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FINLAND'S EXPERIENCES AND CHALLENGES IN THE EURO ZONE*

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ABSTRACT: In this paper we study Finland's way to the Economic and Monetary Union (EMU) and her economic development as a member of the EMU. First, we describe the economic background of the membership and the arguments presented in research and discussion for and against it. Then we describe Finland's economic performance in the Euro zone. The main part of the paper consists of an analysis of the Finnish economy in terms of some crucial determinants for an optimal monetary union. These include differences in production structures, differences in the country composition for exports, output variations, housing sector developments, interest rate developments in comparison with the Taylor-rule based rates, labour market flexibility, and fiscal policy. Finland is analysed in the context of other EMU and EU countries, so the paper includes comparisons with them, too. Finland has performed very well until now. The analysis of the structural and cyclical factors of the economy indicates, however, that the Finnish economy continues to differ crucially from the core Euro zone countries. This means that the adjustment mechanisms, including labour market flexibility and fiscal policy, must be maintained effective and in some respects even be strengthened.

KEY WORDS: Economic and Monetary Union, EMU, Finland

JEL Codes: E30, E32, E42, E52, F33, F41, F42

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1 Introduction

Finland joined the Euro zone when it was established in 1999. It had been rather clear already for a couple of years before 1999 that Finland would want to join and that it would meet the qualifications. The road to membership, however, was long and stony. Early experiences with a fixed exchange rate had been very disappointing. At the time of joining the EMU, the disappointments had been partly forgotten, and had partly led to a better understanding of the conditions under which such a regime could function properly.

By the year 1999, there had already been considerable debate concerning the costs and benefits of a common European currency, and thus the time was ripe for fixing the exchange rate and for adopting the Euro by 1st of January 2002. The decision was political, but it was felt that the benefits would exceed the costs, at least in the foreseeable future.

In Section 2 we present a brief history of the Finnish economy's development towards the adoption of a fixed exchange rate and a common currency. In Section 3 we describe Finland's experience as a member of the Euro area with respect to some important economic indicators. In Section 4 we study the challenges faced by the Finnish economy as a member of the EMU in terms of crucial structural factors and cyclical patterns. We study production structures, composition of countries for exports, output variations, the housing market, the ECB interest rate in comparison to the Taylor rule based rate, labour market flexibility and fiscal policy. In Section 5 we present the summary and conclusions.

2 The Way to EMU

Finland has a history of frequent devaluations, and a series of devaluation cycles can be observed. There have been 15 devaluations in the period from the Second World War to the early 90s, including two depreciations during flexible exchange rate regimes. The cycle usually starts with rising costs, often in conjunction with a weakening international demand. During the same timeframe, there have also been 5 revaluations that were triggered by rising inflation.

Devaluations were preceded by the deteriorating profitability of firms and a worsening current account deficit. The interests of both the export industry and the labour unions were served in the call for devaluation.

Devaluations in Finland were usually supported with an economic policy package that aimed to curb inflationary effects resulting from the depreciation. Success was only partial and Finland's annual inflation was 7.5 per cent on average over 1961-1991. The corresponding figure for the whole OECD area was 7.3 per cent. Inflation was a problem in other countries as well.[1]

In the late 80s Finland wanted to break the cycle of devaluations with a "hard/stable currency policy". Finland was also motivated by the desire to be "a good European country" at a time when the EU was planning to move from the European Monetary System (EMS) to a monetary union. At that time, many policy makers had as their political aim Finland's membership in the European Union (it was realised in 1995) and in ERM/EMU.

Prior to the depression and since the early 1970s Finland's exchange rate regime has been a fixed but adjustable currency basket peg regime. At the insistence of the government and the Bank of Finland, no devaluations were to be applied in the beginning of the depression even though the current account deficit was rising. Reasons for the increasing current account deficit could be found on the export as well as the import factors. Exports were performing badly due to deteriorating competitiveness, weak demand on the Western market, and finally the collapse of the Soviet Union, which led exports to crumble. The main problems were in the overheating of the domestic economy. The fast liberalisation of the financial market together with a pro-cyclical fiscal policy led to a boost in domestic demand, increasing imports and accelerating inflation. Housing prices increased to a level which after the collapse was not achieved until the early years of the new century.

The outcome of the "hard currency policy" was a disaster. Finland tried to avoid devaluation by tying the Finnish Markka to the ECU basket in September 1991. A unilateral peg was not, however, enough to convince the market and the Markka was devalued by 12 per cent in November 1991. In September 1992 the currency was allowed to float, depreciating further for some time before stabilising and finally appreciating.

[1] External shocks, particularly the oil shocks of 1974-1975 and 1979-1980, also contributed to the inflation rate.

The depression Finland experienced in 1991-1993 was more severe than in the 1930s. The GDP declined by 11 per cent in 3 years. Unemployment rate increased from 3.2 per cent in 1990 to 16.6 per cent in 1994 (Figures 3 and 4), and did not dip below 10 per cent until 2000. In 2005 it was 8.4 per cent – already 0.2 percentage points lower than in the Euro area on average.

External deficit was eliminated by mid 1990s and the current account turned into a clear surplus, reflecting initially the drop in the domestic demand but also rather quickly the recovery of exports. The devaluation and depreciation of the Markka helped to achieve this. In the longer run, however, the growth of electronics exports, mainly mobile phones and related networks, was crucial in the recovery. Innovations were the main element in the success of the electronics industry.

Finland experienced a deep structural change in the 1990s. The economic structure changed drastically towards more skill intensive sectors and productivity increased rather fast in several industries; for example manual work in construction diminished quickly. Young people were hired to the fast growing industries whereas many elder people who had been made redundant during the depression could not find jobs. Generally, their education levels were either too low or not geared to the changed economic structure. A part of this labour force, having been re-educated, found new jobs but others were either not interested in retraining or could not find job after the short and often superficial re-education period. Currently, the ageing of the population is transferring a part of the difficult-to-employ working force onto pensions.

The recovery of the economy and the quick structural change created more confidence in the fixed exchange rate regime and the monetary union. Due to liberalised capital movements, a fixed but adjustable exchange rate was no longer an option. The Markka was allowed to float until October 1996 when Finland joined the exchange rate mechanism of the EU (ERM). The Finnish currency was thus regarded as having been stable long enough not to violate the convergence criteria of EMU membership.[2] Also inflation and the long-term interest rate had been low prior to entering the EMU (Figures 1 and 2). The largest

[2] Strictly speaking the criterion required that the currency must be stable inside the ERM arrangement for 3 years before membership, i.e. 1.1.1999. The Markka was, however, regarded as stable already before entering the ERM.

question mark was the public sector deficit (in addition to the exchange rate stability) but it started to improve quickly due to the high GDP growth rate and active balancing measures (Figure 5). For a short time, the public sector debt was almost 60 per cent of GDP but was firmly below the criterion when entry into the EMU was topical (Figure 6).

Membership in the EU in 1995 was motivated by longer-run economic growth effects. The decision included also a political element. The most extensive studies on economic costs and benefits of EU membership were conducted by VATT (1992) and Alho, Kotilainen and Widgrén (1992)[3].

Studies on the exchange rate aspects of EU integration had been started already in the late 1980s (see Kotilainen and Peura, 1988). The two studies on the EU membership mentioned above included a chapter on EMU. Kotilainen (1992a) analysed the different pro- and con-arguments on EMU. The most extensive studies on Finland's EMU membership were by Kotilainen, Alho and Erkkilä (1994)[4] and Pekkarinen et al (1997). Kotilainen (1991a, 1991b, 1992b, 1993, 1995, and 1998) examined the effects of joining the EMU by comparing it to alternative exchange rate regimes in a three-country model particularly with respect to insulation properties in the face of various domestic and foreign shocks.

Economic arguments in favour of the EMU were related to longer-term effects. Lower interest rates could be achieved by eliminating the possibility of exchange rate changes. Domestic policy makers, labour unions and enterprises could also be disciplined through a credibly fixed exchange rate. Diminishing foreign exchange and hedging costs were additional benefits. Problems from EMU membership were seen in the adjustment of the economy in the face of idiosyncratic shocks. Finland's production structure was perceived to be distinctly different from those of the core EMU countries, which could be a potential problem. The foreign trade composition of the country differed from that of the (probable) EMU average, too. Finland's business cycle history was also different from that of the core EMU, but whether this was due to exchange rate and other economic policies was not ascertained. (See Kotilainen, 1996.)

[3] The main points of the book are presented in English in Alho, Erkkilä and Kotilainen (1996).
[4] The main arguments in favour and against Finland's EMU membership are summarized in English in Kotilainen (1996).

Studying the insulation properties of different exchange rate regimes in the face of different shocks could not offer concrete guidance because these properties differ among shocks. Furthermore, there is no advance information on the probability of each potential shock. The currency basket peg was rejected, as being inherently unstable because of free capital mobility even though it has stabilised rather well against many foreign shocks. Floating offers good insulation properties in many incidents of foreign shocks and in the case of domestic goods demand shocks, and was, in fact, the only alternative to EMU membership. Kotilainen (1992 and 1995) observes that EMU membership can best stabilize the domestic output only in the event if the goods demand shock originates in the EMU area area. It also avoids the possibility of a domestic monetary policy shock by eliminating the need for the national monetary policy. This, on the other hand, makes the country vulnerable to the monetary policy of the EMU, its mistakes and its inappropriateness with regard to domestic matters.

The decisive economic argument in favour of EMU membership was the increased credibility of the economic policy that resulted in lower interest rates. This was to have a positive effect on investment. Also diminishing foreign exchange and hedging costs were seen as crucial benefits. A common currency was also considered to pave the way for exploiting the internal market to a greater degree and for increasing domestic competition. The sound performance of the Finnish economy during the second half of the 1990s and the stable external environment swept aside the risks of idiosyncratic shocks. In this respect, Finland's final position was different from Sweden, where policy makers and an academic study group led by Calmfors (1996) preferred to remain outside EMU on the grounds of national stabilisation possibilities.

The exchange rate as a stabilisation tool was regarded in Finland as old-fashioned, and it was felt that other ways to stabilise the economy must be found. Employer representation stressed the need to increase labour market flexibility, while employee associations considered a stable environment without forced income redistribution through exchange rate changes to be an asset of EMU membership. Employee organisations emphasised the so-called EMU buffers, constituting an arrangement by which some funding was collected for unexpected shocks. In practice, these buffers were small and their role has remained limited. In fact, these buffers are rarely mentioned, and have not been discussed even in connection with globalisation's negative side effects.

Many politicians, from the social democrats to the conservatives, have confirmed that when joining the EMU, the motivation was mainly political. Politicians wanted to strengthen the relationship between Finland and the EU for foreign policy and security policy reasons. Although these aspirations may be true, it needs to be recognized that EMU membership has very little to do with security policy. Economists, at least, are tempted to claim that membership decision was based mainly on weighting its economic benefits and costs, but not denying the existence of some political and psychological objectives among the politicians.

3 Experiences of EMU Have Been Positive at Least until Now

Finland has performed surprisingly well as a member of the Euro zone. There have been no problems in fulfilling the EMU criteria in terms of inflation, interest rates or public finances, and the sound economic performance of the country has contributed to this situation. The Finnish government has also complied with EU rules perhaps more stringently than any other member country. [5]

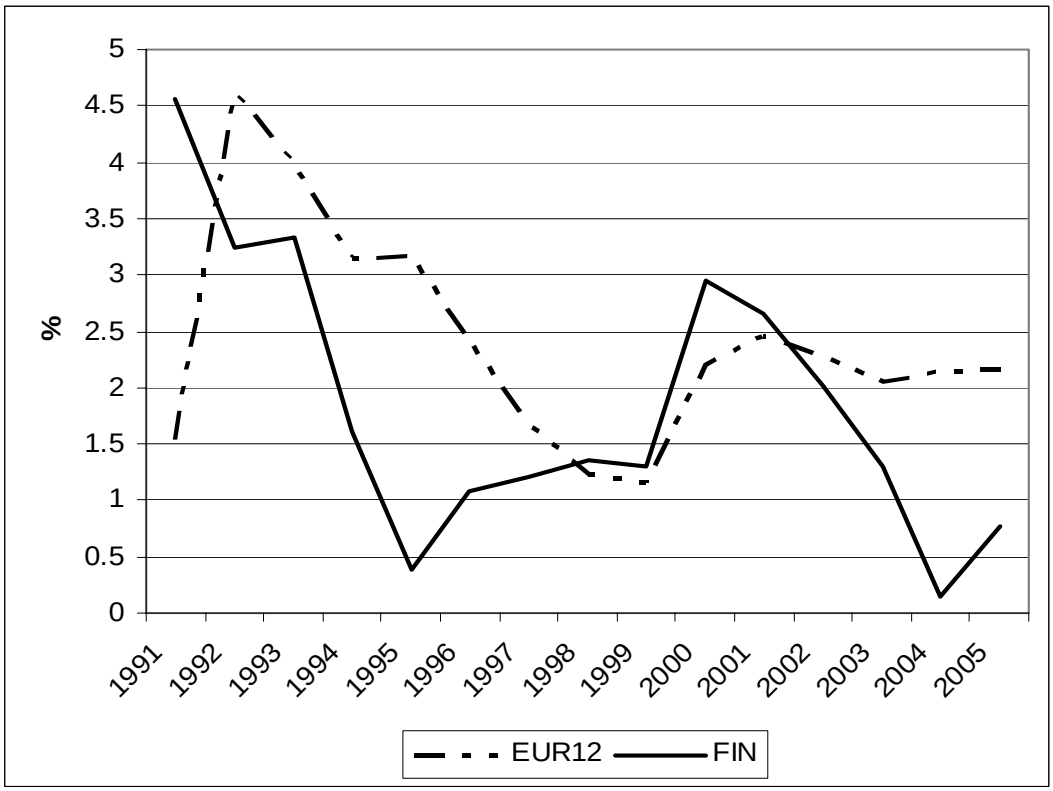
Finland has benefited from the increased credibility of the economic policy in the form of low interest rates. Short-term rates converged with those in Germany already in 1996 when ERM membership was established. Long-term rates have been very close to those in Germany since 1997, and by 2005 there was no difference. (Figure 1.) This development reflects, in addition to EMU membership, the improved performance of the Finnish economy. Inflation on average has been clearly lower than in the Euro area since 1992, except during the years 1999-2001 (Figure 2). The current account has also recorded a clear surplus since 1994.

[5] For different indicators of other Euro area countries see for example OECD (2004).

Figure 1 Finland's Short- and Long-Term Interest Rate Differentials in Comparison to German Rates, %

Source: OECD Economic Outlook database.

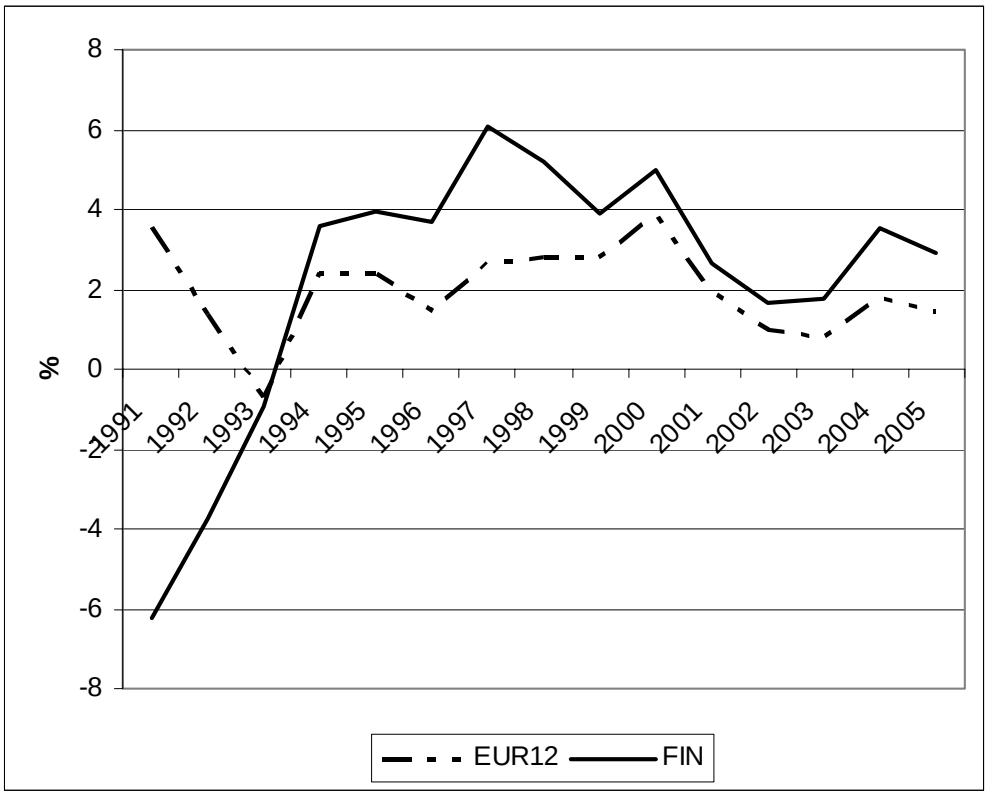
Figure 2 Harmonised Inflation in Finland and in the Euro Area, %



Source: OECD Economic Outlook database.

Finland's GDP growth has consistently been above that of the Euro area average since 1994 (Figure 3). The recession catch-up accounts for a part of this improvement, but the cumulative GDP growth since 1990, which was a peak year as well, has already exceeded that of the Euro area. In 2004 Finland's GDP volume was 1.34 times the level in 1990, whereas the corresponding figure in the Euro area was 1.32. Finland's good performance has been to large extent due to the increased output of the electronics industry, particularly telecommunications.

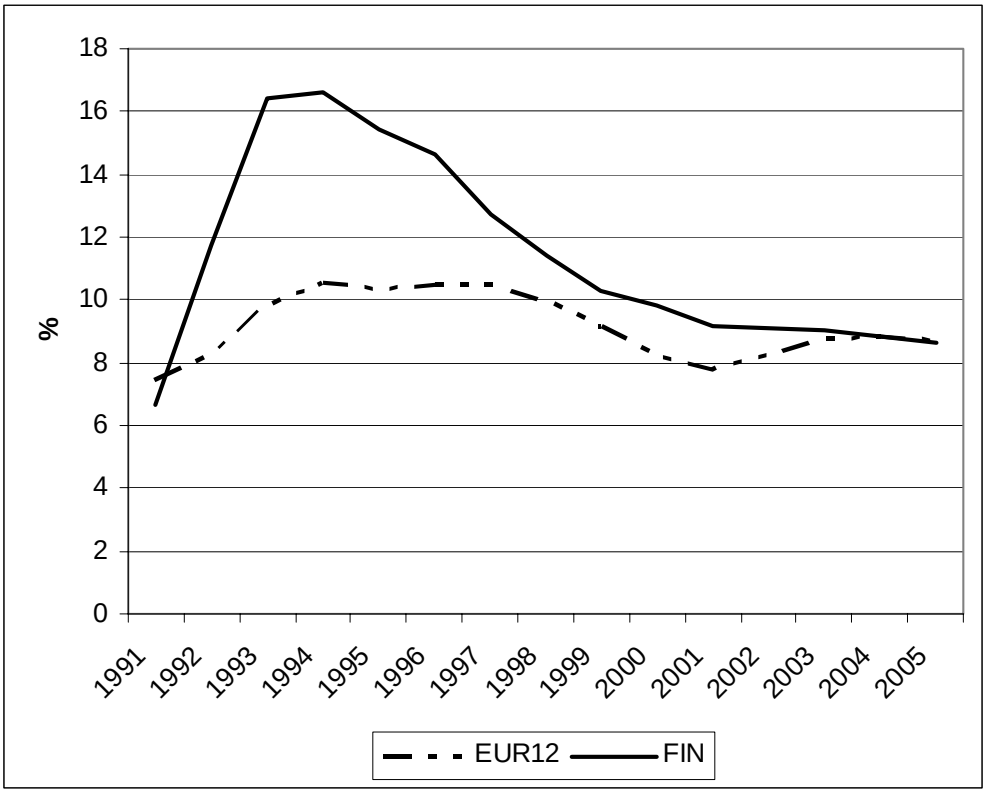
Figure 3 Changes in Real Gross Domestic Product (GDP) in Finland and in the Euro Area on Average, %



Source: EUR12: OECD Economic Outlook database. Finland: Statistics Finland (in 2006 revised data).

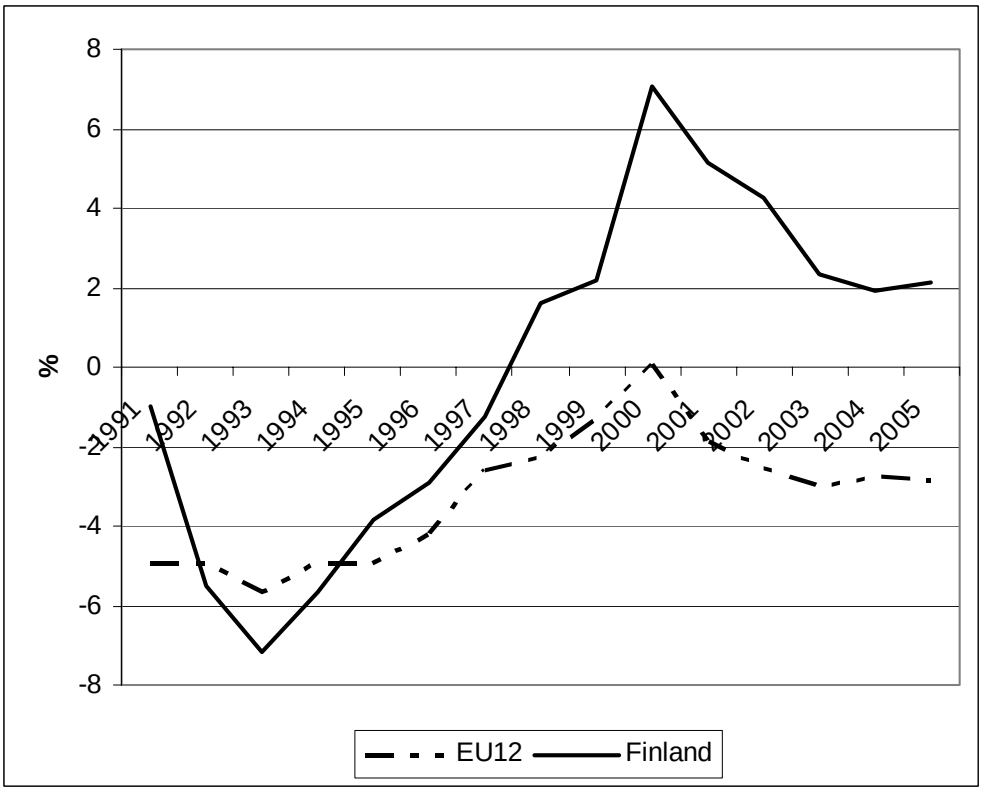
Thanks to rapid GDP growth, unemployment finally dropped to the Euro area average in 2004 (Figure 4). There is some vocational and regional mismatch in the demand for and supply of labour. There is a shortage of labour in certain practical professions like construction, the metal and engineering industry and sanitary services. As in most Euro area countries, the unemployment rate for the young in particular is clearly higher than Finland's average unemployment rate (see Blanchard, 2006).

Figure 4 Unemployment Rates in Finland and in the Euro Area, %



Source: OECD Economic Outlook database.

Figure 5 General Government Net Lending, % of GDP

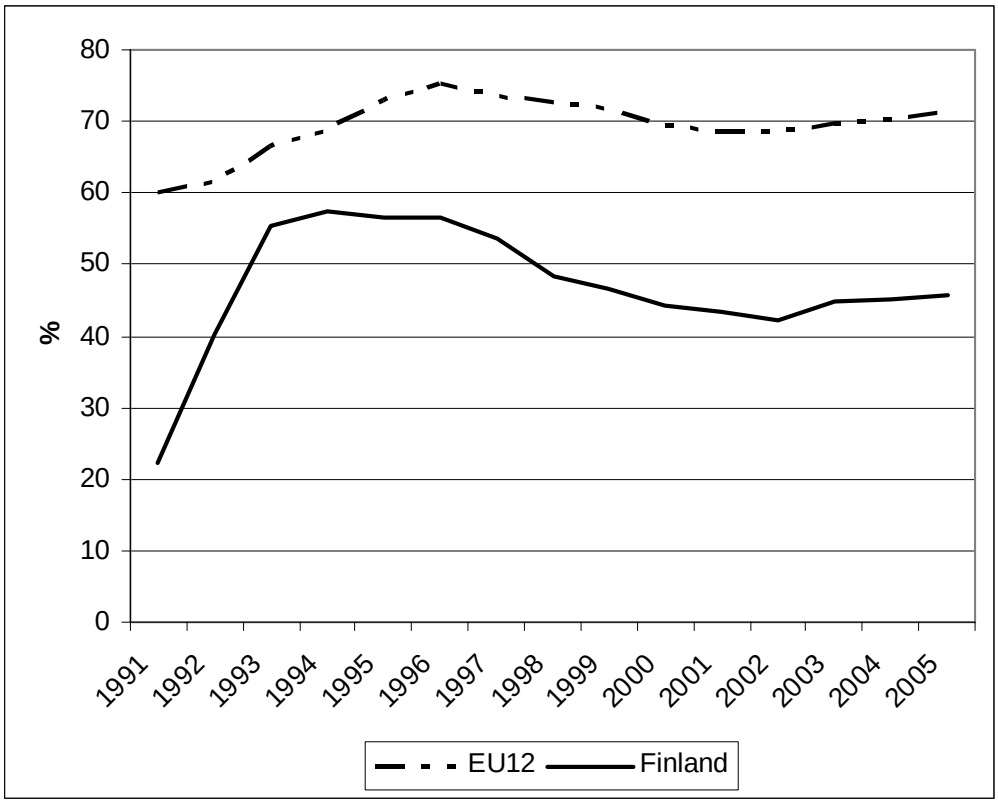


Source: OECD Economic Outlook database.

The deep depression resulted in the fiscal balance having a large deficit in the early 1990s (Figure 5). Public expenditure increased because of the added unemployment benefits and social expenditures, while receipts in turn decreased because of weak activity. The huge decline in the denominator, as measured against the GDP, increased the relative deficit, which peaked in 1993 at more than 7 per cent of GDP. After the peak, the deficit started to decline and a clear surplus was already achieved by 1998.

General government gross debt (according to the Maastricht criterion) did not exceed the critical 60 per cent of GDP value even during or after the depression (Figure 6). In 2005 it was about 45 per cent of GDP.

Figure 6 Government Gross Debt (Maastricht Criterion), % of GDP



Source: OECD Economic Outlook database.

Even though Finland's unemployment rate continued to be higher than the Euro area average until 2004, the country's economic performance has been good according to other measures. It can be argued that a more expansive fiscal stance might have reduced the unemployment rate faster. The validity of this argument depends, however, on the evaluation of the effectiveness of both fiscal policy in general with respect to the

magnitude of crowding out effects of public expenditure and the effectiveness of tax cuts (the size of the so-called Ricardian equivalence).

Finland's economic environment has been positive during the second half of the 1990s and the first half of the 2000s. The positive factors include the fast growth of the electronics industry, reflecting development of the telecommunication industry and lately the rapid improvement of the Russian economy.

There were some setbacks as well: the Russian devaluation crisis in 1998, and the ICT crisis after the millennium, which effected production of the Finnish electronics industry. These shocks were, however, short-lived. The healthy public sector balance enabled tax cuts to offset the weak export demand, and private consumption grew rapidly.

The low interest rate has contributed to the added demand for housing, inducing high prices in real estate. Currently, this can be considered as the main problem related to EMU membership. Without membership, Finnish interest rates would have been higher and prices of apartments lower, especially in the country's regional growth centres. In addition to low interest rates, the extended loan periods and increased bank flexibility with respect to repayment have contributed to higher housing prices.

The external shocks facing the Finnish economy have been manageable, and consequently there have been no severe tests of labour market flexibility in the country. Labour market unions have, however, been modest in their wage demands and thus cost pressures have been avoided.

Globalisation of the manufacturing industry has lately been a major challenge in Finland as well as in the rest of developed countries. The related shocks have, however, been rather limited, impacting mainly on the labour intensive subcontracting electronics industry firms that have relocated their production to low-cost countries, mainly to China and in some cases to Estonia and Russia. There has also been some relocation of firms in the machinery, food and paper industries. Globalisation in general, however, has been perceived as positive, as it has enabled Finnish firms to expand in sectors where economic growth is fast.

4 Challenges of the Finnish Economy in Terms of EMU Membership

The closer the economy of a country is to the Euro area average, the better suited are the common monetary policy and common exchange rate for that particular nation. And the greater the difference, the greater the need of the country for efforts of domestic adjustment, either with fiscal and other economic policies, or structural adjustment, mainly through labour market flexibility and internal and international migration.

In the following we examine some crucial factors that can be used to measure the optimality of the Euro area monetary union for individual countries. We study the diverging production structures, composition of countries for exports, business cycle developments in GDP and the value added of certain industries. In addition, we analyse the differences in the development of housing markets, interest rates in comparison to Taylor rule based alternative rates, labour market flexibility and the role of fiscal policy.

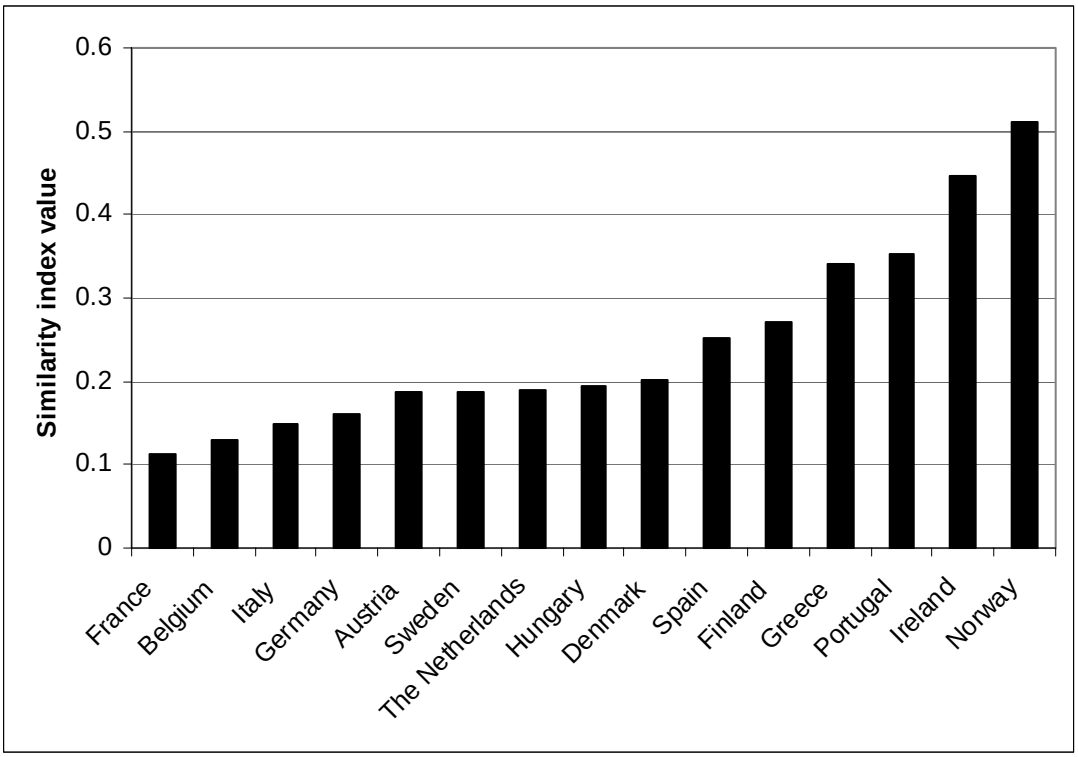
4.1 Differences in Production Structures

The vulnerability of the Finnish economy with respect to EMU membership lies mainly in its economic structure, which has the potential to cause varying cyclical and other economic developments. During the EMU discussions in the 1990s, idiosyncratic economic shocks were the main concern and they remain so even today. In the following we measure the similarity of economic structures with a similarity index (SI) of the form:

$$SI = \Sigma_i |s_i^C - s_i^{EU12}|,$$

where s_i=the share of each industry in GDP. Superscript C refers to each individual country and EU12 to the aggregate of the 12 Euro countries. Σ is the sum operator and subscript i refers to the branch of industry in question. The index is thus formed by adding the absolute values of the differences of shares in each industry. Here the calculation is done at 2-digit level of ISIC classification for manufacturing and at 1 digit level for other industries. (For this kind of similarity measure, see Kotilainen, et al, 1994 and Kotilainen, 1996.) (Figure 7.)

Figure 7 Similarity of Production Structures When Compared to the EU12 Aggregate in 2001 (index: 0=identical, 2=totally different)

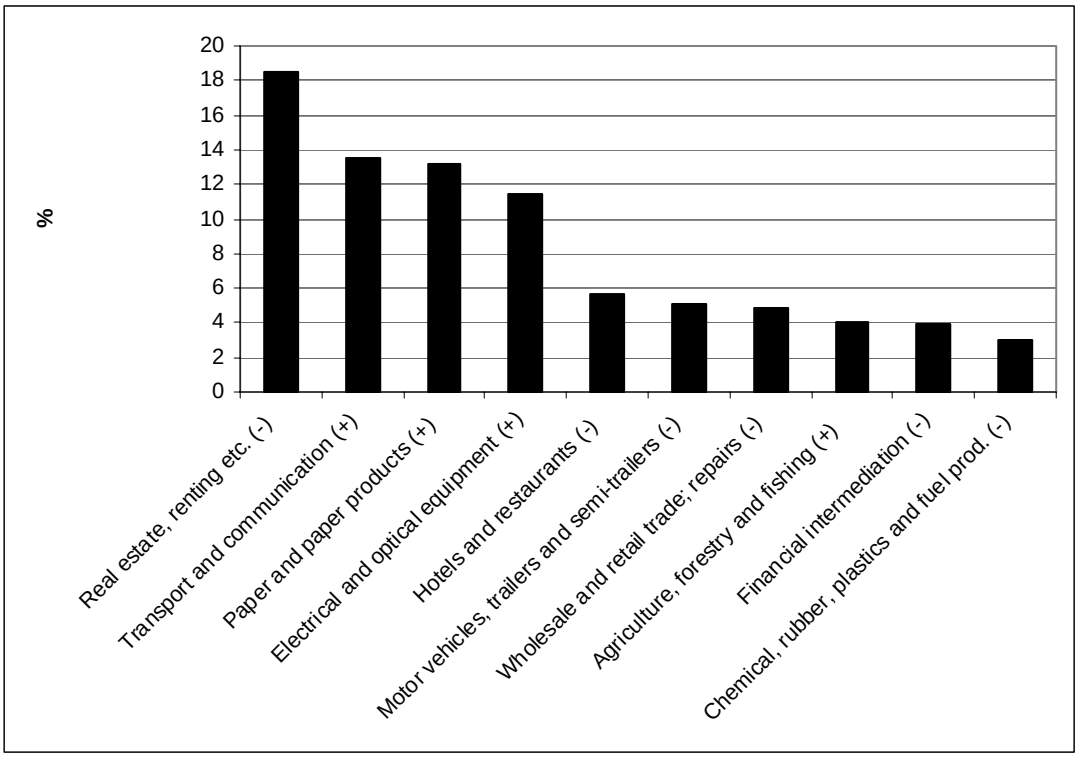


Classification: Manufacturing at 2 digit level, other industries at 1 digit level.
Source: OECD Stan Database.

France ranks as the "most representative" country of the Euro area. This reflects factual similarity as well as the country's rather large weight in the area aggregate. Belgium ranks second in similarity, but as a small country, it has marginal effect on the aggregate. At the other extreme the most divergent country is Ireland. Finland ranks as the fourth divergent country. Among Euro area countries Ireland, Portugal and Greece differ more from the aggregate.

Real estate, renting and business activities, transport and communications, paper and paper-related industries and electronics and optical equipment industry (mainly mobile phones and networks) account for the largest contribution to Finland's divergence from the Euro area aggregate (Figure 8). These items account for 57 per cent of the total difference. In Finland, the value added of real estate is relatively smaller than in the Euro area whereas that of the three last-mentioned industries is larger.

Figure 8 Contribution of Different Industrial Branches to the Divergence from the EU12 Aggregate in 2001, %



Classification: Manufacturing at 2 digit level, other industries at 1 digit level.

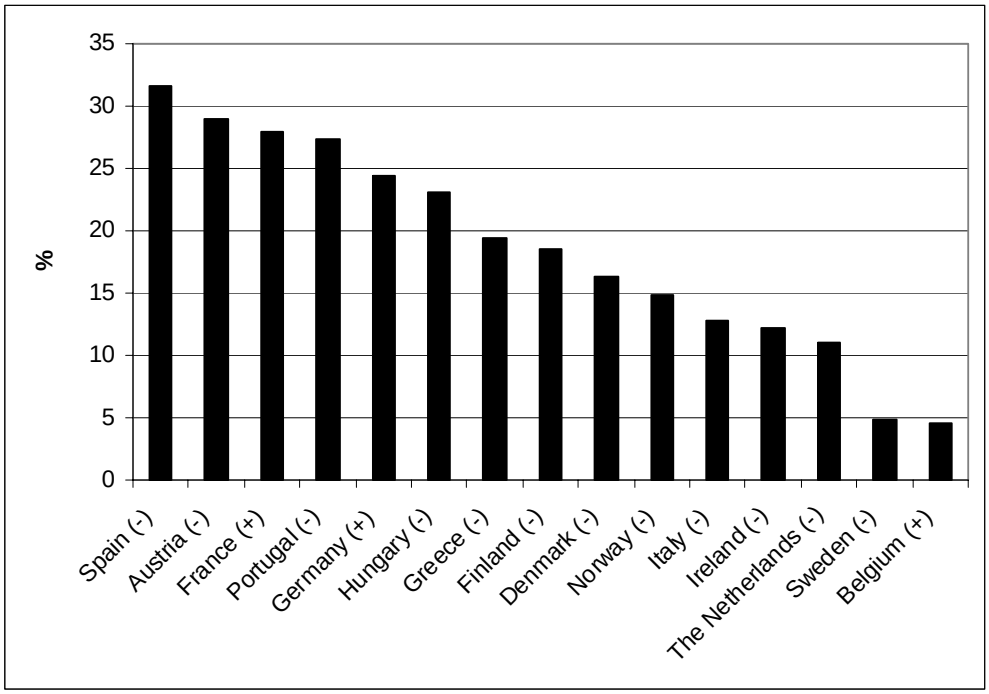
Note: A minus sign (-) after the industry implies that its share is smaller and a plus sign (+) larger in Finland than in the EU12 as an aggregate.

Source: OECD Stan Database.

The value added of transport and communications is large in Finland because of the country's large size in comparison to its population, while paper industry's larger share is a reflection of the country's extensive forest coverage. The electronics industry is clearly larger in Finland than in the Euro area in aggregate because of the concentration of know-how in this particular branch. Interpreting the role of the rather heterogeneous real estate, renting and business activity sector is more difficult. The value added of this sector is, to a large extent, estimated according to certain principles, particularly owner-occupied housing. The size of the business activities sector depends on how extensively these are outsourced within the firms.

Figure 9 shows the contribution of the real estate sector to the total divergence in the countries under review. In certain countries, the contribution of this sector is very large In Spain and Austria the size of this sector is relatively much smaller than on average, while in Belgium and in Sweden it is near the average.

Figure 9 Contribution of the Real Estate, Renting and Business Activities Sector to the Production Structure Difference from the Euro Area Aggregate, %



Note: A minus sign (-) after the industry implies that its share is smaller and a plus sign (+) that it is larger in Finland than in the EU12 as an aggregate.

Source: OECD Stan Database.

From the perspective of a common currency, the differences originating from real estate and related activities can, in principle, be important, because these are more sensitive to interest rate fluctuations than manufacturing. Real estate activities in this aggregate accounted for 49 per cent in EUR10 (without Ireland and Luxembourg) in 2001. Real estate was the lowest in the Netherlands (39 %) and the highest in Greece (78 %). The balance consists mainly of "other business activities", the share of which in Finland is low. Assuming that the business activities sector is not very sensitive to interest rate or exchange rate fluctuations, the under-presentation of this sector should not be very problematic from an EMU perspective.

The share in GDP of real estate activities alone is, on average, about the same in Finland as in the Euro area. It is low in Portugal, the Netherlands, Spain and Austria, while high in Germany and in France.[6]

[6] Disaggregated data for Ireland is not available in the OECD Stan Database.

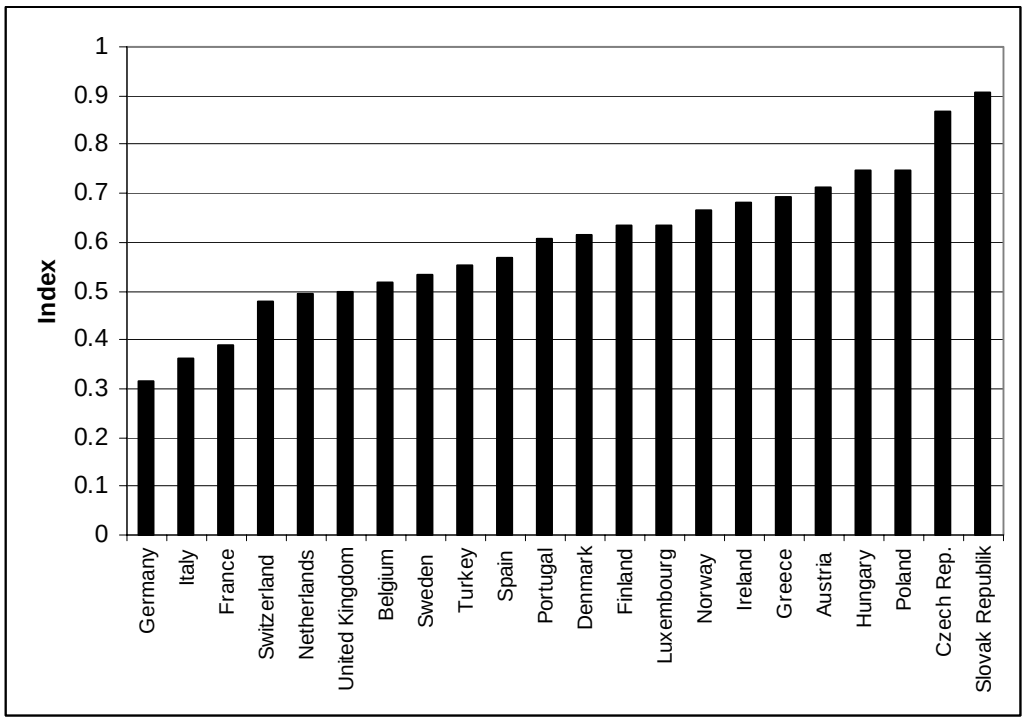
Thus, the most crucial differences in industrial production structures in Finland are related to transport and communications, paper and paper products, and mobile phone and related networks. If these sectors are faced with large shocks, the monetary policy of the EMU area or Euro's exchange rate may not necessarily be ideal for the country. Naturally, correspondingly larger shocks in the smaller industries can have the same effect. Electronics and paper industries are sensitive to Euro exchange rates.

The transport and communications industry is sensitive to oil prices and the ECB interest rates, reflecting to the capital intensiveness of the transport industry. Oil prices and interest rates are also correlated through the ECB monetary policy; an increase in oil prices contributes to an increase in interest rates.

4.2 Differences in Country Compositions for Exports

In Figure 10 we measure the similarity of the country composition of several European countries for exports by utilizing the same index as was done earlier in connection with the

Figure 10 Similarity of Country Compositions of Exports When Compared to the EU12 Aggregate in 2004 (index: 0=identical, 2=totally different)



Note: Index is calculated at country level (252 countries).

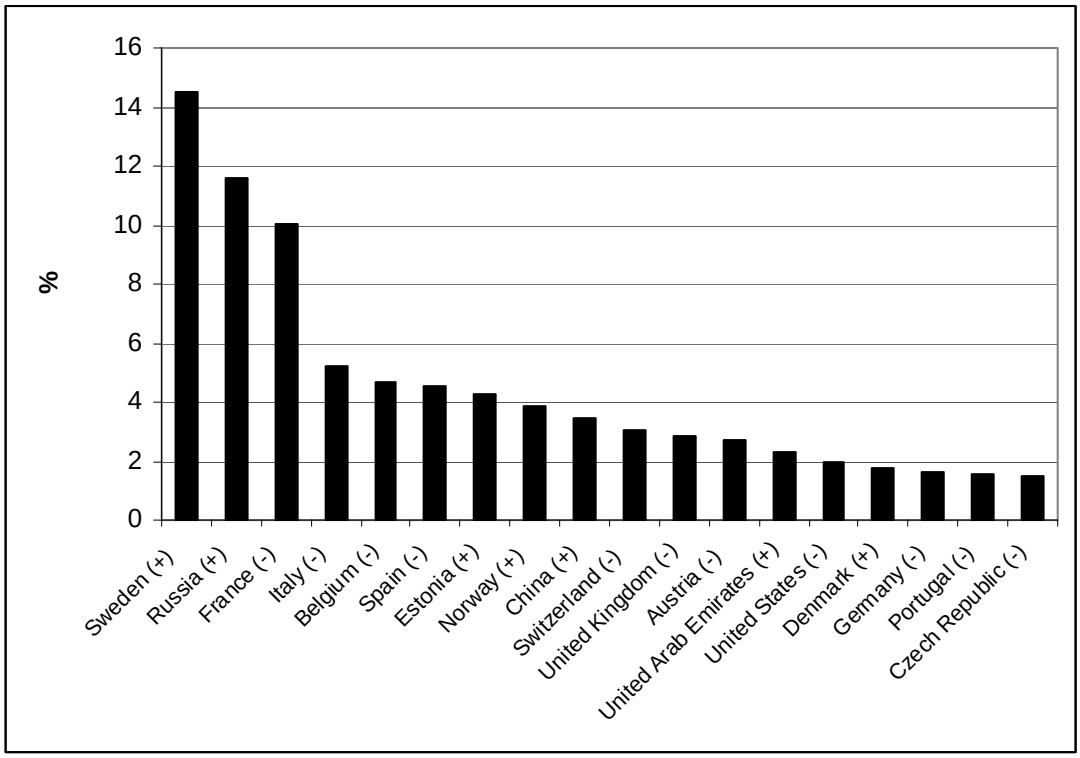
Source: OECD, Monthly Statistics of Foreign Trade Database.

production structures. Now s_i refers to the share of country i in each country's exports. The reference is again EUR12 aggregate. (The index is similar to that used in Kotilainen et al, 1994 and Kotilainen, 1996.)

Germany, Italy and France have the closest representation to the EUR12 aggregate to the country composition for exports, while the greatest divergence among the current Euro area countries is evident in Austria, Greece and Ireland. Finland ranks 8th with regard to similarity. New EU member countries of Slovakia, Czech Republic, Poland and Hungary are the most divergent group of all the countries studied.

The diverging country composition for exports constitutes a vulnerability factor with respect to foreign shocks. In the case of Finland, the largest differences in country composition are a result from the larger than average shares of Sweden and Russia and from the smaller than average share of France. (Figure 11.) Thus shocks originating in Sweden and in Russia have a larger effect on the Finnish economy than on the Euro area economy on average. In addition to

Figure 11 Contribution of Different Countries to the Difference from Euro Area Average in Country Compositions in Exports in Finland in 2004, %



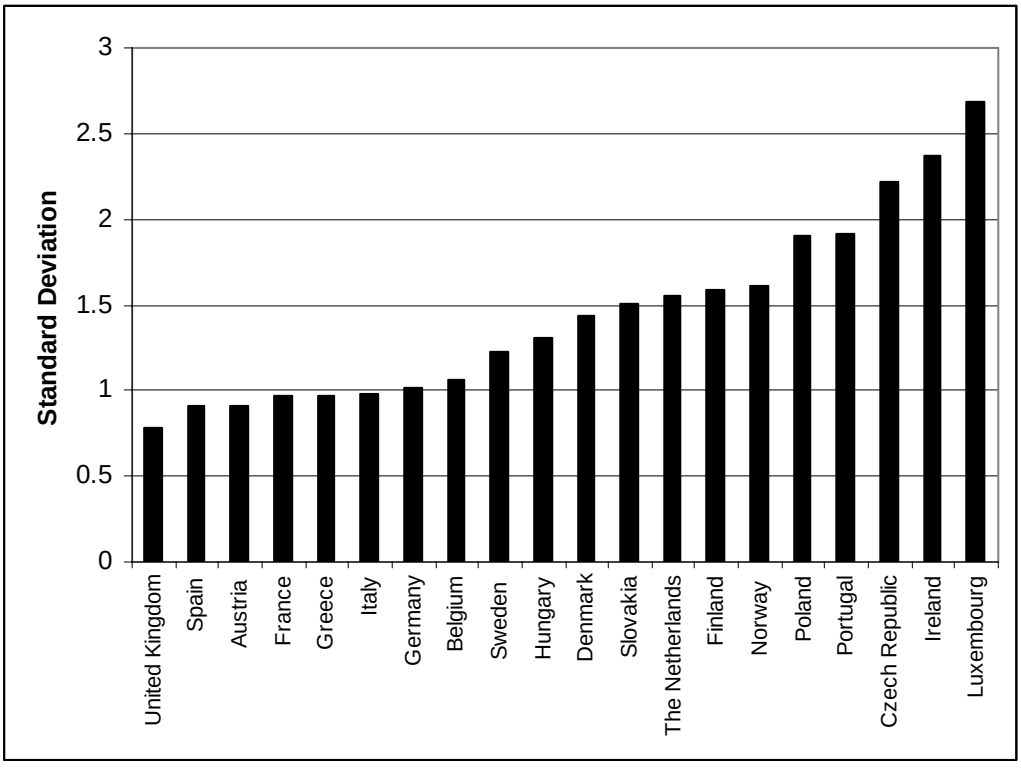
Note: Index is calculated at country level (252 countries). Minus sign (-) after the country indicates that its share of in Finnish exports is smaller and the plus sign (+) that it is larger than in the EU12 as an aggregate

bilateral trade, Sweden is also an important competitor for third-world markets, especially in paper and wood products as well as in electronics industry (mobile phones and networks). In the case of shocks occurring in France the situation is reversed.

4.3 Output Variations

Variations in gross domestic product were small among the Euro area countries in Spain, Austria, France, Greece and Italy during the period 1994-2005 (Figure 12), while fluctuations were the highest in Luxembourg and Ireland. The United Kingdom ranked first with the lowest variance. Finland ranked 9th with regard to output fluctuations among 12 Euro area countries.

Figure 12 Standard Deviations of Annual GDP Volume Changes in 1994-2005

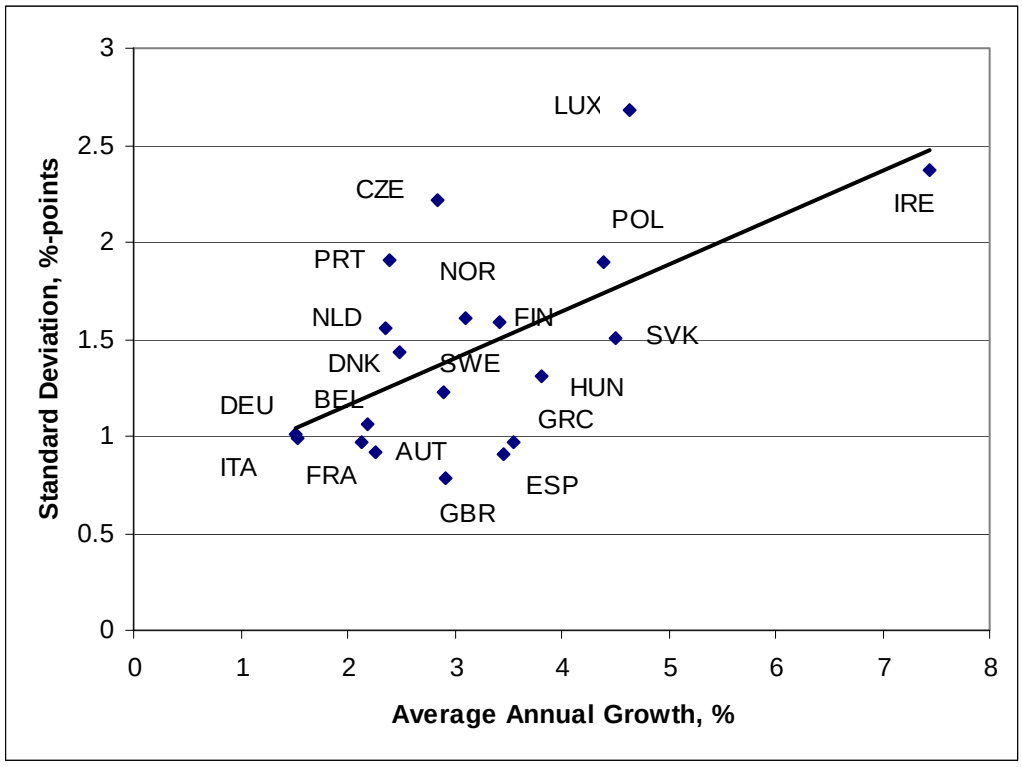


Source: OECD, Economic Outlook Database.

Variations naturally tend to be high in countries with a high GDP growth rate, and low in countries with stagnating GDP rates. Ireland exemplifies the first scenario, and Germany and Italy the last. In Figure 13 we have drawn a regression line to a data set where the average GDP growth in 1994-2005 is on the horizontal axis and the standard deviation of annual changes on the vertical axis. In addition to current Euro area countries, we have also included some potential new members.

Finland is positioned near the trend line, and from this the Finnish economy appears not to have been especially shock prone in the post-depression period. Among the current Euro area countries, Luxembourg, Portugal and the Netherlands have GDPs that have been more volatile in relative terms. Output deviations have been relatively low in Spain, Greece, Austria and France when the average GDP growth rate is taken into account. The conclusion that can be drawn from this is that Finland has not indicated being more shock prone than the average of the countries studied in 1994-2005. If this were to be indicative of the future, there would be no special need in the country for very active cyclical policies. The relatively stable GDP development over the recent past is not, however, a very reliable guide to the future.

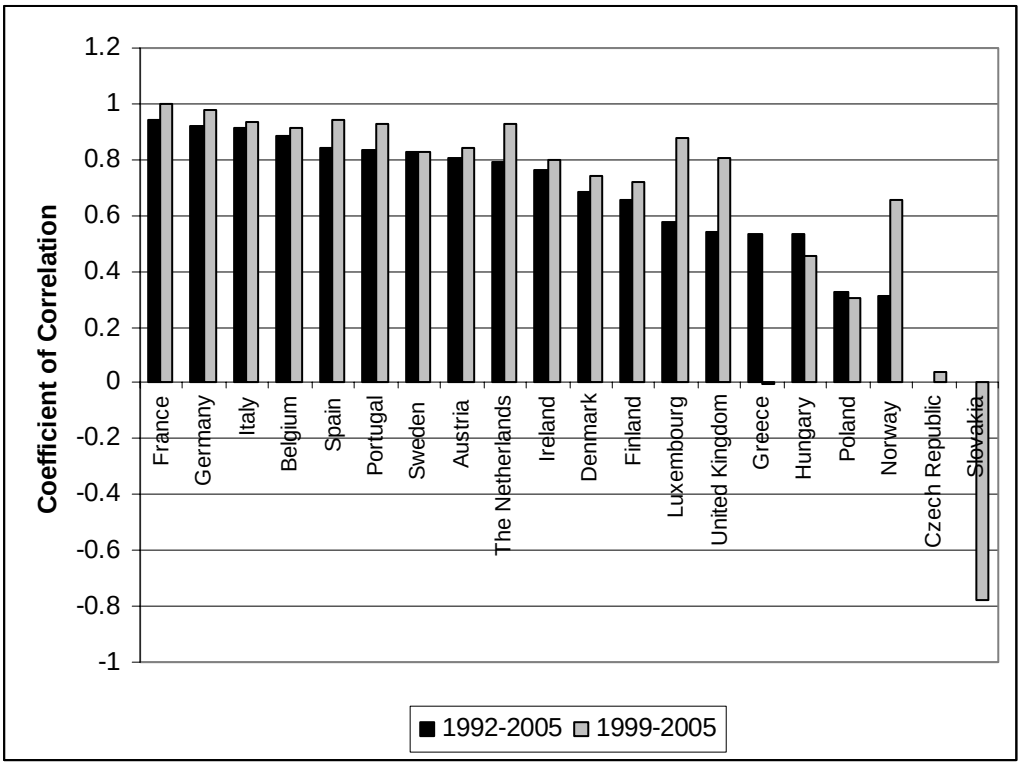
Figure 13 Standard Deviations of Annual Percentage Changes in GDP and the Average Growth Rates in 1994-2005



Source: OECD, Economic Outlook Database.

From the perspective of a common currency it is important to study the correlation among economic cycles. One method of analysing the synchronization of GDP development in the Euro area is to look at the correlation of GDP changes with those of the EUR12 aggregate. This is shown in Figure 14.

Figure 14 Correlations of Annual GDP Volume Changes with Changes of the Euro Area Aggregate GDP in 1992-2005 and in 1999-2005



Source: OECD, Economic Outlook Database.

France, Germany, Italy and Belgium are the core countries of the Euro area when measured according to the correlation of GDP changes with the Euro area aggregate. The lowest correlations are found within the new EU member countries. Among the current Euro area countries Finland had the third lowest correlation in 1992-2005, with only Greece and Luxembourg being lower. During the early years of the period under review, Finland was in the grips of the depression and the subsequent recovery during the following years. However, if evaluated according to correlation rank during 1999-2005, Finland's position was even lower, with only Greece's position being worse. In absolute values, the correlation in Finland, however, increased from 0.66 to 0.72.

The conclusion from this is that with respect to the Euro area aggregate, the economic development of Finland has not been among the most integrated countries. From the above, we already note two potential reasons: 1) diverging production structure (higher than average share of transport and communications, paper industry and electronics industry), 2) different country composition for exports (high shares of exports to Sweden and Russia,

with relatively high shares to Estonia, Norway and China). Although these factors contribute to the deviations in Finland's economic development, many of the same factors also contribute positively to GDP growth. For example, the electronics industry and the rapidly increasing markets in Russia, China, Norway and Estonia have had a positive impact. High oil prices in the early 2000s in the case of Russia and Norway have contributed to their increased import demand.

Table 1 Average Growth Rates, their Standard Deviations and Correlations with the EUR12 Aggregate of Different Output Aggregates of the Finnish Economy

	Finnish GDP Volume	GDP minus Value Added of the Electronics Industry	GDP minus Value Added of the Paper Industry	GDP minus Value Added of Transport and Communication	GDP minus Value Added of All Three Industries	GDP minus Value Added of Paper and Transport and Communication
Average Annual Change 1994-2005, %	3.42	3.12	3.71	3.51	2.97	3.58
Standard Deviation of Changes 1994-2005, %-points	1.58	1.33	1.47	1.57	1.14	1.42
Correlation with EUR12 GDP 1994-2005	0.68	0.58	0.78	0.75	0.50	0.78
Correlation with EUR12 GDP 1999-2005	0.72	0.75	0.89	0.83	0.77	0.89

Source: Statistics Finland. Data for year 2005 ETLAs estimate (except GDP).

We study the effects of deviating developments of different industries on GDP correlations with the EUR12 aggregate by calculating the corresponding correlations without the three industries. After excluding the electronics industry, we notice that the correlation declines when viewed over the entire period 1994-2005, but increases when looking just the period 1999-2005 (Table 1.) We can thus conclude that the electronics industry in the 1990s made a positive contribution to synchronizing Finland's

economic development with the Euro area but had a negative impact in the 2000s. This is understandable. In the 1990s this industry benefited from healthy development due to the demand for new mobile phones. Around the turn of the century, the ICT industry, however, experienced a negative shock that affected the development of the Finnish GDP rather strongly. The purchases of mobile phones are currently more in the nature of replacements, thus it is probable that they are more dependent on the country's economic cycle. Nokia, as the main producer of mobile phones, also transfers production flexibly from country to country for economic and technological reasons. These variations, however, are of the type that they cannot be influenced by economic policy measures.

When the value added of paper and transport and communication industries is excluded, the correlation increases over the entire period as well as for the years 1999-2005. Even these adjusted correlations are lower than those of most EUR12 countries. Thus there must be other reasons, and the country composition for exports is an obvious candidate.

In Table 1, the importance of electronics industry for GDP growth is also obvious. We notice, too, that the value added of the paper industry has grown less than the GDP, thus affecting the growth rate negatively.

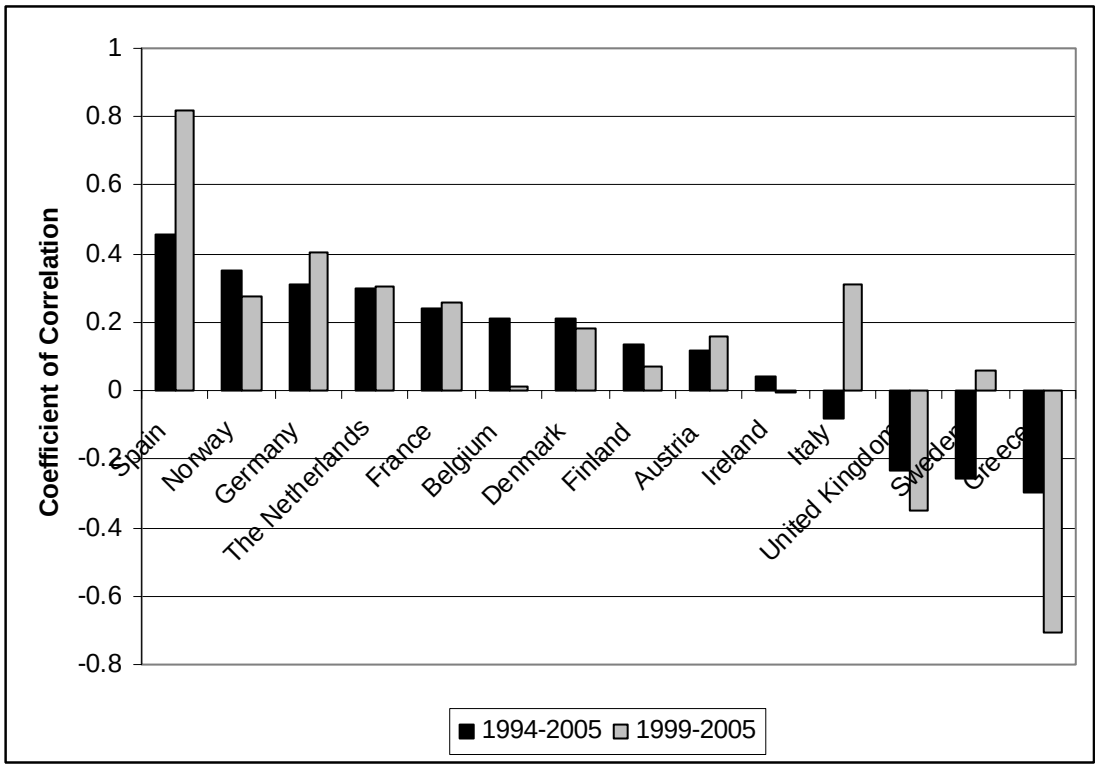
When the electronics industry is excluded, GDP has a lower standard deviation than the unadjusted GDP, and we can conclude that the value added of the electronics industry tends to increase the volatility of the aggregate GDP. The same applies to the paper industry. In transport and communications industry, the annual changes of value added are, however, about the same as in GDP.

4.4 Housing Sector

Construction is an important industry in view of a common currency, because it is interest rate sensitive. The size of the construction industry in Finland does not differ much from the Euro area aggregate. It is, however, useful to check how it has matched with the Euro area aggregate GDP. As shown in Figure 15, we notice that the correlation in the case of Finland has been low although positive, i.e. economic policies (mainly interest rate policies) aimed at

smoothening the changes in Euro area GDP are on average moving in the right direction. This correlation is the highest and positive in Spain, whereas in Greece the housing investment cycle diverges considerably from that of the Euro area aggregate GDP.

Figure 15 Correlations of Housing Investment Volume Changes with the Changes of Euro Area Aggregate GDP in 1992-2005 and 1999-2005



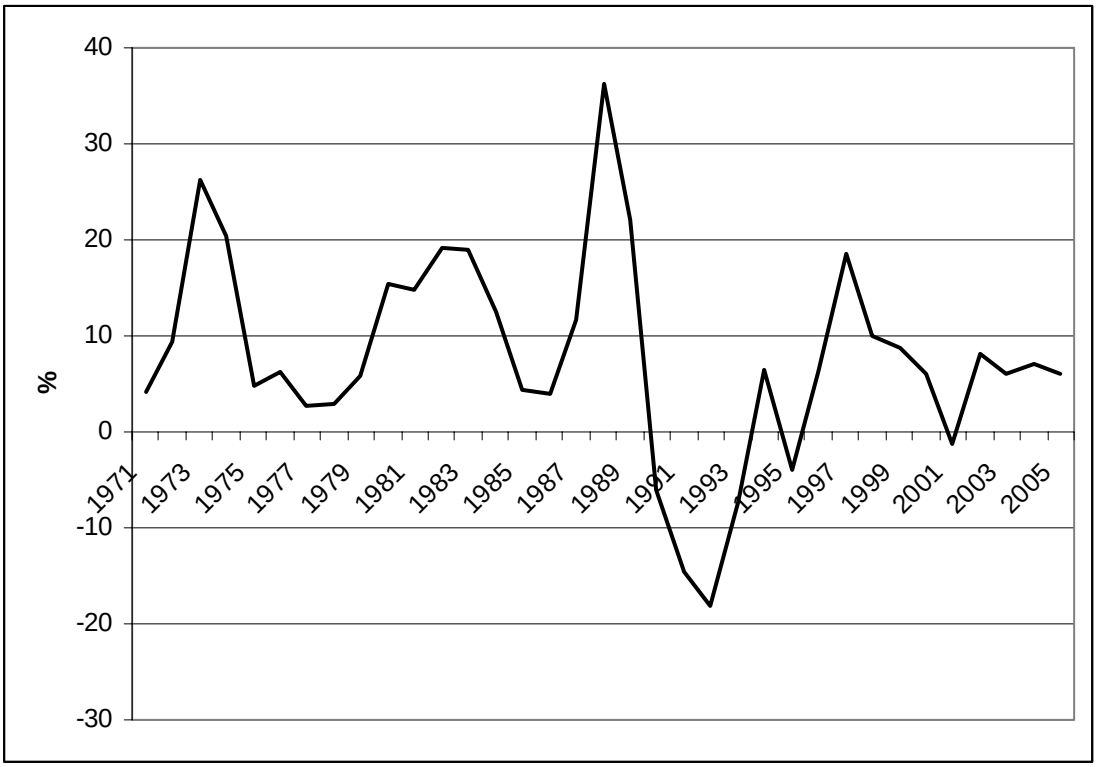
Source: OECD, Economic Outlook Database.

In addition to housing investment, it is also important to analyse how the development of housing prices has occurred. We have calculated the coefficients of correlation between the Finnish housing prices and the Euro area aggregate consumer prices. ECB's interest rate policy is mainly guided by the development of inflation. The above-mentioned correlations have been strongly negative: -0.63 in 1994-2005 and -0.57 in 1999-2005. On the basis of past development, it appears that the monetary policy geared to controlling Euro area inflation has been inadequate to smoothen the development of housing prices in Finland.

The prices of housing have increased almost 6 per cent per annum during 1999-2005 (Figure 16). In addition to low interest rates, the keen internal migration to the growth centres of the country as well as the extended loan periods and more flexible repayment schemes have contributed to the increase. Tax deductible interest payments on housing

loans have also eased the burden for households. In this regard, no major change has occurred during the Euro period. Earlier, Finland switched from a progressive income tax rate deduction to proportional capital income tax deduction.

Figure 16 Changes in Housing Prises in Finland, %



Source: Statistics Finland.

All in all, it appears that neither in Finland nor in several other Euro area countries, is it possible to rely very much on ECB's monetary policy for controlling developments in the domestic housing sector. Housing investment and the development of housing prices are affected by so many purely domestic elements, such as internal migration and demographic factors, that the most suitable tools for dealing with these problems are the domestic ones.

4.5 Interest Rate Developments

One method of studying the appropriateness for each country of the ECB monetary policy is to calculate the so-called Taylor rule based rates, originally proposed by Taylor (1993). Following Taylor's original formulation we write it as follows:

$$i_t = \pi_t + r^* + 0.5(\pi_t - \pi^*) + 0.5y_t,$$

where i = refinancing rate of the ECB (Taylor: federal funds rate),

r^* = equilibrium real refinancing rate,

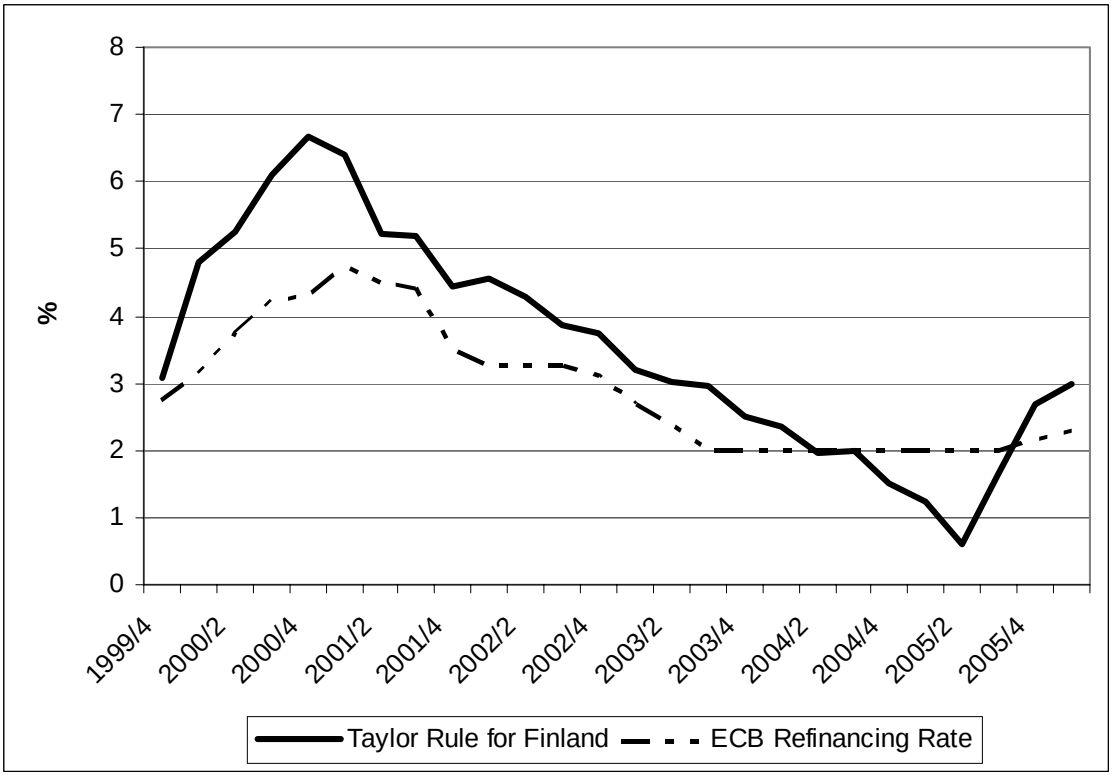
π = average inflation rate over the contemporaneous and prior three quarters (here harmonised consumer price (CPI) index, Taylor used the GDP deflator),

π^* = target inflation rate,

y = output gap (100*(real GDP – potential GDP) + potential GDP).

For r^* and π^* Taylor assumed 2 %. We follow this practice because it can be justified on the basis of the Euro area facts. We measure harmonised CPI inflation by the moving average of 4 quarter averages over the corresponding period for the previous year. For the output gap measure we use the estimate of the OECD.

Figure 17 Taylor Rule Based Refinancing Rate for Finland and the Actual Refinancing Rate of the ECB, %



Note: The decline in the Taylor rate during the second quarter of 2005 is due to a drop in output caused by a paper industry lockout (which affects the output gap). Inflation was also low at that time. The refinancing rate is calculated roughly as a quarterly average. (The GDP data for Finland is the one available in Spring 2006, so the revisions done in summer 2006 are not taken into account here.)

Source: OECD Economic Outlook (the data).

Finland's interest rates as member of the Euro zone have been lower than they would probably have been without membership (Figure 17). At least the Taylor rate has consistently been higher. However, when compared to other Euro area countries, this has not been unusual (see appendix).

Macroeconomic development has been stable and positive in Finland, and there have been no situations in which the Bank of Finland would have had to increase interest rates to support the exchange rate outside EMU. Increases in interest rates would probably have resulted in a stronger Markka.

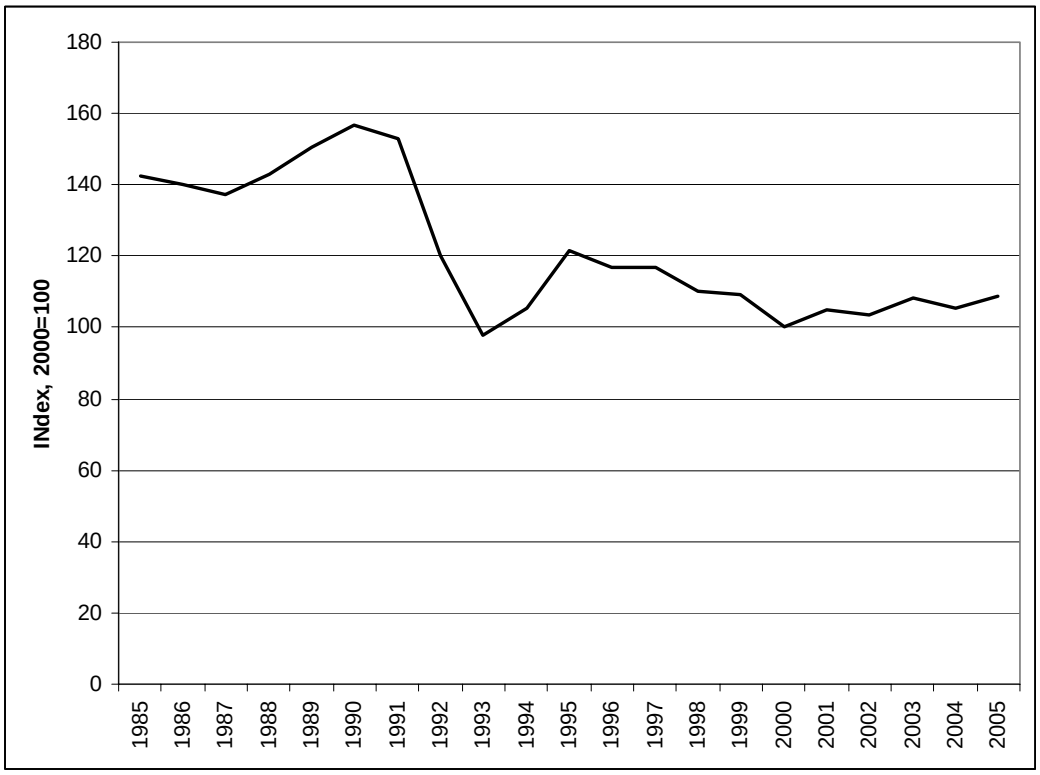
The low interest rate has undoubtedly given the Finnish economy a boost. This has not been a problem for private consumption and investment because the current account has had a strong surplus and inflation has not accelerated. The low interest rate has clearly been a problem mainly in the housing market where prices have become excessive (see Section 4.4).

4.6 Labour Market Flexibility

The wage negotiation system in Finland is rather centralised and membership in unions high. Wage agreements are often conducted between the central unions and then applied to branch union level, a method which enables to some extent the branch-specific factors to be taken into account. At times a centralised agreement cannot be achieved. In these cases agreements are made between branch level employer and employee organisations.

The rather centralised system of negotiations and the corporatist political culture make it possible to agree on wages which, on average, support the competitiveness of the economy. Although the adjustment measures aiming for improved competitiveness during the depression period of the early 1990s were mainly due to the devaluation and depreciation of the Markka, the wage negotiation system contributed with very low wage increases (Figure 18). Since then, Finland's competitiveness has been rather stable.

Figure 18 Relative Unit Labour Costs of Finnish Manufacturing Industries in Common Currency, Index 2000=100



Note: Competitiveness improves when the curve declines. Country weights: European countries' country-wise import shares, adjusted for Finland's export structure.
Source: ETLA. Data from OECD, Stan Database.

At the micro level Finnish wages are, however, very rigid in real as well as in nominal terms. Employees are not ready to adjust wages to support the specific economic situation of the firm (see Böckerman, Laaksonen and Vainiomäki, 2006). According to Dickens et al (2006) the aggregate rigidity measure obtained by summarising the nominal and real stickiness measures in Finland is the fifth highest in Western Europe. The measure based on several years of data is 0.70 for Finland, 0.96 for Portugal, 0.90 for France, 0.89 for Sweden and 0.80 for Italy. Especially real wage rigidity is high in Finland as well as in Sweden and France.

Rigidity of wages can be a problem in the Euro area because Finland is in many ways different from the Euro area aggregate. The probability of country specific shocks is thus rather high.

Until now the external environment has been fairly stable. Globalization has introduced main challenges, particularly as labour-intensive subcontracting firms have relocated activities to high-growth and low-cost countries where their client firms also operate. Relocation has been mainly to China, but also Estonia, Russia and Hungary have attracted Finnish FDI. It is not probable that greater wage flexibility could have succeeded in keeping these firms in Finland. As these changes are structural in nature, delaying adjustment might not prove to be useful at all. In the case of temporary shocks, micro flexibility of wages is, however, important to save firms and keep employment in the country.

The Finnish labour market system can be rather strong in its respond to major economy-wide shocks. A political consensus can usually be achieved for moderating wage increases and for reforming labour market conditions. The main problems are, however, related to the very limited firm-level flexibility of wages. This undoubtedly affects the un-employment level negatively as well.

Regional mobility of labour usually increases as the economy expands. Economic expansion has been much higher in some growth centres of the country than in the remote areas. The young labour force actively migrates, while older people who have settled down in some area are more reluctant to move. Low and/or outdated education/skills, owner-occupied housing and short time until retirement are the major factors of rigidity.

International movement in Finland is concentrated on in-migration rather than out-migration. Shortages of labour in some practical professions such as construction, sanitary services, etc. have attracted labour from Estonia, some other new EU countries and Russia. Naturally, this has helped to avoid wage pressures and bottlenecks in these sectors. It is possible that use of foreign labour will increase micro flexibility of wages in the future. For the unemployed Finnish labour force, migration abroad has not been a realistic option.

4.7 Fiscal Policy

In addition to labour market flexibility, fiscal policy also offers a potential option in the adjustment to shocks. In the case of fiscal policy, the currently good financial situation of

the public sector gives room for anti-cyclical policies, although the implications of the rapidly ageing Finnish population on the public sector must be taken into account. Because of inherent problems with respect to timing and the scale of fiscal measures, fiscal policy has not been used very actively in Finland. As a result of the room for manoeuvre in public finances, labour income taxation has been reduced during the 1990s and early 2000s, basically for incentive reasons. Also enterprise taxation has been lowered for improved competitiveness.

These tax cuts, even in conjunction with the moderate wages increases, have not created inflationary pressures. In fact, tax cuts have often been a part of the wage negotiation deal. In 2001 and 2005 when exports were weak, tax cuts helped to maintain economic momentum in the country.

5 Summary and Conclusions

Finland's performance as a member of the Euro area since its foundation in the beginning of 1999 has been good. The country has strictly implied with the rules originally set at the Maastricht conference. These concerned factors such inflation, interest rates, public sector balance and general government gross debt. The healthy economic development achieved after the severe depression of the early 1990s has contributed to the country's compliance with the Maastricht regulations. However, Finland has also undertaken active policy measures for compliance with the criteria.

Finland has benefited from certain microeconomic advantages of the Euro, such as reduced costs of foreign exchange, the advantage of not have to hedge against changes in foreign exchange between Euro countries, certain image and monitoring benefits, which might have had a positive effect on investments, and particularly, lower interest rates. Finland has profited from the bonus of credibility created by the European central bank. Achieving the same credibility for the domestic central bank would not have been without problems. Credibility of monetary policy is important, especially in times of international and domestic crises.

The domestic and the relevant international environments have, on the other hand, been rather stable during the Euro period. The Russian currency crises during the Euro preparatory period in 1998 and the ICT crises around the turn of the century have been major crises. The former had a negative effect on exports to Russia and to some other countries affected by the crisis. The ICT crisis impacted rather strongly on electronics industry exports in 2001. Wage agreements have also been moderate so that international competitiveness has been maintained. The good macroeconomic situation in terms of export growth of especially the electronics industry, high current account surplus, low inflation and good public sector balances have given a good starting point for stable economic development. In fact, there has been no severe test of the EMU membership in Finland.

There are some well-known potential structural factors in the Finnish economy that can create problems when in certain circumstances the common monetary policy and the common exchange rate do not conform to the Finnish situation. Finland's production structure is rather different from that of the Euro area aggregate. In particular, the shares of transport and communications, the paper industry and the electronics industry are clearly higher in Finland than in the Euro area on average. Shocks affecting these sectors strongly are not reflected in the aggregate Euro area level figures and policies. Finland's country composition for exports also deviates considerably from the Euro area aggregate, as the shares of exports to Sweden, Russia, Estonia and China are clearly higher than on average. On the other hand, the share of France is smaller. These differences can also be a source of asymmetric shocks.

The observed business cycle development in Finland has also been different from that of the Euro area aggregate. The correlation of GDP changes between Finland and the Euro area has been relatively low. Variations in GDP have been higher than on average in the Euro area. However, when we take into account the fact that the growth of the Finnish GDP has also been higher, the variation has been at approximately average level. The strong trend growth of GDP thus has contributed in this respect.

Finland's interest rates as a member of the Euro area have been lower than the Taylor rule would indicate, and these would undoubtedly have been somewhat higher without membership. Inflation has not been a problem but housing prices have risen very fast.

The key adjustment mechanisms, labour market and fiscal policy, have been used in a responsible manner, and these sectors have not created problems. Good public finances have enabled tax cuts to be made, which in turn have helped to obtain moderate wage increases. At the macro level, the Finnish centralised wage negotiation system and corporatist practices will be able to respond to major macro level developments appropriately. The problem in the Finnish labour market is the very high level of micro rigidity in wages, particularly real wage rigidity. This can be a problem in responding to firm and sector specific shocks.

Good times cannot continue forever. The probability of asymmetric shocks is higher than on average in the Euro area, creating a challenge for the adjustment mechanisms. Public sector finances must be sound to enable necessary fiscal policy measures to be established and to be prepared for cost pressures related to the rapidly ageing population. Firm level labour market flexibility should be increased, and regional as well as vocational mobility of labour should be promoted. Maintaining a trend of high economic growth is, however, the most important task, because it ensures that options for manoeuvring with respect to adjustment mechanisms remain available.

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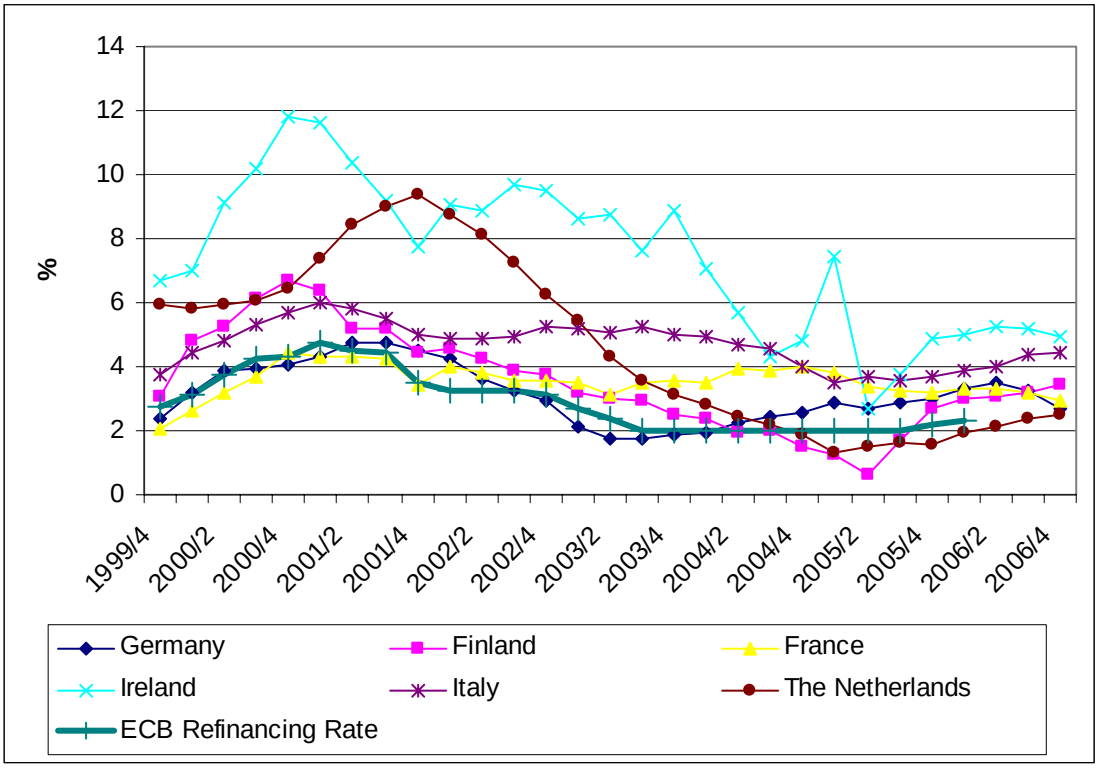
Appendix

Figure 19 Taylor Rule Based Refinancing Rates and the Actual Refinancing Rate of the ECB, %



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