]

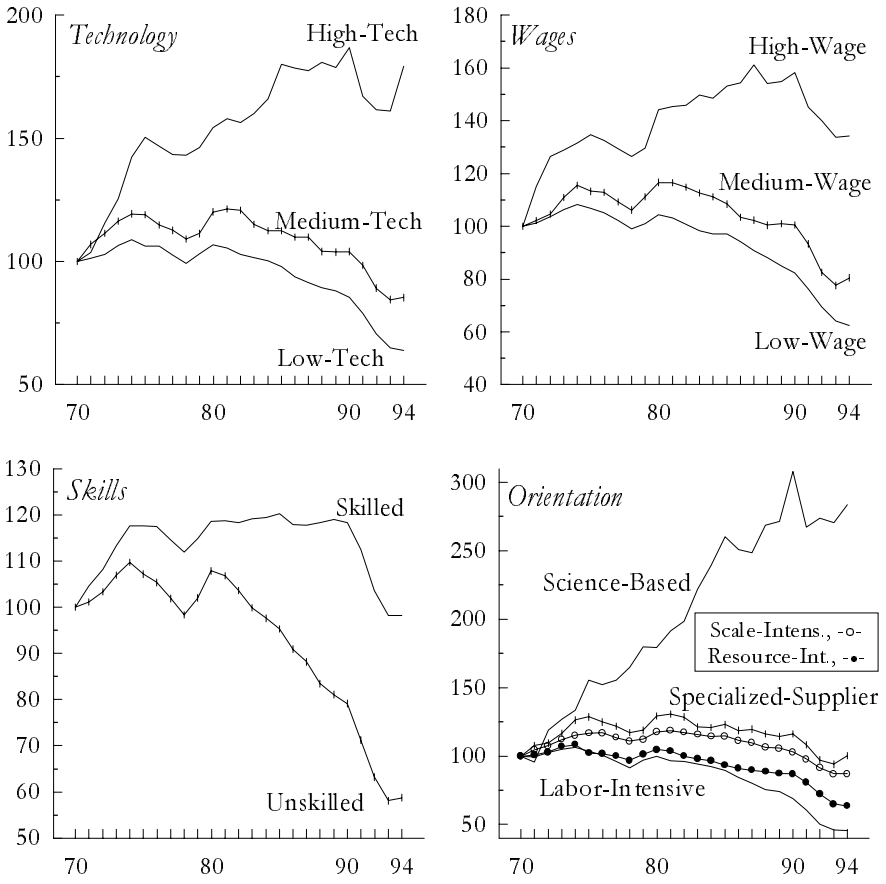
---

[72] With the exception of the U.K.

[73] Importing raw materials and intermediate inputs from a lower cost country rather than producing them domestically.

[74] In the literature this phenomenon is called *skill-biased technical (or technological) change*: even though high skill labor has become more expensive relative to low skill, its demand nevertheless sports higher growth rates (see, .e.g., Haskel & Slaughter, 1998).

Figure 7.1 Manufacturing Employment in Finland by Industry Type.



Source: OECD (1997e). Calculations by the authors.
Note: Index 1970=100.

We have argued above that domestic factors explain observed problems within a country much more powerfully than global ones. We have also noted that *a priori* one should expect to gain rather than to lose as a consequence of globalization. All this said, there will be winners and losers in the globalization game. As previously protected sectors face new competition, there will be transitional problems and costs. In some industries profits will decrease and employment will deteriorate. In Finland, and also in other Nordic countries, banking & finance, agriculture, and the food-processing industry are a few examples of such branches. Despite the short-

term transition costs, these changes are beneficial in the long-run; they promote necessary restructuring and increase economic efficiency. Fears of a crumbling domestic capital stock, job loss, and a deteriorating standard of living are perhaps exaggerated, and if we take Krugman & Venables' (1995)[75] model as an accurate description of the real world, these phenomena will only be temporary. Furthermore, we are in control here: "Factor employment and hence job creation, and factor income and hence living standard levels, generated by domestic business sectors are determined by firms' competitive achievements." (OECD, 1996d, p. 13).

Globalization and technological development are interrelated. Trade, foreign direct investment, and better information and communication technology speed up technology diffusion. Harder international competition forces firms to innovate at an accelerated pace.

In global competition many Finnish companies have chosen knowledge-driven strategies; they have increased their research budgets and investment in human capital. Had the public sector *not* increased its stakes in R&D and education, these strategies would have been on shaky foundations. A natural extension of the Finnish 'high road' strategy is the goal to attract high value added / high-skill activities of MNEs the world over. The problem of course is that virtually all other countries in the world are also interested in the very same activities. Thus, while firms compete in the market place, the nation-state itself must also be 'competitive' (see, e.g., Siebert, 1995). Upon making economic and social policy, decision-makers also unavoidably determine, in part, competitiveness of the nation (see Ministry of Finance, 1998).

7.2 Cross-Border Capital Flows, MNEs, and Employment – Are Jobs Being Exported?

We have shown above that major Finnish companies are already quite globalized; currently they employ as much abroad as they do in Finland (Ali-Yrkkö & Ylä-Anttila, 1997b). Lately, small and medium-sized enterprises have also internationalized rapidly. This is

[75] Based on their theoretical model, Krugman & Venables (1995, p. 857) show that "At high transport costs all countries have some manufacturing, but when transport costs fall below a critical value, a core-periphery spontaneously forms, and nations that find themselves in the periphery suffer a decline in real income. At still lower transport costs there is a convergence of real incomes, in which peripheral nations gain and core nations may lose."

particularly true in electronics and in other rapidly growing branches, where subcontracting and outsourcing are a norm (see Ollus, Ranta, & Ylä-Anttila, 1998). In Finland, as in other countries, the limited size of the domestic market, especially if the company has chosen a narrow niche, the need to be near customers, and economies of scale are among the motives for internationalization. At least the technology-intensity of the firm and the size of the *host* market are powerful explanatory factors of firm-level globalization (Ali-Yrkkö & Ylä-Anttila, 1997b; Leiponen, 1997). Empirical evidence suggests that relative cost levels are of minor importance and are present only in some branches (e.g., textiles & clothing).

How does *investment abroad* affect *domestic* growth, employment and economic structure? Are investments abroad *substitutes* or *complements* to domestic ones? As discussed above, the still-fragmented evidence would seem to suggest that outward foreign direct investment promotes activities at the home base. It can even be argued that it is the investments abroad that have made it possible to continue the activities in Finland (see, e.g., Borsos, 1995). Overall, it can be said that at least in the Finnish case the effects of globalization have been positive. It seems, however, that the complementarity of foreign and domestic investment is becoming less obvious. Cross-border horizontal expansion has lead to a situation where intra-firm plants in various countries compete rather than cooperate with each other. In a multiplant firm production can easily be shifted from one country to another as relative costs change. Thus, issues of relative costs cannot be ignored even though technology plays a major role in the globalization process.

In recent years we have experienced an expansion of company networks: rather than expanding through mergers and acquisitions, companies make cooperative agreements. The forest and automobile industries are illustrative examples of this. Savings in logistics and distribution costs can be considerable. The building of these corporate networks continues and business activities will become more dispersed geographically. At the same time ownership of productive assets continues to concentrate. At the country and regional level this means that competition over MNEs' various business activities will further intensify.

7.3 Foreign Ownership in Finland – Selling the Crown Jewels & Losing Control?

As the analysis of investment stocks above reveals, Finland has attracted relatively little foreign investments compared to our investment abroad. In fact, the outward stock is over twice as high as the inward one. Despite the growth of inward investment in the 1990s, the imbalance between the two stocks continues to grow, i.e., the outward investments of Finnish companies have expanded even more rapidly. Yet it should be noted that already one-third of the top 500 companies are foreign controlled. Large and/or technology-intensive companies have attracted foreign capital the most.

Portfolio investments in Finland have exploded in the 1990s. Currently, foreign parties hold half of the market value at the Helsinki Stock Exchange.

Cross-border capital flows have aroused discussion and fears about the diminishing national control. The research suggests, however, that the free flow of capital promotes economic efficiency and functioning of capital markets. Thus the effects are mainly beneficial. Global capital markets provide a practically inexhaustible source of funding for Finnish and foreign companies alike. In large part, foreigners are to thank for the boom and improved liquidity at the Helsinki Stock Exchange. It can be argued that the recovery from the painful recession at the turn of the decade would have been considerably slower without the influx of foreign capital (see Pulli, 1998).

The analysis in Pajarinen & Ylä-Anttila (1998) reveals that foreign-owned companies in Finland have succeeded better than domestic ones in terms of return on investment and profitability. This would seem to suggest that economic efficiency has increased thanks to capital inflows. The results are similar in other countries (see, e.g., Strandell, 1997). In the Finnish case the overall characteristics of foreign-owned companies can be summarized as follows: fast growing, profitable, export-oriented, and technology-intensive.

Case studies show that inward FDI to Finland has supported domestic activities by opening up marketing and distribution channels: domestically developed technology has reached larger markets.

Despite the many benefits of cross-border capital flows, there are also some potential drawbacks. On the policy front the range of

possible tools has narrowed considerably. In part, 'market forces' have taken over policy-making, i.e., in the making of public policy the consequences on the capital market have to be kept in mind. Furthermore, a high degree of foreign ownership may decrease the risk tolerance and increase volatility of a small open economy.

Along with other Nordic countries Finland removed the remaining restrictions on capital movements in the 1980s and 1990s. It has been argued that the recent crises of the banking & finance sector in these countries, and thus a large portion of the recession, were caused by improper procedures as the regulations were removed. Oxelheim (1996) argues that faster and more widespread deregulation would have led to better results – some argue the opposite.

7.4 Finland in Global Competition – Strengths and Weaknesses

Finnish specialization is clearly shifting towards knowledge-intensive high-tech branches, away from the previous raw material, energy, and capital-intensive structure (Mäkinen, 1998; see also Figure 7.1). The change has been rapid: the share of electronics and electrical equipment in the total exports has grown from one tenth to more than 25%, thus being higher than that of the paper industry, which has for decades dominated the Finnish exports. At the same time, the traditional clusters of forestry, metals, and energy have shifted in a knowledge-intensive direction.

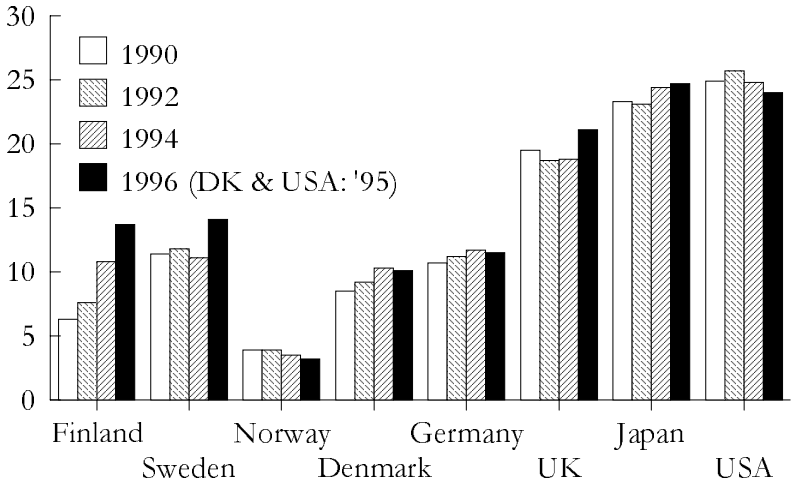
In contrast to the trend in many other industrialized countries, Finnish gross domestic expenditure on R&D has grown throughout the 1990s. Finland has already surpassed Japan and the U.S. in terms of R&D-intensity, and is second only to Sweden among the OECD countries. In particular, telecommunications technology has become one of the Finnish 'centers of excellence': Mäkinen's (1998) export specialization indices reveal that Finland, besides Sweden, is the most 'telecommunication equipment export' oriented country in the world.

Young generations in Finland are highly educated and the share of university graduates in science-related fields is quite high.

Investments in education and R&D are starting to show up in the Finnish industrial structure. Consequently, high-tech exports

have grown much more rapidly than in most other countries (Figure 7.2).

Figure 7.2 High-Tech Exports as a Percentage of Total Exports in Selected Countries.



Source: Statistics Finland – *Tiede ja teknologia 1998:2* (Science & Technology).
Note: 'High-tech' follows OECD's 1995 definition. See *Tiede ja teknologia 1996:4*, p. 20–8.

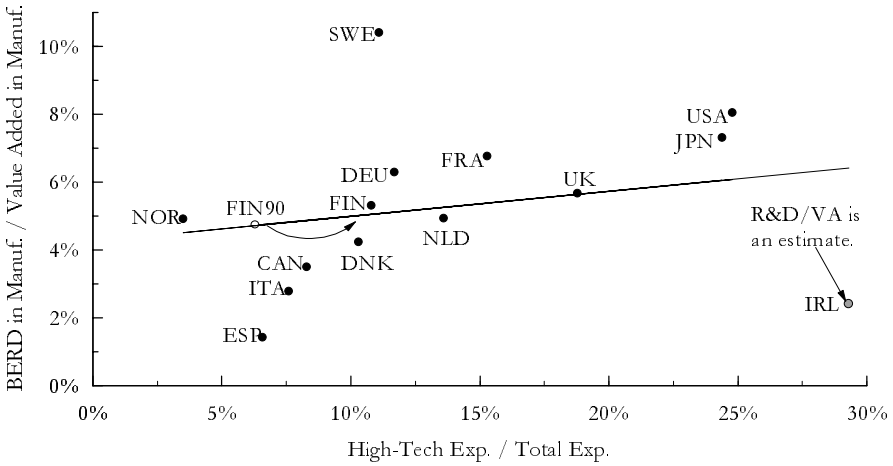
In Finland, it has been mainly domestic R&D, rather than imported technology, that has fuelled the growth of high-tech exports. Ireland, on the other hand, does about as much R&D as Spain, but is a major R&D exporter (Figure 7.3); it relies heavily on imported capital and technology (Figure 7.4). Sweden is on the other end of the scope: it does a lot of R&D but high-tech exports are quite modest – Swedish companies seem to keep research at the home base but exploit the results abroad.

Some of the Finnish weaknesses in global competition are high income taxation, the low educational level of older generations, and stubbornly high unemployment[76]. Highly progressive taxation and extensive unemployment benefits have reduced incentives to seek employment. Some unemployment has also been caused by technological development: while certain skills are in high demand, others have become obsolete. Low-skill employment in industry has

[76] Partly a result of a poorly functioning labor market.

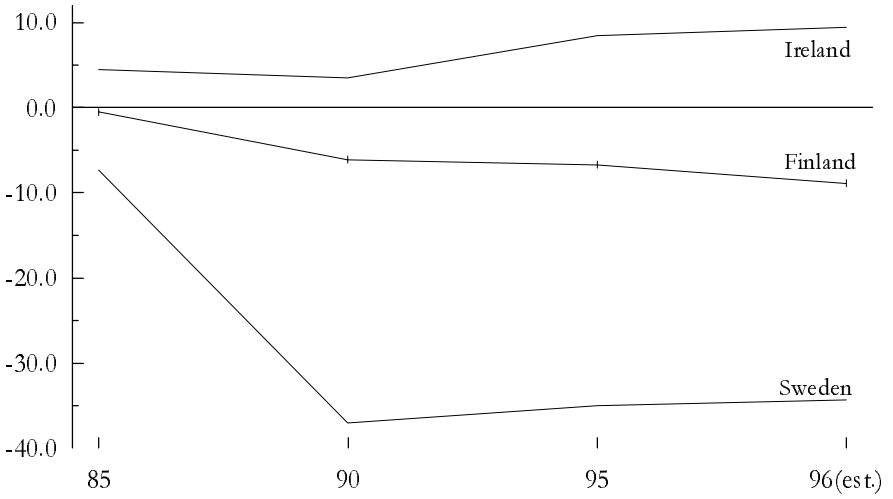
decreased severely in the past few decades. In other industrialized countries, unlike in Finland, the service sector has absorbed a significant portion of vacant labor (Ministry of Trade and Ind., 1998).

Figure 7.3 The Relative Share of High-Tech Exports and Technology-Intensity in Selected OECD Countries.



Source: OECD (1997e; 1997g). Statistics Finland – *Tiede ja teknologia 1997:2.*

Figure 7.4 Balance (Inward–Outward) of FDI Stocks in Billions of $.



Source: UN (1997).

7.5 Finland in Global Competition – A Look Ahead

The competitive advantage of the Finnish economy and firms in it has changed significantly. Industrial and export structures have diversified considerably, which has made the economy less dependent on the volatile world paper and metal markets.

Finnish high-tech exports exceed imports, whereas the EU as a whole is a net importer. Telecommunications-related electronics are to thank for this positive trade balance. It is the rapidly increased R&D investment of this sector which, to a large extent, also explains the very high research intensity of the Finnish business sector and the economy as a whole. Finland is among the leading countries in the world in terms of using and producing information and communications technologies (Statistics Finland, 1997). The future is bright as well; over the next 10 to 20 years, the ICT cluster is expected to be one of the fastest growing sectors both in Finland and worldwide (Hernesniemi, Lammi & Ylä-Anttila, 1996).

The sensitivity of the Finnish economy to world market fluctuations has also been reduced as a consequence of the rapid internationalization of business: large firms are less vulnerable to demand changes in regional markets thanks to worldwide diversification of both exports and production. Furthermore, the long-term growth potential has also increased. Previously, Finnish industry was, to a large extent, specialized in relatively slowly growing products and markets. In the 1990s, however, it has increased its specialization in high growth industries. In short, the industrial structure has changed from slow growth, raw material-, capital-, energy- and scale-intensive industries towards knowledge-driven industries and industrial clusters.

At the same time the scope of national fiscal and monetary policies has narrowed, as a consequence of increased capital mobility and Finland's membership in EU and EMU. Exchange rate policy, as a means to cope with external shocks, has irreversibly disappeared from the toolbox of policy makers. Due to the changes in industrial structure, however, the need to use such adjustment measures has decreased. EMU membership will decrease the adverse effects of volatility in international financial markets, as compared to other small European countries outside the monetary union. The significance of national policies has not disappeared, how-

ever, but the emphasis has shifted towards long-term structural, industrial and technology policies.

The consequences of the common monetary policy in EMU with respect to a small open economy are hard to assess. The differences of economic developments in various countries and regions may be impossible to take into account.

The volatility of world financial markets has become a permanent element of the global economy. At the same time, economic integration has taken place and national economies have become more interdependent. Globalization, on the other hand, has spurred global growth and fuelled advances in ICTs.[77] Global competition will increase productivity and efficiency in many industries and markets, which previously had been protected. The Finnish case is one illustrative example of this. (Pajarinen & Ylä-Anttila, 1998).

Some of the fastest growing and/or renewing branches are information and communications technology (ICT), banking and finance, retail and wholesale trade, as well as media. With the exception of the Nordic countries, which excel in mobile communications, Europe lags behind the U.S. and Japan in ICT. The investments in this particular branch are often huge, and may thus be possible only for large companies hosted by sizable economies. Even the biggest companies in the field are actively seeking cross-border partners.

From the perspective of a small open economy, the answer to the relative disadvantage of size is to specialize in niches and company networks; this is particularly true in the case of small- and medium-sized enterprises (Ollus, Ranta & Ylä-Anttila, 1998). The telecommunications sectors in both Finland and Sweden are good examples.[78]

With its current structure, Finland is relatively well positioned to respond to the challenges of globalization. Recovery from the recession of the early 1990s showed that, despite doubts, there is sufficient macroeconomic flexibility in labor markets and in the economy as a whole (OECD, 1998b; Kiander & Vartia, 1998). The free movement of capital and EMU will, however, put the economy to a

---

77 Ad *vice versa* as discussed above.

78 Recall that, when compared internationally, Finland and Sweden are the most specialized countries with respect to telecommunications equipment exports (Mäkinen, 1998).

new test. At that time, flexibility will be needed at micro level as well. Individuals and firms must be ready to adapt swiftly to changes in their operating environment. Even if labor migration were to remain limited, rapid capital movements ensure that labor demand is responsive to changes in relative costs. Thus, curbing inflationary pressures remains one the main goals of monetary and economic policy.

Despite the fact that specialization and company co-operation and networks have increased efficiency and welfare, there are also evident risks. The competitive advantage of a nation-state or a region can be lost as a consequence of cost hikes, demand shifts, and/or technological discontinuities. Regardless of the reason, flexible economic structures make it easier to adapt (see Lassila & Valkonen, 1998).

The financing of national social policies may also have to be reconsidered in the globalized economy. While some underlying reasons for changes in the provision and financing of social security and health care are inborn, globalization has certainly accelerated the process. Social security is no longer a purely domestic issue in the 'borderless' world. In the newly sketched models, the public sector takes the role of a coordinator rather that that of a financier and a provider, and individual freedom, and also responsibility, is greater. A good social security system remains one of the qualities of a welfare society, but it is to a lesser extent publicly financed (see Lassila & Valkonen, 1998).

Comprehensive social policies and well functioning economic institutions can be sources of national competitiveness. The public sector can be the main or even the sole provider of social services, but inefficiency cannot be tolerated.

REFERENCES

Abramovitz, M. (1986). Catching Up, Forging Ahead, and Falling Behind. *Journal of Economic History, 46*, 386-406.

Åkerblom, M. (1994). Yritysten tutkimus- ja kehittämistoiminnan kansainvälistyminen: Tutkimus- ja kehittämistoiminta Suomessa ja ulkomailla sekä osallistuminen t&k-yhteistyöhön (Tiede ja Teknologia 1994:1A). Helsinki: Statistics Finland.

Ali-Yrkkö, J., & Ylä-Anttila, P. (1997a). Internationalization of Large Industrial Firms – Implications for Domestic Growth and Employment. In J. Larimo (Ed.), *Internationalization and Foreign Direct Investment Behaviour in OECD and Asian Countries* (Report Number 24). Vaasa, Finland: University of Vaasa.

Ali-Yrkkö, J., & Ylä-Anttila, P. (1997b). *Yritykset kansainvälistyvät – Katoavatko työpaikat (Internationalization of Large Industrial Firms – Implications for Domestic Employment), in Finnish.* Helsinki, Finland: ETLA – Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy, Sarja B 130 Series.

Andersson, T. (1994). *Foreign Direct Investments and Employment in Sweden.* The Industrial Institute for Economic and Social Research.

Archibugi, D., & Michie, J. (1995). The Globalization of Technology – A New Taxonomy. *Cambridge Journal of Economics, 19,* 121-140.

Bhagwati, J. (1998). *Globalization: Who Gains, Who Loses?.* Paper presented at the Kiel Conference on Globalization and Labor. Kiel, June 24–5, 1998.

Baldwin, R., & Martin, P: (1998). *Two Waves of Globalisation: Superficial Similarities, Fundamental Differences.* Paper presented at the Kiel Conference on Globalization and Labor. Kiel, June 24–5, 1998.

Bairoch, P., & Kozul-Wright, R. (1996). Globalization Myths: Some Historical Reflections on Integration, Industrialization and Growth in the World Economy, *UNCTAD Discussion Papers, Number 113.* New York, NY: United Nations.

Barrell, R., & Pain, N. (1997). The Growth of Foreign Direct Investment in Europe. *National Institute Economic Review, 2/97*(160), 63-75.

BIS. (1996). *Central Bank Survey of Foreign Exchange and Derivatives Market Activity 1995.* Basle, Switzerland: Bank for International Settlements: Monetary and Economic Department.

Borsos, J. (1995). *Domestic Employment Effects of Finnish FDIs in Eastern Europe.* Helsinki, Finland: Taloustieto Oy and ETLA – Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy, Sarja B 111 Series.

Bouin, O., & O'Connor, D. (1997). The World Economy in 2020. *OECD Observer, Number 207,* 9-12.

Braunerhjelm, P., Heum, P., & Ylä-Anttila, P. (1996). Internationalization of Industrial Firms: Implications for Growth and Industrial Structure in the Nordic Countries, *ETLA Discussion Papers, Number 551.* Helsinki, Finland: ETLA – Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy.

Braunerhjelm, P., & Oxelheim, L. (1996). In S. Hirsch & T. Almor (Eds.), *Outsiders' Response to European Integration* : Copenhagen Business School Press.

Braunerhjelm, P., & Svensson, R. (1996). Host Country Characteristics and Agglomeration in Foreign Direct Investment. *Applied Economics, 28*(7), 833-840.

Bryan, L., & Farrel, D. (1996). *Market Unbound: Unleashing Global Capitalism*, New York, NY: John Wiley.

Caves, R. E. (1996). *Multinational Enterprise and Economic Analysis.* (2 ed.). Cambridge, Great Britain: Cambridge University Press.

Chang, H. J. (1995). *Transnational Corporations and Strategic Industrial Policy.* Paper presented at the WIDER Conference: Transnational Corporations and the Global Economy, Cambridge, 21-23 September.

Coase, R. H. (1937). The Nature of the Firm. *Econometrica, 4*, 386-405.

Cohen, W. M., & Levinthal, D. A. (1989). Innovation and Learning: The Two Faces of R&D. *Economic Journal, 99*, 569-596.

Crocombe, G. T., Enright, M. J., & Porter, M. E. (1991). *Upgrading New Zealand's Competitive Advantage.* Auckland: Oxford University Press in association with the New Zealand Trade Development Board.

Dunning, J. H. (1992). Multinational Enterprises and the Globalization of Innovatory Capacity. In O. Granstrand, L. Håkanson, & S. Sjölander (Eds.), *Technology Management and International Business: Internationalization of R&D and Technology* (pp. 19-52). West Sussex, England: John Wiley & Sons, Ltd.

Dunning, J. H. (1993). *Multinational Enterprises and the Global Economy.* Reading, Massachusetts: Addison-Wesley.

Dunning, J. H. (1997). Governments and Macro-Organization of Economic Activity: A Historical and Spatial Perspective. In J. H. Dunning (Ed.), *Governments, Globalization, and International Business* (pp. 31-72). New York, NY: Oxford University Press.

EC. (1997). *EUR 17639 – Second European Report on S&T Indicators 1997 - Report* . Luxembourg: Office for Official Publications of the European Communities: European Commission, Directorate-General XII: Science, Research and Development.

EITO. (1998). *European Information Technology Observatory Yearbook 1998.* Frankfurt: European Information Technology Observatory (EITO) – European Economic Interest Grouping (EEIG).

Fagerberg, J. (1996). Technology and Competitiveness. *Oxford Review of Economic Policy, 12*(3), 39-51.

Fors, G. (1996). R&D and Technology Transfer by Multinational Enterprises, *The Industrial Institute for Economic and Social Research.* Stockholm, Sweden: Stockholm School of Economics.

Fors, G. (1997). Utilization of R&D Results in the Home and Foreign Plants of Multinationals. *Journal of Industrial Economics, 45*(3), 341-358.

Fransman, M. (1997). Is National Technology Policy Obsolete in a Globalised World? The Japanese Response. In D. Archibugi & J. Michie (Eds.), *Technology, Globalisation and Economic Performance* (pp. 50-82). Cambridge, Great Britain: Cambridge University Press.

Globerman, S., Kokko, A., & Sjöholm, F. (1996). Technology Sourcing in Swedish MNEs and SMEs: Evidence from Patent Data, *Working Paper Series in Economics and Finance, Number 125.* Stockholm, Sweden: Stockholm School of Economics: The Economic Research Institute.

Granstrand, O., Håkanson, L., & Sjölander, S. (Eds.). (1992). *Technology Management and International Business: Internationalization of R&D and Technology.* West Sussex, England: John Wiley & Sons, Ltd.

Grossman, G. M., & Helpman, E. (1991). *Innovation and Growth in the Global Economy.* Cambridge, Massachusetts: MIT Press.

Haaparanta, P. (1997). Globalisoituminen ja kansalaisten hyvinvointi, *A Presentation given at the inauguration of Professors Pertti Haaparanta and Mihkel Tombak* . Helsinki, Finland: Helsinki School of Economics and Business Administration.
Also: Haaparanta, P. (1998). Globalisoituminen ja kansalaisten hyvinvointi. *Kansantaloudellinen aikakauskirja 1998:1*, pp. 109–6.

Haskel, J., & Slaughter M. (1998). *Does the Sector Bias of Skill-Based Technical Change Explain Changing Wage Inequality?.* Paper presented at the Kiel Conference on Globalization and Labor. Kiel, June 24–5, 1998.

Hatzichronoglou, T. (1996). Globalization and Competitiveness, *STI Working Papers, Number 1996/5.* Paris: Organization for Economic Co-Operation and Development: Directorate for Science, Technology and Industry.

Heilbroner, R. L., & Malone, L. J. (1986). *The Essential Adam Smith.* New York, NY: W. W. Norton & Company, Inc.

Helpman, E., & Krugman, P. R. (1985). *Market Structure and Foreign Trade.* Cambridge, Massachusetts: MIT Press.

Helpman, E., & Krugman, P. R. (1989). *Trade Policy and Market Structure.* Cambridge, Massachusetts: MIT Press.

Hernesniemi, H., Lammi, M., & Ylä-Anttila, P. (1996). *Advantage Finland: The Future of Finnish Industries.* Helsinki, Finland: Taloustieto Oy and ETLA – Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy, Sarja B 113 Series.

Hirsch, S., & Cherniawski, A. (1997). Comparative Advantage, Competitive Advantage and Foreign Direct Investment; A Conceptual Scheme and Empirical Evidence, *mimeo.* Tel Aviv, Israel: The College of Management, Academic Studies.

Hämäläinen, T. J. (1997). A Systematic Theory of Economic Competitiveness, Growth and Organization, *Draft of a Ph.D. Dissertation.* Newark, NJ: Rutgers University.

Härtel, H. H., Jungnickel, R., Keller, D., Feber, H., Borrmann, C., Winkler-Büttner, D., & Lau, D. (1996). *Grenzüberschreitende Produktion und Strukturwandel – Globalisierung der Deutschen Wirtschaft.* Baden-Baden: Nomos Verlagsgesellschaft.

IMF. (1997a). *World Capital Markets: Developments, Prospects, and Key Policy Issues.* Washington, D.C.: International Monetary Fund.

IMF. (1997b). *World Economic Outlook – Globalization: Opportunities and Challenges.* Washington, D.C.: International Monetary Fund.

Jacobs, D., & De Man, A. P. (1996). Clusters, Industrial Policy and Firm Strategy: A Menu Approach. *Technology Analysis & Strategic Management, 8*(4), 425–37.

Jones, R. W. (1971). A Three-Factor Model in Theory, Trade, and History. In J. Bhagwati & e. al. (Eds.), *Trade, Balance of Payments, and Growth* (pp. 3–21). Amsterdam: North-Holland Publishing Company.

Kaldor, N. (1978). The Effects of Devaluations on Trade in Manufactures. In N. Kaldor (Ed.), *Further Essays on Applied Economics.* London: Duckworth.

Kasvio, A. (1996). Loistava menneisyys vai menestystarinan alku – Aineksia keskusteluun Euroopan työllisyysongelmista ja pohjoismaisten hyvinvointiyhteiskuntien tulevaisuudesta, *Työraportti - Working Paper (5/1996).* Tampere, Finland: University of Tampere, Department of Sociology and Social Psychology, Laboratory of Action Research.

Kasvio, A., & Nieminen A. (1998). Globalisaatio, työpaikkakilpailu ja Suomi – Uuteen kansainväliseen strategiaan?. *Tampereen yliopiston tietoyhteiskunnan tutkimuskeskuksen työraportteja (Working Papers) 4/1998. Suomen Itsenäisyyden Juhlarahasto, Sitra No 168.*

Kinnunen, H. (1993). *Kansainvälistymispäätös ja ulkomaisen tuotannon suuntautuminen.* Helsinki, Finland: The Bank of Finland. D:78.

Korten D., (1997). *Maailma yhtiöiden vallassa.* Helsinki: Like.

Kobrin, S. J. (1997). The Architecture of Globalization: State Sovereignty in a Networked Global Economy. In J. H. Dunning (Ed.), *Governments, Globalization, and International Business* (pp. 146-171). New York, NY: Oxford University Press.

Krugman, P. R. (1991). *Geography and Trade.* Leuven: Leuven University Press.

Krugman, P. R. (1994). Competitiveness: A Dangerous Obsession. *Foreign Affairs, 72*(2), 28-44.

Krugman, P. R., & Venables, A. J. (1995). Globalization and the Inequality of Nations. *Quarterly Journal of Economics, CX*(4), 857-880.

Kuemmerle, W. (1996). The Drivers of Foreign Direct Investment into Research and Development -An Empirical Investigation, *Working Paper, Number 96-062.* Cambridge, Massachusetts: Harvard Business School, Division of Research.

Leiponen, A. (1997). Yritysten osaamisintensiivisyys ja kansainvälistyminen (The Knowledge-Intensity of a Firm and Internationalization), in Finnish. *ETLA Discussion Papers, Number 609.* Helsinki, Finland: ETLA – Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy.

Lipsey, R. G. (1997). Globalization and National Government Policies: An Economist's View. In J. H. Dunning (Ed.), *Governments, Globalization, and International Business* (pp. 73-113). New York, NY: Oxford University Press.

Luukkanen, H. (1994). Foreign Owned Manufacturing Firms and Their R&D Activity in Finland 1984–1991 (in Finnish). *VTT, Division of Technological Research, Working Papers, No. 9.* Espoo, Finland: VTT, the Technical Research Centre of Finland.

Machin, S., Ryan A. & Van Reenan J. (1996). Technology and Changes in Skill Structure: Evidence from an International Panel of Industries. *Centre for Economic Performance, Discussion Papers, No. 297.*

Markusen, J. R. (1995). The Boundaries of Multinational Enterprises and the Theory of International Trade. *Journal of Economic Perspectives, 9*(2), 169-189.

Marshall, A. (1890). *Principles of Economics.* London: Macmillan.

Ministry of Trade and Industry (1998), Yksityisten palvelujen kehittäminen: Raportti talousneuvostolle. *Monisteita 8/1998.*

Ministry of Finance (1998), *Teknologia, globalisaatio ja kilpailukyky: Arvio Suomen kilpailukyvyn vahvuuksista ja heikkouksista (Technology, Globalization, and Competitiveness: An assessment of the Strengths and Weaknesses of Finnish Competitiveness), in Finnish.*

The MIT Scenario Working Group / Laubacher, R. J., Malone, T. (1997). Two Scenarios for 21st Century Organizations: Shifting Networks of Small Firms or All-Encompassing "Virtual Countries"?, *MIT Initiative on Inventing the Organizations of the 21st Century, Working Paper, Number 21C WP #001 (http://ccs.mit.edu/21c/21CWP001.html).* Cambridge, Massachusetts: Massachusetts Institute of Technology, Sloan School of Management.

Mowery, D. C., & Oxley, J. (1997). Inward Technology Transfer and Competitiveness: The Role of National Innovation Systems. In D. Archibugi & J. Michie (Eds.), *Technology, Globalisation and Economic Performance* (pp. 138-171). Cambridge, Great Britain: Cambridge University Press.

Mundell, R. A. (1957). International Trade and Factor Mobility. *American Economic Review, 47*, 321-335.

Myllyntaus, T. (1992). Technology Transfer and the Contextual Filter in the Finnish Setting. In S. Vuori & P. Ylä-Anttila (Eds.), *Mastering Technology Diffusion - The Finnish Experience* (pp. 195-252). Helsinki, Finland: ETLA, Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy and Taloustieto Oy, Sarja B 82 Series.

Mytelka, L. K. (1994). *The Growth of Strategic Alliances: A Stock Taking.* Ottawa and Paris: Carleton University Press and LAREA/CEREM - Université Paris X.

Mäkinen, M. (1998). Suomen viennin rakennemuutos ja klustereiden vientimenestys 1990-luvulla (Structural Change of Finnish Exports and the Export Success of Industrial Clusters, In Finnish), *ETLA Discussion Papers, Number 643.* Helsinki Finland: ETLA, Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy.

NOU. (1996). I Norge – for tiden?, *Norges Offentlige Utredninger.* Oslo, Norge: Statens Forvaltningstjeneste Statens Trykning, NOU 1996:17.

OECD. (1995, 3-4 April). *Future Global Capital Shortages: Some Key Issues and Policy Recommendations.* Paper presented at the OECD Forum for the Future, Paris.

OECD. (1996a). *Globalisation of Industry: Overview and Sector Reports.* Paris: Organization for Economic Co-Operation and Development.

OECD. (1996b). *Globalization and Linkages to 2020: Challenges and Opportunities for OECD Countries* (OECD Proceedings). Paris: Organization for Economic Co-Operation and Development.

OECD. (1996c). *Technology and Industrial Performance: Technology Diffusion, Productivity, Employment and Skills, International Competitiveness.* Paris: Organization for Economic Co-Operation and Development.

OECD. (1996d). *Industrial Competitiveness* (High-Level Forum on Industrial Competitiveness). Paris: Organization for Economic Co-Operation and Development, Directorate for Science, Technology and Industry.

OECD. (1997a). *Education at a Glance: OECD Indicators – 1997.* Paris: Organization for Economic Co-Operation and Development.

OECD. (1997b). *Financial Market Trends* (67). Paris, France: Organization for Economic Co-Operation and Development.

OECD. (1997c). *Globalisation and Small and Medium Enterprises (SMEs): Synthesis Report.* (Vol. 1). Paris: Organization for Economic Co-Operation and Development.

OECD. (1997d). *Industrial Competitiveness: Benchmarking Business Environments in the Global Economy* . Paris: Organization for Economic Co-Operation and Development.

OECD. (1997e). *The OECD STAN Database 1970-1995 On Diskette.* Paris: Organization for Economic Co-Operation and Development: Economic Analysis and Statistics Division.

OECD. (1997f). *Towards a New Global Age: Challenges and Opportunities* (Policy Report). Paris: Organization for Economic Co-Operation and Development.

OECD. (1997g). *The OECD ANBERD Database 1973-1995 On Diskette.* Paris: Organization for Economic Co-Operation and Development: Economic Analysis and Statistics Division.

OECD. (1998a). *Financial Market Trends* (69). Paris: Organization for Economic Co-Operation and Development.

OECD. (1998b). *OECD Economic Surveys 1997-1998 – Finland.* Paris: Organization for Economic Co-Operation and Development.

Ohlin, B. (1933). *Interregional and International Trade.* Cambridge, Massachusetts: Harvard University Press.

Okko, P., Miettilä, A., & Hyvärinen J. (1998). *Globalisaatio ja aluerakenteen muutos.* Helsinki, Finland: The Finnish Fund for Research and Development, Sitra No 177.

Ollus M., Ranta, J., & Ylä-Anttila, P. (1998) (Eds.). *Yritysverkostot – Kilpailua tiedolla, nopeudella ja joustavuudella.* Helsinki Finland: Taloustieto Oy.

Oxelheim, L. (Ed.). (1993). *The Global Race for Foreign Direct Investment: Prospects for the Future.* Heidelberg, Germany: Springer-Verlag.

Oxelheim, L. (1996). *Financial Markets in Transition.* New York, NY: Routledge.

Pain, N., & Young, G. (1996, August). *Tax Competition and the Pattern of European Foreign Direct Investment.* Paper presented at the 52nd Congress of International Institute of Public Finance, Tel Aviv.

Pajarinen, M. (1997). Ulkomaiset suorat sijoitukset ja ulkomaalaisomistus Suomessa: Katsaus historiaan ja viimeaikaiseen kehitykseen (Inward Foreign Direct Investments and Foreign-Owned Companies in Finland: Some History and Recent Trends. In Finnish), *ETLA Discussion Papers, Number 610.* Helsinki, Finland: ETLA, Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy.

Pajarinen, M., & Ylä-Anttila, P. (1998). *Ulkomaiset yritykset Suomessa – Uhka vai uusi mahdollisuus? (Foreign Owned Firms in Finland – Threat or New Possibility?), in Finnish with English summary.* Helsinki: ETLA, Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy in association with Taloustieto Oy, Sarja B 142 Series.

Parjanne, M.-L. (1997). *Työmarkkinat muurroksessa (Labor Markets in Transition), in Finnish.* Helsinki: ETLA, Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy in association with Taloustieto Oy, Sarja B 135 Series.

Parjanne, M.-L. (1998). Teknologinen kehitys ja työllisyys: tuloksia Suomen aineistolla. *Talous & yhteiskunta, 1/1998.* Helsinki, Finland: Palkansaajien Tutkimuslaitos.

Pearce, R. D., & Singh, S. (1992). Internationalization of Research and Development. In O. Grandstrand, S. Sjölander, & L. Håkanson (Eds.), *Technology, Management and International Business: Internationalization of R&D and Technology.* Chichester: Wiley.

Pohjola, M. (1996). *Tehoton Pääoma – Uusi näkökulma taloutemme ongelmiin.* Porvoo, Finland: WSOY.

Porter, M. E. (1990a). The Competitive Advantage of Nations. *Harvard Business Review*(March-April), 73-93.

Porter, M. E. (1990b). *The Competitive Advantage of Nations.* London: The MacMillan Press Ltd.

Puhakka, M. (1994). *European Integration and Corporate Strategies, in Finnish with English summary).* Helsinki, Finland: ETLA, Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy, Sarja B 92 Series.

Pulli, M. (1998). Ulkomaalaisomistuksen lisääntyminen Suomessa (The Increased Foreign Ownership in Finnish Companies), in Finnish. *ETLA Discussion Papers, Number 608.* Helsinki, Finland: ETLA – Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy.

Raumolin, J. (1998). *EU ja globalisaatio – Reunahuomautuksia ranskalaiseen ja saksalaiseen keskusteluun.* Helsinki, Finland: The Finnish Fund for Research and Development, Sitra No 176.

Ricardo, D. (1817). *The Principles of Political Economy and Taxation.* Homewood (IL): Irwin (1963).

Rouvinen, P. (1997). Suomi – Euroopan kilpailukykyisin?, *ETLA Discussion Papers, Number 608.* Helsinki, Finland: ETLA – Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy.

Rouvinen, P. M., & Ylä-Anttila, P. (1997). Konkurrenskraften i Norden, *ETLA Discussion Papers, Number 613*. Helsinki, Finland: ETLA, Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy.

Ruane, F., & Görg, H. (1997). The Impact of Foreign Direct Investment on Sectoral Adjustment in the Irish Economy. *National Institute Economic Review, 2/97*(160), 76-86.

Samuelson, P. (1971). Ohlin Was Right. *Swedish Journal of Economics, 73*, 365-384.

Shan, W., & Song, J. (1997). Foreign Direct Investment and the Sourcing of Technological Advantages: Evidence from the Biotechnology Industry. *Journal of International Business Studies, 28*(2), 267-284.

Siebert, H. (1995). In Siebert, H. (Ed.), *Locational Competition in the World Economy*. Tubingen: J.C.B. Mohr (Paul Siebeck).

Slaughter, M., & Swagel, P. (1997), Does Globalization Lower Wages and Export Jobs?. *IMF Economic Issues, 11*. Washington D.C: International Monetary Fund.

Statistics Finland (1997). *On the Road to the Finnish Information Society*. Helsinki, Finland: Statistics Finland.

Strandell, A. (1997). Foreign-Owned Enterprises in Sweden. in Svensson, R. (1996). Foreign Affiliates of Swedish Multinational Corporations, *IUI Economic Studies 25*. Stockholm, Sweden: IUI.

Stopford, J. M. (1997). Implications for National Governments. In J. H. Dunning (Ed.), *Governments, Globalization, and International Business* (pp. 457-480). New York, NY: Oxford University Press.

Svensson, R. (1993). *Production of Foreign Affiliates: Effects on Home Country Exports and Modes of Entry*. Stockholm, Sweden: IUI.

Svensson, R. (1996). Foreign Affiliates of Swedish Multinational Corporations, *IUI Economic Studies 25*. Stockholm, Sweden: IUI.

Swedenborg, B. (1979). *The Multinational Operations of Swedish Firms: An Analysis of Determinants and Effects*. Stockholm, Sweden: IUI.

Swedenborg, B., Johansson-Grahn, G., & Kinnwall, M. (1988). *Den svenska industrins utlandsinvesteringar 1960-1986 (Foreign Investments of the Swedish Industry 1960-1986, in Swedish)*. Stockholm, Sweden: IUI.

Taniguchi, M., & West, J. (1997). On the Threshold of a Global Economy. *OECD Observer, Number 207*, 5-8.

TT. (1998). *Investment Inquiry (in Finnish)*. Helsinki, Finland.

UN. (1993). *Small and Medium-Sized Transnational Corporations: Role, Impact and Policy Implications*. New York, NY: United Nations Conference on Trade and Development (UNCTAD).

UN. (1996). *World Investment Report 1996: Investment, Trade and International Policy Arrangements*. New York and Geneva: United Nations.

UN. (1997). *World Investment Report 1997: Transnational Corporations, Market Structure and Competition Policy*. Geneva, Switzerland: United Nations.

Vartia, P., & Ylä-Anttila, P. (1996). *Kansantalous 2021 (The Finnish Economy 2021 - In Finnish)*. Helsinki Finland: ETLA, Elinkeinoelämän Tutkimuslaitos, The Research Institute of the Finnish Economy and Sitra, The Finnish National Fund for Research and Development and Taloustieto Oy, ETLA B:113 and Sitra 153.

Venables, A. J. (1996). Localization of Industry and Trade Performance. *Oxford Review of Economic Policy, 12*(3), 52-60.

WB. (1997). *Global Development Finance 1997 - Volume 1: Analysis and Summary Tables.* Washington, D.C.: The International Bank for Reconstruction and Development/The World Bank.

WDI. (1997). *World Development Indicators 1997 on CD-ROM.* Washington DC: The World Bank.

WDI. (1998). *World Development Indicators 1998 on CD-ROM.* Washington DC: The World Bank.

WEF. (1997). *The Global Competitiveness Report 1997.* Geneva, Switzerland: World Economic Forum.

Wolf, M. (Monday, 8 May, 1998). Why Liberalisation Won. *Financial Times*, Survey: The World Trade System at 50, IV.

Väyrynen, R. (1997). *Global Transformation: Economics, Politics, and Culture.* Helsinki, Finland: The Finnish Fund for Research and Development, Sitra No 161.

Väyrynen, R. (1998). *Globalisaatio – Uhka vai mahdollisuus? (in Finnish).* Helsinki, Finland: Atena Kustannus and The Finnish Fund for Research and Development, Sitra No 183.

Ylä-Anttila, P. (1997), *Globalization, Industrial networks and services.* Paper presented at the Voorburg group on services, 12th Meeting, Copenhagen, September 15–19, 1997.

Ylä-Anttila, P. (1998), Teknologia, globalisaatio ja kansallinen kilpailukyky. *Kansantaloudellinen Aikakauskirja 1/1998.*

BOXES

FIGURES

TABLES

EXECUTIVE SUMMARY

A New Era of Globalization

It has been argued that the current globalization trend is only a continuation of the developments occurring before the First World. In our opinion, however, the current stage is unique. *First*, the number of countries participating in it is larger. *Second*, globalization was not previously based on widely accepted and implemented policies towards free trade and unrestricted capital movements. *Third*, developments in information and communication technologies have opened new ways for conducting business on a world scale. Thus, by *globalization* we refer to the latest stage of internationalization that started during the 1980s; this new phase was initiated by widespread deregulation of financial markets and competitive policies as well as by advances in information and communication technology (ICT).[79]

Foreign direct investment (FDI) and multinational enterprises (MNEs) have a central role in the globalization process. MNEs already control three-fourths of world commodity trade and account for three-fourths of all industrial R&D in the OECD countries.

Finnish companies compete in global markets. So does Finland, as a nation, although in a different manner. A firm's ultimate objective is to maximize a discounted stream of profits. A nation's objective is to maximize the welfare of current and future citizens. Global competitiveness at the national level centers around the question of *how can a country be an attractive home base for MNEs' high value-added activities*.

---

[79] Globalization of businesses and rapid advances in ICTs are interrelated. On the one hand, the information and communication technologies make it possible to effectively decentralize and control the global operations of multinational enterprises (MNEs) – on the other hand, global competition is a major driving force behind technological innovation and rapid diffusion of ICT.

Global Competitiveness

Currently, most firms in the world are rooted to some national business environment. While this will continue to be the case for the majority of companies in the near future, economic power is shifting towards MNEs without clear national identities.

In the global environment, a broad range of factors has to be mobilized in order to be competitive; all of these skills may not be available locally. As the relative importance of transportation and communication costs decreases, firms spread their value-added activities across the globe to places that offer the best possible environment for a specific function. Also, shorter innovation times, faster product cycles, and escalating development costs call for globally dispersed business activities.

Traditional indicators of competitiveness, calculated by and large on a national basis, are losing their explanatory power. Thus, we have to reexamine the concept of national competitiveness. In our opinion, the *global competitiveness of a nation* can be defined as follows:

> *The ability of a nation-state to continuously attract high value-added activities of private enterprises worldwide in such a way that all factors of production are fully employed, earn high returns, and long-term external balance of the country is maintained. This is reached on a sustainable basis by offering appropriate framework conditions and sufficient pools of advanced factors of production.*

We will emphasize over and over again that firms compete in markets, and thus competitiveness is essentially a firm-level concept. As can be inferred from our definition, competitiveness at the national level is realized through firms.

World Trends in Globalization

We consider four facets of globalization: (1.) exports and imports, (2.) foreign direct investment, (3.) capital transfers, and (4.) technology transfer.

Exports

The share of world exports as a percentage of GDP has grown quite steadily in the post-war era. At the same time the world economy has expanded; thus the volume of world merchandise trade has grown by 1,500% from 1950 to 1996.

Capital Flows

The foreign exchange market is the most globalized part of world financial markets. The average daily global turnover in the foreign exchange market has grown from $200 billion in the mid-1980s to around $1.2 trillion in the mid-1990s. The average *daily* foreign exchange trading turnover is thus approximately 20% of the value of *annual* world exports of goods and services.

Global trading in equities is considerably smaller than trading on bond or foreign exchange markets: the average total daily turnover of all the world's stock exchanges in the early 1990s was only about 10–13% of average daily trading volume of government bonds. Budget deficits in many countries explain this phenomenon.

The foreign exchange market is fully globalized. Bond and derivatives markets are rapidly globalizing. The globalization of equities markets has also started to intensify during the 1990s.

Technology

Most countries in the world have significantly increased their reliance on imported technology. The United States and Sweden, among others, are important sources of this imported technology.

A vast majority of technology flows actually takes place via foreign affiliates of MNEs. Another way to transfer technology is a technology or 'strategic' alliance; 29% of all inter-company alliances are technology-based.

Foreign Direct Investment

Worldwide FDI flows set new records in 1996: inflows increased by 10% to $349 billion, while outflows rose by 2% to $347 billion. The driving forces of expanding foreign direct investment are as follows:

- *Technology*. ICT has made it possible to process and transmit huge quantities of information, as well as to manage the daily activities of a widely spread corporate network. Advances in transportation have facilitated the flow of goods and people.
- *Policies*. Trade has been liberalized in the post-war era.
- *International production*. International production has become an integral part of the world economy.

Finnish Globalization Trends

Exports

While traditional forest industry related products still dominate Finnish exports, the shift towards more knowledge intensive products has been remarkable in recent years. In the 1990s, the value of high-tech exports has surpassed the value of imports. The so-called 'high-tech' products comprised a good 6% of Finnish exports in 1990; by the mid-1990s the figure had more than doubled.[80]

Capital Flows

In the first half of the 1990s almost all of the foreign investment in Finnish securities was in bonds. Foreign investment in Finnish shares began to increase in 1993, when the remaining restrictions on foreign ownership were abolished. Since then, foreign investment in Finnish shares has increased rapidly. Currently, the values of foreigners' share and bond portfolios are nearly equal. The share of foreign ownership in the Helsinki Stock Exchange in the highest in Europe, approximately half of the total market value. Foreign investors are mainly institutional investors, such as mutual and pension funds. They typically diversify their portfolios worldwide.

Until the mid-1990s Finnish investment in foreign securities was modest. Since then, investments both in foreign bonds and equities have increased quite rapidly. Investors have mainly been financial institutions and insurance companies. However, the scale of Finnish investment in foreign securities is still quite insignificant compared to foreign investment in Finnish securities: in the beginning of 1998, the value of Finns' portfolio stock abroad was only one-seventh of the stock of foreigners' portfolio of Finnish stocks and bonds.

Technology

Internationalization of Finnish firms' R&D activities has followed the globalization trends of other functions, such as production and marketing. It is estimated that approximately one-fifth of Finnish manufacturing companies' R&D is already done abroad.

---

[80] In 1996 nearly 80% of Finnish high-tech exports originated from the telecommunications cluster.

Foreign Direct Investment

At the end of the 1970s, foreign direct investment (FDI) outflows of Finnish companies averaged less than FIM 500 million annually: mainly sales offices were established. It was not until the early 1980s that Finns started to acquire major productive assets abroad.

There are several explanations for the recent increase in *inward FDI flows*. The removal of the remaining restrictions on foreign ownership in 1993 made Finland a more potential destination for foreign firms' direct (as well as portfolio) investments. Furthermore, since the technological level of Finnish companies has improved quite rapidly, acquiring one of the existing companies has become a more attractive option. The deep recession in the early 1990s paved the way for foreign firms' to enter Finland: companies with sound business operations ran into financial difficulties and could be acquired at a reasonable price. Also, the depreciation of the Markka, Finnish membership in the EU, as well as the growth prospects of the Russian and Baltic markets have helped the matter.

There is a clear imbalance between inward and outward investment: in 1997, for example, the outward FDI stock was two times greater than the inward stock. One explanation for the imbalance is that Finnish firms have invested abroad mostly in manufacturing companies, whereas foreign companies have invested in Finland primarily in trade and services sectors. The average size of acquisitions may also have been larger in outward FDI.

The Finnish Perspective on Firm-Level Globalization

Finnish Companies Abroad

Following the surge in global foreign direct investment flows, foreign acquisitions of Finnish firms accelerated in the late 1980s. After a short break in the early 1990s, this trend of rapid globalization has continued in 1994–8.

Foreign-Owned Firms in Finland

In spring 1998 there were about 1,700 foreign-owned companies in Finland. This is less than one percent of all the firms in the country. However, the foreign-owned companies' share of value added and employment was over ten percent. This implies that foreign-owned firms are, on average, larger than Finnish-owned firms. In

fact, one-third of the 500 largest firms in Finland are controlled by foreign parent companies.

Globalization and Public Policy

Policy Guidelines

Industrial policy aims at improving framework conditions or the operational environment of firms. Direct subsidies are seen as harmful in the long run, since competition is distorted. Governments do not have superior knowledge over private firms in foreseeing the future success of businesses.

Industrial policies nevertheless have an important role to play. The main goals of the policies are, on the one hand, to ensure the efficient functioning of the market and, on the other hand, to create advanced and specialized factors of production. Industrial policies are taking a broad scope in modern policy thinking: educational, trade, energy, environmental, and competition policies overlap, to a large extent, the areas of industrial policies.

In the current situation, where countries compete for MNEs value-added activities, industrial policies are becoming competitiveness policies. Governments are aiming at creating attractive locations for internationally competitive firms by developing high level technological infrastructures and other internationally immobile (created) factors of production.

Concluding Remarks

Globalization – Just a Zero-Sum Game?

It has been argued that globalization will, among other things, increase social and economic inequality, shift economic and political power from democratically elected decision makers to MNEs, and put downward pressure on hourly wages in the industrialized countries as competition from third world countries tightens. Many observers make the pessimistic conclusion that, as a consequence, worldwide welfare deteriorates and a handful of large companies will rule the world (see, e.g., Korten, 1997).

Regardless of whether one accepts the pessimistic scenario or not, "The general consensus is that the process of globalisation of economic activity is irreversible." (OECD, 1997c, p. 27). If we try

to isolate ourselves from worldwide trends and their effects, the consequences will almost surely be detrimental.

In reality, global annual GDP continues to grow; freer trade and market integration has generally improved welfare. While the benefits, in terms of faster economic growth for instance, are unevenly distributed across countries, there is little evidence on the clear adverse effects of globalization (see Bhagwati, 1998).

This is not to say that there would not have been profound, and sometimes unwelcome, labor market changes among the industrialized countries. Labor demand has shifted towards 'high skill' professions, which is also reflected in relative wages; since the 1970s real earnings of low skill workers have in fact *de*creased (for U.S. evidence see Slaughter & Swagel, 1997; Haskel & Slaughter, 1998). In Europe the changing labor demands have been manifested by the high unemployment rates and increased income inequality[81] among low-skill workers.

We argue that domestic factors explain observed problems within a country much more powerfully than global ones. We have also noted that *a priori* one should expect to gain rather than to lose as a consequence of globalization. Fears of a crumbling domestic capital stock, job loss, and a deteriorating standard of living are perhaps exaggerated. Furthermore, we are in control here: "Factor employment and hence job creation, and factor income and hence living standard levels, generated by domestic business sectors are determined by firms' competitive achievements." (OECD, 1996d, p. 13).

Cross-Border Capital Flows, MNEs, and Employment – Are Jobs Being Exported?

Still-fragmented evidence would seem to suggest that outward foreign direct investment promotes activities in the home base. At least in the Finnish case the effects of globalization have been positive. It seems, however, that the complementarity of foreign and domestic investment is becoming less obvious. Cross-border horizontal expansion has led to a situation where intra-firm plants in various countries compete rather than cooperate with each other. In a multiplant firm production can easily be shifted from one country to another as relative costs change. Thus, issues of relative

[81] With the exception of the U.K.

costs cannot be ignored even though technology plays a major role in the globalization process.

Foreign Ownership in Finland – Selling the Crown Jewels & Losing Control?

As the analysis of investment stocks above reveals, Finland has attracted relatively little foreign investments compared to our investment abroad. In fact, the outward stock is over twice as high as the inward one. Despite the growth of inward investment in the 1990s, the imbalance between the two stocks continues to grow, i.e., the outward investments of Finnish companies have expanded even more rapidly. Yet it should be noted that already one-third of the top 500 companies are foreign controlled. Large and/or technology-intensive companies have attracted foreign capital the most.

Portfolio investments in Finland have exploded in the 1990s. Currently, foreign parties hold half of the market value at the Helsinki Stock Exchange.

Cross-border capital flows have aroused discussion and fears about the diminishing national control. The research suggests, however, that the free flow of capital promotes economic efficiency and functioning of capital markets. Thus the effects are mainly beneficial.

Despite the many benefits of cross-border capital flows, there are also some potential drawbacks. On the policy front, the range of possible tools has narrowed considerably. In part, 'market forces' have taken over policy-making, i.e., in the making of public policy the consequences on the capital market have to be kept in mind. Furthermore, a high degree of foreign ownership may decrease the risk tolerance and increase volatility of a small open economy.

Finland in Global Competition – Strengths and Weaknesses

Finnish specialization is clearly shifting towards knowledge-intensive high-tech branches, away from the previous raw material, energy, and capital-intensive structure (Mäkinen, 1998).

In contrast to the trend in many other industrialized countries, Finnish gross domestic expenditure on R&D has grown throughout the 1990s. In particular, telecommunications technology has become one of the Finnish 'centers of excellence'.

Young generations in Finland are highly educated and the share of university graduates in science-related fields is quite high.

In Finland, it has been mainly domestic R&D, rather than imported technology, that has fuelled the growth of high-tech exports.

Some of the Finnish weaknesses in global competition are high income taxation, the low educational level of older generations, and high unemployment.

Highly progressive taxation and extensive unemployment benefits have reduced incentives to seek employment. Some unemployment has also been caused by technological development: while certain skills are in high demand, others have become obsolete. Low-skill employment in industry has decreased severely in the past few decades. In other industrialized countries, unlike in Finland, the service sector has absorbed a significant portion of vacant labor.

A Look Ahead

The competitive advantage of the Finnish economy and firms in it has changed significantly. The industrial structure has changed from slow growth industries towards knowledge-driven industries and industrial clusters. This has made the economy less dependent on the volatile world paper and basic metal markets.

The sensitivity of the Finnish economy to world market fluctuations has also been reduced as a consequence of the rapid internationalization of business, thanks to worldwide diversification of both exports and production.

From the perspective of a small open economy, the answer to the relative disadvantage of size is to specialize in niches and company networks; this is particularly true in the case of small- and medium-sized enterprises.

With its current structure, Finland is relatively well positioned to respond to the challenges of globalization. Recovery from the recession of the early 1990s showed that, despite doubts, there is sufficient macro-flexibility in labor markets and the economy as a whole (OECD, 1998b; Kiander & Vartia, 1998). The free movement of capital and EMU will, however, put the recently discovered flexibility to a new test. At that time, flexibility will be needed at a much more micro level. Individuals and firms must be ready to adapt swiftly to changes in their operating environment. Even if labor migration were to remain limited, rapid capital movements en-

sure that labor demand is responsive to changes in relative costs. Thus, curbing inflationary pressures remains one the main goals of monetary and economic policy.

YHTEENVETO

Tausta: globalisaatio ja Suomen talous

Raportissa käsitellään globalisaatiota talouden ja yritysten kansainvälistymisen näkökulmasta. Globalisaatiolla tarkoitetaan tässä yhteydessä markkinoiden – hyödyke-, pääoma-, teknologia- ja työmarkkinoiden – maailmanlaajuista yhdentymistä. Kansalliset markkinat ovat avautuneet ja tavaroiden lisäksi myös palvelut sekä tuotannontekijät liikkuvat aiempaa vapaammin. Yritykset saavat yhä suuremman osan myyntituloistaan ulkomailta: kymmenen suurimman suomalaisyrityksen yhteenlasketusta liikevaihdosta noin 90 % on vientiä tai ulkomaisten tytäryritysten liikevaihtoa, yli puolet niiden henkilökunnasta työskentelee ulkomaisissa tytäryrityksissä. Talouden ja yritysten kansainvälistyminen on selvästi saavuttanut uuden vaiheen.

Tutkimuksessa tarkastellaan seuraavia kysymyksiä: Miten meneillään oleva globalisaatiokehitys poikkeaa maailmantalouden aiemmasta kansainvälistymisestä? Millaisia ovat suomalaisten yritysten kansainvälistymisen vaikutukset talouden tulevan kasvun ja työllisyyden kannalta? Ovatko sijoitukset ulkomaille syrjäyttäneet vai täydentäneet kotimaisia investointeja ja työllisyyttä? Miten yritysten kansainvälistyminen on vaikuttanut ja vaikuttaa elinkeinorakenteeseen ja työvoiman kysynnän rakenteeseen? Miten ulkomaisten yritysten investoinnit Suomeen ja ulkomaalaisomistuksen lisääntyminen vaikuttavat Suomen talouteen? Siirtyykö suomalaista ydinosaamista ulkomaille vai hyötyvätkö suomalaiset yritykset ulkomaisesta omistuksesta? Mikä on kansallisen elinkeinopolitiikan rooli globalisoituvassa taloudessa?

Mitä uutta globalisaatiossa?

Meneillään oleva talouden globalisaatiokehitys alkoi kansainvälisen kaupan vapautumisena ja kasvuna 1960- ja 1970-luvuilla ja voimistui 1980-luvun jälkipuoliskolta alkaen pääomaliikkeiden vapauttamisen vaikutuksesta. Vaikka maailmantalous oli hyvin pitkälle integroitunut jo kuluvan vuosisadan alussa ”ensimmäisen globalisaatio-

aallon" (noin vuodesta 1870 ensimmäiseen maailmansotaan) jälkeen, uudessa globalisaatiokehityksessä on selkeästi uusia piirteitä. Tämän vuosisadan alussa vain tärkeimmät teollistuneet maat vapauttivat talouttaan ja olivat mukana kansainvälisessä kaupassa ja investoinneissa, nyt globalisaatio koskettaa käytännöllisesti katsoen koko maailmaa. Muuttoliikkeet ovat olleet nykyisessä globalisaatioaallossa tuntuvasti vähäisempiä kuin ensimmäisessä, sen sijaan informaatio- ja pääomavirtojen kasvu on ollut voimakasta. Tärkeä ero on kuljetus- ja ennen kaikkea tietoliikennekustannusten raju alentuminen teknologisen kehityksen seurauksena. Teknologinen kehitys onkin tuonut yritystoimintaan uuden logiikan: tuotannon maailmanlaajuinen hajauttaminen on mahdollista ja tehokasta.

Yritystoiminnan kansainvälistyminen ja teknologinen muutos kietoutuvat toisiinsa. Yhtäältä tieto- ja viestintätekniikka tekee globaalin yritystoiminnan mahdolliseksi. Toisaalta globaalien markkinoiden syntyminen ja kansainvälisen kilpailun lisääntyminen ajavat yrityksiä uusiin teknisiin innovaatioihin ja edistävät uuden teknologian leviämistä. Kansainvälistymiseen vie väistämättä myös erikoistumisen logiikka. Yritykset hakevat kilpailuetuja yhä kapeammista tuoteryhmistä. Näille voi syntyä riittävän laajat markkinat vain maailmanlaajuisella tasolla.

Monikansallisista yrityksistä on tullut maailmantalouden muutoksen ydin. Kansainvälisesti toimivat suuryritykset olivat integroimassa maailmantaloutta jo kauan ennen kuin Euroopan meneillään oleva integraatiokehitys alkoi tai poliittisella tasolla oli tehty päätöksiä Amerikan tai Aasian taloudellisista yhteenliittymistä. Monikansalliset yritykset vaikuttavat suoraan paitsi investointivirtojen kasvuun ja sitä kautta yritysrakenteisiin myös maailmankaupan lisääntymiseen ja teknologian siirtoon.

Globalisaatio – nollasummapeliä?

Talouksien globalisoituminen ja monikansallisten yritysten toiminta ovat muuttamassa taloudellisia rakenteita nopeammin kuin esimerkiksi Euroopan integraatiokehitys. Globalisaatiosta käydyssä keskustelussa on korostettu globalisaation uhkia ja haittoja: taloudellisen eriarvoisuuden lisääntymistä, monikansallisten yritysten vallan kasvua ja lisääntyvää kilpailua matalan kustannustason maista. Monet päätyvät pessimistiseen näkemykseen, jonka mukaan elintaso olisi maailmanlaajuisesti alentumassa globalisaation seurauksena ja päätöksenteko luisumassa ylikansallisille yrityksille.

Keskustelua globalisaatiosta on viime vuosina käyty paljolti teollisuusmaiden näkökulmasta. Keskeinen väite on ollut, että teollisuusmaiden sisäiset tuloerot ovat kasvamassa, kun markkinoiden integroituminen johtaa siihen, että alhaista ammattitaitoa vaativien tuotteiden tuonti lisääntyy matalan kustannustason maista. Tämän seurauksena tuotanto teollisuusmaissa supistuu ja elintasoerot kasvavat. Samaan aikaan on väitetty monikansallisten yritysten toiminnan syrjäyttävän tuotantoa kehitysmaissa ja hidastavan niiden kasvua. Väitteet ovat ristiriidassa keskenään eikä kumpikaan niistä saa merkittävää tukea tutkimustuloksista.

Tosiasiassa maailman yhteenlaskettu kokonaistuotanto on jatkanut kasvuaan. Kaupan vapautuminen ja markkinoiden integroituminen ovat pääsääntöisesti lisänneet taloudellista kasvua ja hyvinvointia, kuten kaupan vapauttaminen ensimmäisenkin globalisaatioaallon aikana. Maailmantalouden kokonaishyvinvointi on lisääntynyt, vaikka maiden välillä on tietenkin ollut kasvueroja.

Teollisuusmaiden työmarkkinoilla on kyllä tapahtunut merkittäviä muutoksia samaan aikaan, kun maailmantalous on globalisoitunut. Työvoiman kysyntä on kohdistunut suurimmaksi osaksi hyvinkoulutettuihin. Yhdysvalloissa ammattitaitoisten työntekijöiden tulot suhteessa vähän koulutettuihin ovat nousseet voimakkaasti viimeisten parin kymmenen vuoden aikana. 1970-luvulta lähtien vähän koulutettujen reaaliansiot ovat itse asiassa alentuneet. Euroopassa työvoiman kysynnän rakenteen muutokset ovat heijastuneet ennen muuta heikosti koulutettujen työttömyyden nopeana kasvuna, tuloerojen lisääntyminen on ollut vähäistä Iso-Britanniaa lukuun ottamatta. Keskeinen kysymys on: *mikä merkitys globalisaatiolla on työmarkkinoilla tapahtuneissa muutoksissa ja mikä rooli on teknologisella kehityksellä?*

Valtaosa tutkimustuloksista osoittaa, että teknologinen kehitys selittää suurimman osan työvoiman kysynnän rakenteessa ja tuloeroissa tapahtuneista muutoksista. Tuontipanosten lisääntynyt osuus (tuonti alemman kustannustason maista, *outsourcing*) selittää näistä vain murto-osan. Suuri osa työvoiman kysynnän muutoksista osaamista ja koulutusta vaativaan suuntaan on tapahtunut toimialojen sisällä. Kyse on ollut ns. *skill-biased technical change*-ilmiöstä: hyvinkoulutettujen työntekijöiden kysyntä suhteessa vähän koulutettuihin kasvaa, vaikka heidän suhteellinen palkkansa nousee.

Vaikka siis vain pienen osan työllisyysmuutoksista ja tulonjaon epätasaisuuden kasvusta voidaan arvioida aiheutuneen globalisaa-

tiosta, on globalisaatioprosessissa voittajia ja häviäjiä. Markkinoiden avautuminen ja kilpailun lisääntymien aiemmin suojatuilla kotimarkkinoilla on aiheuttanut monissa maissa merkittäviä sopeutumisongelmia ja -kustannuksia. Monilla aloilla yritysten voitot ovat alentuneet ja työllisyys pienentynyt. Suomen ja muiden pohjoismaiden rahoitussektorit, maatalous, elintarviketeollisuus sekä monet palvelutoimialat ovat tästä oivallisia esimerkkejä. Kuitenkin pitkän aikavälin kasvun ja hyvinvoinnin kannalta kilpailun ja tehokkuuden lisääntyminen ovat yksinomaan myönteisiä.

On kuitenkin selvää, että nopea teknologinen kehitys ja globalisaatio kytkeytyvät toisiinsa. Kansainvälisen kaupan lisääntyminen, suorat sijoitukset sekä informaatio- ja viestintäjärjestelmien integroituminen nopeuttavat uusien teknologioiden leviämistä. Kansainvälisen kilpailun lisääntyminen ajaa yrityksiä yhä uusiin innovaatioihin.

Suomi on tästä erityisen hyvä esimerkki. Globaalissa kilpailussa yritykset ovat valinneet selkeän osaamisstrategian, julkinen sektori on lisännyt voimakkaasti omia tutkimus- ja koulutuspanostuksiaan. Globalisaatiokehitys on nopeuttanut teknologista muutosta. Kansainvälisessä työnjaossa Suomi on alkanut voimakkaasti erikoistua osaamisintensiivisiin hyödykkeisiin.

Suomi on siis valinnut selkeän osaamisstrategian globaalissa maailmantaloudessa. Elinkeinopolitiikka pyrkii tekemään Suomesta houkuttelevan sijaintipaikan erityisesti korkean teknologian yrityksille. Samaa strategiaa pyrkivät noudattamaan monet muutkin maat: yritysten investoinneista ja korkeasti koulutetusta työvoimasta käydään entistä kiivaampaa kilpailua. Kyse ei ole vain yritysten kilpailusta ja kilpailukyvystä, vaan myös kansantalouksien. Kansallisesta elinkeinopolitiikasta on tullut kilpailukykypolitiikkaa.

Suomalaisten yritysten toiminta kansainvälistyy – siirtyvätkö työpaikat ulkomaille?

Suomalaisten yritysten kansainvälistyminen alkoi muihin pieniin teollisuusmaihin verrattuna suhteellisen myöhään, mutta on edennyt maailmanlaajuista suorien sijoitusten kasvua seuraten viimeisten 10-15 vuoden aikana sitäkin nopeammin. Nykyisin suomalaiset suuret teollisuusyritykset ovat kansainvälisessä vertailussa hyvin pitkälle kansainvälistyneitä: noin puolet 30 suurimman teollisuusyrityksen henkilöstöstä toimii ulkomailla. Vaikka valtaosa, noin 70 %, suomalaisyritysten ulkomaisista investoinneista on suuntautunut Eu-

rooppaan, lähes kaikkien suuryritysten strategiat ovat globaaleja. Viime vuosina erityisesti Aasian osuus investoinneista on kasvanut. Uusi piirre on myös se, että suuryrityksiä seuraten pienten ja keskisuurten yritysten kansainvälistymien on voimistunut. Globaalien tuotantoverkostojen yleistyminen erityisesti elektroniikkateollisuudessa ja muilla nopean muutoksen aloilla lisää alihankintaan ja sopimusvalmistukseen keskittyneiden yritysten kansainvälistymistä.

Suomalaisyritysten kansainvälistymisen motiivit ovat olleet samanlaisia kuin muullakin teollisuusmaissa: erikoistumisen välttämättömyys ja pienet kotimarkkinat, tarve päästä lähelle asiakkaita sekä pyrkimys hyödyntää erityisosaamiseen liittyviä skaalaetuja. Kansainvälistymiseen ovat vaikuttaneet yritysten teknologiaintensiivisyys ja kohdemarkkinoiden koko. Mitä enemmän yrityksillä on koulutukseen ja teknologiaan perustuvaa erityisosaamista, sitä todennäköisemmin ne kansainvälistyvät. Kustannusvetoinen kansainvälistyminen selittää vain suhteellisen pienen osan yritysten ulkomaaninvestoinneista ja se on koskenut vain muutamia toimialoja, kuten tekstiili- ja vaatetusteollisuutta.

Miten investoinnit ulkomaille ovat vaikuttaneet kotimaan talouden kasvuun, rakenteeseen ja kotimaiseen työllisyyteen? Ovatko suorat sijoitukset ulkomaille kotimaisia investointeja korvaavia vai niitä täydentäviä? Kuten valtaosa ulkomaisesta tutkimuksesta, myös suomalaisia yrityksiä koskeva tutkimus osoittaa, että ulkomaaninvestoinnit ovat suurelta osin kotimaisia täydentäviä. Yritysten ulkomaiset yksiköt ovat pääosin vahvistaneet niiden kotimaan toimintoja. Suomalaisten monikansallisten yritysten investoinnit ulkomaille ovat kohdistuneet nimenomaan tuotantoon ja markkinointiin, sen sijaan pääkonttoritoiminnot ja T&K-toiminta ovat kansainvälistyneet tuntuvasti vähemmän. Pääosa matalan kustannustason maihin - kuten Itä-Euroopan entisiin sosialistimaihin - suuntautuneista investoinneistakin näyttää vaikuttaneen niin, että kotimaisen työllisyyden vähentyminen alhaisen osaamistason aloilla on hidastunut. Ulkomaaninvestoinnit ovat säilyttäneet ainakin osan työpaikoista Suomessa.

Ulkomaille suuntautuneiden investointien vaikutukset kotimaan talouteen ovat siis viimeisten 15 vuoden aikana olleet pääosin myönteisiä. Tilanne näyttää kuitenkin 1990-luvulla sillä tavoin muuttuneen, että aiempi ulko- ja kotimaisten investointien toisiaan täydentävyys on löystynyt. Ulkomainen ja kotimainen tuotanto ovat osittain alkaneet kilpailla keskenään. Yritysten horisontaalinen kan-

sainvälistyminen on johtanut siihen, että vientimarkkinoilla ulkomaan ja kotimaan yksiköt usein kilpailevat keskenään, eivät välttämättä täydennä toistensa toimintaa. Pitkälle kansainvälistyneissä ja useissa maissa toimivissa monikansallisissa yrityksissä osa tuotannosta voi siirtyä maasta toiseen esimerkiksi kulloisenkin kustannustilanteen mukaan. Kun aiemmin on ollut verraten helppo arvioida kumpi kansainvälistymisen perusselityksistä - kustannusvetoinen vai teknologiavetoinen kansainvälistyminen - on ollut ulkomaisen tuotannonlisäyksen taustalla, nyt näyttää siltä että molemmat ovat yhtä aikaa voimassa. Suomalaisyritykset kansainvälistyvät edelleenkin pääosin erityisosaamisensa varassa, mutta myös kustannustekijät otetaan entistä enemmän huomioon korkean teknologian yrityksissäkin. Informaatio- ja viestintäteknologian kehitys ja rajusti alentuneet kuljetus- ja tietoliikennekustannukset tekevät mahdolliseksi sen, että pienetkin erot tuotantokustannuksissa eri sijaintipaikkojen välillä voidaan hyödyntää.

Eurooppaan on syntymässä nopeassa tahdissa lisää uudenlaisia 'euroyrityksiä', jotka eivät perustu välttämättä yritysostoihin, vaan yritysten välisiin sopimuksiin. Metsäteollisuus ja autoteollisuus ovat tästä hyviä esimerkkejä. Logistiikkatoimintoja ja jakelukanavia yhdistämällä voidaan saavuttaa merkittäviä kustannussäästöjä. Omistuksellinen keskittyminen monilla aloilla niin Euroopassa kuin maailmanlaajuisestikin jatkuu. Samaan aikaan etenee tuotannon hajauttaminen ja globaali verkottaminen. Maiden ja alueiden välinen kilpailu investoinneista lisääntyy.

Ulkomaiset yritykset Suomessa – viedäänkö ydinosaaminen?

Ulkomaiset yritykset ovat perinteisesti investoineet Suomeen hyvin vähän. Suomesta ulkomaille suuntautuneiden investointien kanta on yli kaksinkertainen verrattuna ulkomaisten yritysten Suomeen suuntautuneisiin investointeihin. Vaikka investoinnit Suomeen ovat viime vuosina kasvaneet, epätasapaino on 1990-luvullakin muutamaa poikkeusvuotta lukuun ottamatta vain kasvanut: suomalaisyritysten investoinnit ulkomaille ovat lisääntyneet vieläkin nopeammin kuin investoinnit Suomeen. Kuitenkin Suomen 500 suurimmasta yrityksestä jo noin kolmannes on ulkomaisessa omistuksessa. Lisäksi ulkomaalaiset ovat investoineet keskimääräistä suurempiin ja keskimääräistä teknologiaintensiivisempiin yrityksiin.

Suoria sijoituksia tuntuvasti nopeammin ovat 1990-luvulla kasvaneet portfoliosijoitukset Suomeen. Helsingin pörssissä noteerat-

tujen suomalaisyritysten osakkeiden arvosta noin puolet on ulkomaalaisilla. Tämä on Euroopan korkeimpia lukuja.

Ulkomaisten sijoitusten lisääntyminen on herättänyt keskustelua ja pelkojakin kansallisen vaikutusvallan vähentymisestä. Tutkimukset kuitenkin osoittavat, että sekä portfoliosijoituksilla että suorilla sijoituksilla on ollut pääosin myönteinen vaikutus kansantalouteen. Pääomamarkkinoiden kansainvälistyminen ja vapautuminen ovat lisänneet talouden tehokkuutta. Globaalit markkinat tarjoavat valtavan rahoituslähteen kotimaisille rahoituksen tarvitsijoille. Ulkomaalaisomistuksen lisääntyminen pörssissä 1990-luvulla on lisännyt osakemarkkinoiden tehokkuutta ja kasvattanut likviditeettiä. Suomalaisyritysten mahdollisuudet hankkia pääomia ovat tuntuvasti kasvaneet. Voidaan väittää, että ulkomaisen pääoman kasvu Suomen osakemarkkinoilla tuki merkittävällä tavalla talouden toipumista lamasta.

Suorien sijoitusten kautta ulkomaalaisomistukseen siirtyneet yritykset ovat menestyneet 1990-luvulla paremmin kuin suomalaisomisteiset. Ulkomaalaiset ovat hankkineet pääoman tuotoltaan keskimääräistä parempia yrityksiä ja yritysten kannattavuus on omistusvaihdoksen jälkeen edelleen parantunut. Suorat sijoitukset näyttävät selvästi lisänneen talouden tehokkuutta. Samanlaisia tuloksia on saatu myös muista maista.

Ulkomaalaisomisteisia teollisuusyrityksiä voi tiivistäen luonnehtia seuraavasti: ne kasvavat keskimääräistä nopeammin, niiden pääoman tuotto on keskimääräistä korkeampi, ne ovat voimakkaasti vientisuuntautuneita ja toimivat keskimääräistä korkeamman teknologian aloilla. Yritystason tutkimukset viittaavat siihen, että yksi merkittävä ulkomaalaisomistuksen myönteinen vaikutus on ollut laajempien kansainvälisten markkinointikanavien ja jakeluteiden avautuminen. Suomessa kehitetylle teknologialle on avautunut uusia kansainvälisiä markkinoita.

Pääomaliikkeiden vapautumiseen ja ulkomaalaisomistuksen lisääntymiseen liittyy luonnollisesti myös ongelmia. Vapaiden pääomaliikkeiden maailmassa kansallisen talouspolitiikan mahdollisuudet ovat merkittävästi kaventuneet, pääomaliikkeet ohjaavat talouspolitiikkaa. Laaja ulkomaalaisomistus pörssiyhtiöissä saattaa lisätä kriisiherkkyyttä pienillä kansallisilla osakemarkkinoilla, mikäli sijoitukset ovat hyvin lyhytaikaisia.

Suomessa pääomaliikkeitä vapautettiin - kuten muissakin pohjoismaissa - verraten myöhään 1980-lopulla. Ulkomaalaisomistusta koskevat rajoitukset purettiin lopullisesti 1993. On väitetty, että Pohjoismaiden kriisit rahoitussektorilla 1990-luvulla ja siten osittain myös talouden taantuma johtui pääomaliikkeiden hitaasta ja sektoreittain epätasaisesta vapauttamisesta: nopeampi ja johdonmukaisempi liberalisointi olisi johtanut parempaan lopputulokseen. Tämän näkemyksen mukaan 1990-luvun alkupuolen ja puolivälin ongelmat heijastavat paljolti sopeutumiskustannuksia, joiden vaikutukset ovat häviämässä. On toisaalta selvää, että rahoitusmarkkinoiden integroituminen on edennyt pitkälle ja kansainväliset häiriöt heijastuvat entistä nopeammin kansallisiin talouksiin.

Suomi globaalissa kilpailussa – vahvuudet ja heikkoudet

Suomi on globaalissa kilpailussa nopeasti erikoistumassa korkeaa teknologiaa vaativille aloille. Suomen vienti on selkeästi irtautumassa raaka-aine-, pääoma- ja energiavaltaisesta rakenteesta ja muuttumassa tieto- ja osaamisintensiiviseen suuntaan. Muutos on erityisesti lamavuosien jälkeen ollut hyvin nopeaa. Samaan aikaan kun elektroniikkateollisuus on kasvanut hyvin voimakkaasti, myös perinteiset vahvat teolliset klusterit - metsä-, perusmetalli- ja energiateknologian klusterit - ovat muuttuneet entistä enemmän teknologiaan ja osaamiseen perustuviksi.

T&K-panos suhteessa bruttokansantuotteeseen on kasvanut nopeasti koko 1990-luvun ajan, samaan aikaan kun se useimmissa muissa teollisuusmaissa on alentunut. Muutamassa vuosikymmenessä Suomi on ohittanut teknologisen kehityksen kärkimaista Saksan, Japanin ja Yhdysvallat. Suomen erityiseksi vahvuusalueeksi on noussut tieto- ja viestintäteknologia. Viennissään Suomi on yhdessä Ruotsin kanssa suhteellisesti enemmän kuin mikään muu maa erikoistunut telekommunikaatiolaitteisiin. Nuorten ikäluokkien koulutustaso on Suomessa OECD-maiden korkeimpia. Tekniikan ja luonnontieteiden korkeakoulututkintojen määrä suhteessa työikäiseen väestöön on niin ikään maailman huippua.

Panostukset tutkimukseen ja koulutukseen ovat lisääntyneet erityisesti 1980-luvulta alkaen. Ne näkyvät myös nopeasti muuttuneena viennin rakenteena: korkean teknologian tuotteiden vienti ylittää selvästi niiden tuonnin ja niiden osuus kokonaisviennistä on kasvanut nopeasti.

Vienti perustuu pääosin Suomessa kehitettyyn teknologiaan, ulkomaisten teknologiayritysten rooli on ollut verraten pieni. Tässä mielessä Suomi on valinnut selvästi erilaisen strategian kuin esimerkiksi Irlanti, jonka talous perustuu pitkälti ulkomaisiin sijoituksiin ja teknologiaan. Irlannissa teollisuuden suhteellinen tutkimuspanos on samaa luokkaa kuin vaikkapa Espanjassa, mutta se on yksi merkittävimpiä korkeateknologian tuotteiden viejiä maailmassa. Tämä perustuu lähes yksinomaan ulkomaalaisomisteisten yritysten vientiin.

Ruotsi edustaa toista ääripäätä: tutkimuspanos on korkea, mutta huipputeknologian tuotteiden vientiosuus verraten matala. Selitys on osittain yritysten kansainvälistymisessä: ruotsalaisyritysten tutkimustoiminta on edelleen pääosin kotimaassa, mutta sen tuloksista suuri osa hyödynnetään ulkomailla sijaitsevissa tuotantoyksiköissä. Suomen teollisuudessa tutkimusintensiteetin ja viennin rakenteen yhteys näyttää olevan samanlainen kuin teollisuusmaissa keskimäärin.

Suomen heikkouksia ja ongelmia globaalissa kilpailussa ovat selkeästi korkea veroaste, vanhempien ikäluokkien heikohko koulutustaso ja korkea työttömyys. Työttömyys liittyy ainakin osittain sekä korkeaan verokiilaan että osaamisstrategian kääntöpuoleen: samaan aikaan kun työllisyys on kasvanut korkeaa ammattitaitoa vaativilla, korkean teknologian ja korkean palkkatason aloilla, se on dramaattisesti alentunut matalan koulutustason aloilla. Tilanne on sama kaikissa teollisuusmaissa, mutta Suomessa tuotanto näyttää jakautuneen poikkeuksellisen jyrkästi korkean teknologian kasvualoihin ja matalan teknologian hitaan kasvun aloihin. Erityisesti yksityisen palvelusektorin kasvu on ollut Suomessa tuntuvasti hitaampaa kuin muissa teollisuusmaissa.

Tulevaisuus

Suomen talouden asema maailmantaloudessa on muuttunut. Tuotannon ja viennin rakenne ovat 1990-luvun aikana merkittävästi monipuolistuneet. Tämä on vähentänyt talouden riippuvuutta voimakkaasti heilahtelevista paperi- ja perusmetalliteollisuuden vientimarkkinoista. Sähkö- ja elektroniikkateollisuuden viennin osuus kokonaisviennistä on kasvanut 1990-luvun aikana runsaasta kymmenestä prosentista yli neljännekseen, eli suuremmaksi kuin vientiä pitkään hallinneen paperiteollisuuden osuus. Lähinnä tietoliikenne-elektroniikan voimakkaan kasvun seurauksena Korkean teknologian vienti ylittää tuonnin. Tutkimusintensiteetti – tutkimus- ja kehitys-

menojen suhde bruttokansantuotteeseen – on 1990-luvulla kasvanut maailman toiseksi korkeimmaksi. Modernin tieto- ja viestintäteknologian tuottajana ja käyttäjänä Suomi kuuluu maailman kärkijoukkoon. Tieto- ja viestintäklusteri on yksi nopeimmin kasvavista sektoreista sekä Suomessa että kansainvälisesti.

Tuotantorakenteen muutoksen ohella alttiutta maailmantalouden häiriöille on vähentänyt myös yritysten kansainvälistyminen: suuryritykset eivät ole yhtä haavoittuvia kuin ennen, kun vientiä ja tuotantoa on hajautettu maailmanlaajuisesti. Myös pitkän aikavälin kasvupotentiaali on lisääntynyt. Kun Suomi oli aiemmin suurelta osin erikoistunut hitaasti kasvaville tuotealueille ja markkinoille, joiden kysyntä- ja hintavaihtelut olivat ajoittain hyvin suuria, se on viime vuosina lisännyt voimakkaasti erikoistumistaan nopean kasvun aloille.

Samaan aikaan kansallisen talouspolitiikan mahdollisuudet reagoida talouden vaihteluihin ovat tuntuvasti kaventuneet pääomaliikkeiden vapautumisen sekä EU- ja EMU-jäsenyyksien seurauksena. Aiempaa mahdollisuutta sopeutua valuuttakurssipolitiikalla maailmantalouden häiriöihin ei ole lainkaan. Tuotantorakenteen muutoksen vuoksi tällainen sopeutumistarve on kuitenkin merkittävästi pienentynyt. Samalla jäsenyys EMUssa vähentää tuntuvasti kansainvälisten rahoitus- ja valuuttamarkkinoiden kautta tulevia vaikutuksia suhteessa niihin pieniin maihin, jotka jäävät EMU-alueen ulkopuolelle. Kansallisen politiikan merkitys ei kuitenkaan ole hävinnyt, sen painopiste on vain siirtynyt pitkän aikavälin elinkeinopolitiikan suuntaan.

On todennäköistä, että maailman rahoitus- ja valuuttamarkkinoiden lyhyen aikavälin heilahtelut jatkuvat tulevaisuudessakin voimakkaina, osin jopa suurempina kuin viime vuosikymmeninä. Ne myös siirtyvät maiden ja alueiden välillä entistä nopeammin. Samalla maailmantalouden pitkään jatkuvan voimakkaan kasvun edellytykset ovat edelleen vahvistumassa. Tuottavuuden ja tuotannon kasvu nopeutuvat, kun tieto- ja viestintäteknologiaa hyödynnetään yhä uusilla toimialoilla. Yritysten globaali kilpailu lisää tuottavuutta ja tehokkuutta monilla aloilla, jotka aiemmin olivat suojattuja globaalilta kilpailulta. Tätä osoittaa Suomenkin esimerkki. Nopeimman kasvun ja suurimman muutoksen aloja ovat telekommunikaatio ja tietotekniikka, rahoitus ja vakuutus, kauppa sekä joukkoviestintä. Tieto- ja viestintäteknologiaan perustuvilla aloilla Eurooppa on ollut selkeästi Yhdysvaltojen jäljessä, lukuun ottamatta Pohjoismaita, joissa erityi-

sesti matkaviestintä ja siihen liittyvä teknologia on kehittynyt huomattavasti pidemmälle kuin Yhdysvalloissa. Kaikilla tieto- ja viestintäteknologiaan perustuvilla aloilla vaaditaan kuitenkin tulevaisuudessa investointeja, jotka ovat mahdollisia vain suurille yrityksille ja kansantalouksille.

Ratkaisuna voi olla voimakas erikoistuminen ja verkostomainen toiminta: ne tarjoavat aivan uusia mahdollisuuksia erityisesti osaamisintensiivisillä aloilla myös pienille maille ja pk-yrityksille. Suomen ja Ruotsin telekommunikaatiosektorit ovat tästä oivallisia esimerkkejä. Kansainvälisillä markkinoilla Suomi ja Ruotsi ovat kaikista teollisuusmaista voimakkaimmin erikoistuneet telekommunikaatiolaitteiden vientiin.

Suomen talouden rakenteellinen uusiutuminen 1990-luvun aikana vastaa verraten hyvin globaalitalouden muutoksen haasteita. Uusiutumisen tarve ja mahdollisuudet varautua kansainvälisen talouden muutoksiin ovat tulevaisuudessa osittain erilaisia kuin 1990-luvun alussa. Toipuminen lamasta osoittaa, että talouden ja työmarkkinoiden makrojoustavuus oli monista epäilyistä huolimatta melko suurta. Pääoman vapaa liikkuvuus ja EMU-jäsenyys asettavat kuitenkin myös työmarkkinoiden ja koko talouden mikrojoustavuuden testiin. Siirtyminen yhteiseen raha- ja valuuttapolitiikkaan johtaa vaatimukseen työmarkkinoiden tehokkuuden lisääntymisestä. Vaikka työvoiman liikkuvuus säilyisikin vähäisenä, merkitsee pääoman entistä herkempi liikkuminen sitä, että työvoiman kysyntä reagoi nopeasti työn ja pääoman hintasuhteiden muutoksiin. Tämän vuoksi inflaation hallinta on talouspolitiikan keskeinen tehtävä.

Euroalueen yhteisen rahapolitiikan merkitystä pienille maille on vaikea arvioida. Yhteinen politiikka ei voi kuitenkaan ottaa huomioon maittaisia (tai alueellisia) eroja taloudellisessa kehityksessä, sen vaikutukset ovat erilaisia eri maissa. Tähän epävarmuuteen on varauduttava.

Vaikka teknologinen erikoistuminen ja tuotannon globaali verkottuminen lisäävät tehokkuutta ja hyvinvointia, niihin liittyy myös merkittäviä riskejä. Kansantaloudet tai alueet voivat menettää sijaintietujaan muita nopeamman kustannuskehityksen, kysynnän siirtymien tai radikaalien teknologiamurrosten seurauksena. Kansantalouksien haavoittuvuus lisääntyy. Kaikissa tapauksissa talouden joustavat rakenteet helpottavat sopeutumista.

Myös sosiaaliturvan rahoitus on kaikissa teollisuusmaissa muuttumassa talouden ja rahoitusmarkkinoiden globalisoitumisen seurauksena. Tosin muutokset ovat olleet vireillä jo pitkään, mutta globalisaatio on kiihdyttänyt niitä. Vapaiden pääomaliikkeiden maailmassa sosiaaliturvan rahoitusta ei voida enää tarkastella kansallisena kysymyksenä. Uusissa rahoitusmalleissa julkisen sektorin osuus pienentyy ja yksilöiden vastuu sekä järjestelmien kannustavuus lisääntyvät. Sosiaaliturvan korkea taso pyritään säilyttämään, mutta turvan rahoituksesta aiempaa pienempi osa kiertää julkisen sektorin kautta. Valmistautuminen sosiaaliturvajärjestelmien muutoksiin on tärkeää jo senkin vuoksi, että väestön vanheneminen johtaa hyvinvointipalveluiden kysynnän kasvuun. Globaalitaloudessa myös sosiaaliturva ja toimivat instituutiot yleensä ovat merkittäviä kansallisen kilpailukyvyn osatekijöitä. Julkinen sektori hyvinvointipalveluiden tuottajana voi olla suurikin, mutta sen on oltava tehokas.