

5. Economic and Monetary Union (The Euro)

This chapter is about the Euro. One of the driving factors behind the Icelandic European Union membership application in mid-2009 was Iceland's expectation that being a part of the European Economic and Monetary Union (EMU) would stabilize domestic financial markets following the turbulences in 2008 and 2009. Becoming a European Union member does not automatically mean that the new member will have the Euro as its currency. Using the Euro as a national currency requires specific membership in the EMU.⁹⁶ The EU expects, however, that new EU members make an effort to fulfil the criteria to join the EMU, unless they negotiate an opt-out.

⁹⁶ Newly independent Montenegro, which is not (yet) EU member, has unilaterally adopted the Euro as their currency. Following the disintegration of Yugoslavia, the Montenegrin economy and currency was in a bad shape, the largest banknotes printed under the Yugoslav hyperinflation of the early 1990s having a nominal value of 500 billion Dinars (billion meaning thousand millions, 1 000 000 000). However, since Montenegro is neither a member of the EU nor of the EMU, they receive no economic consideration from the EU or from the European Central Bank. This is less than ideal, but since German Marks (later Euros) were the "de facto" hard currency in many parts of former Yugoslavia during the economic collapse of the civil war years, adopting the Euro was merely accepting the "de facto" currency already in widespread use. Unilaterally adopting the Euro is not an option for Iceland, neither politically nor economically. Politically the EU has indicated that the Union does not favor unilateral adoption and such actions might have negative political consequences. From an economic point of view the Icelandic economy is functioning, despite the current recession/depression. The Icelandic Krona lost half of its value compared to the Euro during 2008, but it is far from being a worthless currency like civil war Yugoslav Dinars. By legally joining the EMU, all Icelandic Kronas will be exchanged for Euros at no direct cost for the government other than printing new notes. With a unilateral adoption, the Icelandic Central Bank's foreign currency reserves would be used to exchange Icelandic Kronas for Euros intended for domestic use. This means that the reserves would be much smaller and thus will yield much less interest. In other words, the unilaterally adopted Euros would be on loan and would cost the state an interest to be paid to the foreign lenders. Iceland cannot legally print and issue Euros without participating in the EMU.

5 – 1 Discussion on Monetary Unions

If Iceland moves from the EFTA-EEA arrangement over to full EU membership, consideration of the EMU is important. Numerous works have been presented on this subject, indicating that it is not at all a simple economic calculation. Levitt and Lord (2000), “The Political Economy of Monetary Union”, published as a part of the European Union Series, describe the build up to the EMU, its economics and working mechanisms. Levitt and Lord are descriptive, perhaps in line with other publications from the same series, rather than actually debating the pros and cons of the EMU. Nevertheless, the general debate on currency areas is not new. Already in 1961, Mundell (Mundell 1961) did some pioneering work on currency areas. His paper “A Theory of Optimum Currency Areas“ was written in a period of fixed exchange rates (based on the Bretton Woods system), which to a large extent have been abandoned in Western economies today. However, ten years later Mundell (Mundell 1971) wrote “Monetary Theory, Inflation, Interest and Growth in the World Economy”. This was written during a period when changes in the international monetary system were under way, including abandoning the gold standard and fixed exchange rates, while inflation was a common issue (or problem, depending on opinion). Although perhaps somewhat outdated, it makes an interesting compliment to the discussion on contemporary monetary policy. Mundell’s paper from 1997 (Mundell 1997) “Currency Areas, Common Currencies and EMU” includes a discussion on EMU. In that paper he defines a currency area as an area involving two or more currencies fixed to each other, which differs from a monetary union, which includes an agreement to share a common currency. The Optimum Currency Area theory substantially influences the arguments for and against joining the EMU.

The Economics of Monetary Integration (second edition, De Grauwe 1994), and the updated fourth edition (De Grauwe, 2000), The Economics of Monetary Union, where the title has been adapted to reflect the status of the Euro-zone, discusses the pros and cons of a common currency. The sixth edition of Economics of Monetary Union (De Grauwe, 2005), is a reflection of the ongoing process of the evolution of the monetary union. It is not a fundamental change of the book, but an update to better reflect on current EMU issues as well as on lessons learned. De Grauwe is very open-minded towards the arguments for and against monetary unions and how to decide on the size of currency areas.

De Grauwe finds that the theory on optimum currency areas⁹⁷ is lacking because economic shocks are more likely to be sector specific rather than country specific. This may be true for Europe, but in the case of Iceland, considering the small size and non-diversified economy, it could be a mixture of both country and sector shock. De Grauwe lists the benefits of a common currency, which includes elimination of transaction costs, exchange rate risk and price discrimination, although he warns not to be overoptimistic on economic growth stemming from a monetary union. He is very detailed in his discussion of the various theories on optimum currency areas. As already mentioned, De Grauwe refers to Mundell's old but groundbreaking article from 1961 on "A Theory of Optimum Currency Areas" where a shift in demand causes asymmetric shocks and how floating exchange rates and independent national monetary policies can ease the transition and economic consequences of an economic shock. Since Mundell's 1961 article, many changes have taken place, but there are still several economists who argue in favour of different currencies for given areas, even to the point that some large countries could be better off economically if they had several monetary zones. We should draw attention to that there are economists who argue, based on the theory on optimum currency areas, that a European Union of 27 members is not necessarily an optimal currency area. De Grauwe points out that a non-integrated area does not in itself favour a monetary union. But he also emphasizes the arguments for a monetary union, such as integration, which supports monetary union, and vice versa that a non-monetary union slows integration. Furthermore, as mentioned above, De Grauwe notes that shocks are often more sector specific than country specific, making monetary policies rather ineffective to deal with the economic problem. He also notes the fact that fiscal policies are not as effective as the Optimum Currency Area theory would indicate as that would lead to problems of sustainability which as a consequence would force countries to run budget surpluses for several years as a compensation. We should also draw attention to that De Grauwe notes that the Central European countries who have joined the EU all have indicated that they wish to join the EMU because the exchange rate volatility makes it difficult for them to stabilize their economies. Indeed this last part is something we find applies to Iceland.

We accept that Iceland is especially sensitive to sector specific shocks because of its small and relatively non-diverse economy (see e.g.

⁹⁷ Meaning different areas with different and independent currencies, rather than a common currency.

Table 3 on page 44). The ex-ante estimation here may be very difficult, although after a shock we have no doubt that many authorities on this subject will say “we told you so” or “you should have known better”. Human memory on the ups and downs of economic cycles can often be very short. An example is unexpected fluctuations in fish catches as shown in chapter 7, Figure 22, on page 204. However, as shown in Table 3 on page 44, fisheries are less significant than a decade ago and economic diversification in Iceland appears on the increase. Economic cycles, which span several years of relatively rapid growth, followed by a few years of limited or no growth, are an economic and social fact.⁹⁸ Attitudes towards economic policies are influenced by at what stage the economic and business cycle is and discussion on monetary unions are no exception. It has been interesting to note that when the Icelandic 2000-2007 economic cycle came to an end in 2008, political voices jumped up like mushrooms claiming that joining the EMU and adopting the Euro would solve Iceland’s economic problems. As discussed later, in part 5-2 on the Criteria to join the EMU, national economics have to be in order before it is possible to adopt the Euro. In any case, joining the EMU takes a few years and by then a new economic and business cycle will most likely have started in Iceland anyway.⁹⁹

When studying arguments for and against currency areas and monetary unions, we have to ask ourselves if the economic discussion is just academic. The fact is that the EU aims for a Monetary Union and being outside has a political price. A monetary union is related to the political goal of nation building and in the case of the EU it is a part of the European unification process. Although some academic studies conclude that for instance the United States is not an optimum currency area (e.g. Ghosh and Wolf (1994)), when comparing Europe to the United States, we may ask ourselves if the United States would be an economic superpower if it had several different currencies with the different zones having different monetary and fiscal policies? - The answer is: Probably not. - Also, would the United States have the privilege of printing the “World Currency” if the US Dollar did not exist, but instead there were e.g. a Texas Dollar, a New York Dollar, a Montana Dollar, a California Dollar, etc, depending on how the Optimal Currency Area theorist would

⁹⁸ Economic cycles (business cycles) are also controlled by psychological factors, i.e. if entrepreneurs, businessmen, policy makers, and consumers are in a positive “bull” mood or negative “bear” mood.

⁹⁹ Most economic cycles have longer growth periods (i.e. 3-10 years) than recession periods (i.e. 1-3 years). A notable exception is Japan at the end of the 1990s, with a very long period of stagnation.

like to divide the country? - The answer is: Almost certainly not. - Would individual states in the United States be better off if they belonged to different currency areas such as is the case in e.g. South America. - The answer is: Possibly yes and possibly no, but since the United States is one country it does not matter as much as it would in a country union such as the EU, since labour mobility is much larger within a country than between countries, mainly because of the language and cultural barrier between countries. In the case of the EU the Union is not (or at least not yet) one country. Although the intra-European cultural barriers are diminishing with increasing travel and education, the language barrier is still a substantial hindrance in labour mobility.

“The Political Economy of Monetary Union”, under the introduction of Paul De Grauwe (2001) is a collection of papers spanning a timeframe from 1961 (Mundell) to the end of the 20th Century and focuses on optimum currency areas, fiscal policies in a monetary union, and the role of a central bank in a monetary union. Such papers are of interest for academics and Central Bankers, but the average person would like to know how this benefits them. The answer is that a common currency increases trade, and increased trade benefits consumers. When trying to estimate effects of increased trade, Frankel and Romer (1999) in their paper “Does Trade Cause Growth?” state that it is difficult to answer how international trade affects standards of living. They find that 1% increase in trade over GDP increases income per person by 0.5 - 2%, but perhaps to stay on the safe side, conclude with “at least” 0.5 percent. They also find that increasing population and area by 1%, increases income by 0.1 - 0.3%. Accepting to err on the safe side may seem like a prudent and cautious approach. We accept in general that trade increases net welfare. We also accept and recommend a cautious approach when estimating total net welfare change from purely theoretical models, although empirical evidence is not easy to work with either because of all other factors involved in increasing or decreasing net welfare. We prefer to follow the cautious approach, although underestimations are just as wrong as overestimations. Erring on the “safe side” can lead to wrong conclusions and wrong advice to political decision makers, just as exaggeration can. Frankel and Rose (2000) and Frankel and Rose (2002) have slightly downplayed the initial estimate and find that 1% increase in

trade between countries in a monetary union increases income per capita by (at least) 1/3 % over a 20 year period¹⁰⁰.

Frankel and Romer (1999) findings lead directly to Rose (2000), who discusses the effects of a common currency on trade and ultimately on welfare gains. Rose estimates the effects of a common currency huge, possibly increasing trade up to three times.¹⁰¹ Rose draws attention to that many other studies have looked at reduced exchange rate volatility on trade and many of them find the influence minimal. Since Rose's estimation, pointing towards huge increases in trade may sound surprising, we would like to quote a part of Rose's (2000) conclusion: [quote] "One of the few undisputed benefits of joining a currency union is the encouragement of trade. That effect has not been quantified until now. Instead, economists have used the much smaller effect on trade of eliminating exchange rate volatility. As a result, the current consensus is that currency unions have hardly any effect on trade. The case for a common currency is weaker accordingly. This paper [Rose's paper (2000)] confirms that such scepticism is unwarranted, so that a potent argument in favour of currency unions has been under-stated in the literature. Data for the many countries that share currencies in the real world point to an unambiguous conclusion. Even after taking a host of other considerations into account, countries that share a common currency engage in substantially higher international trade."

Because of Rose's initial large estimation (three times more trade) Rose has been somewhat criticized and as discussed by De Grauwe (2005), the actual increase in trade stemming from a common currency may be in the vicinity of 20% to 40%, which indeed is also very significant, although less than Rose's initial estimate. The bottom line we use in our own estimation is that a common currency increases trade and increased trade increases net welfare. Exactly how much is subjective.

To mention some of the literature which followed Rose (2000), Rose and van Wincoop (2001) in "National Money as a Barrier to International Trade: The Real Case for Currency Union" state that while the Europeans are proceeding with the EMU and many countries in America are proceeding with dollarisation, conventional economic wisdom is that the costs are high as the members of the currency unions cannot employ domestic monetary policy to smooth the economic up and

¹⁰⁰ Rose has informed us (2009) that when he wrote "income" per capita, he meant GDP per capita. We should draw attention to that there are more factors in GDP than just income from work.

¹⁰¹ Rose uses the expression "trade". Investment is likely to increase as well.

downs of business cycles. Rose and van Wincoop find that conventional wisdom might be wrong, as national money seems to be a significant barrier to trade. They estimate that EMU will cause European trade to rise by 50%. Rose and Engel (2002) in “Currency Unions and International Integration” continue along the line that members of currency unions are more integrated than countries with their own currencies, that they have more trade and less volatile real exchange rates than countries with their own money, and that economic cycles are more synchronized in currency unions. This is somewhat in line with what De Grauwe (2005) has mentioned, that currency unions support themselves and non-currency unions argue against one common currency for all.

Rose (2000) produced many reactions and Nitsch (2002) (“Honey, I Shrunk the Currency Union Effect on Trade”) discusses Rose’s finding that currency unions raise trade by a factor of three. Rose’s reply is in the same issue of *The World Economy*, (April 2002) under the name “Honey, the Currency Union Effect on Trade hasn’t Blown Up”. The essence of those two papers is that Nitsch finds that a three times increase is an overestimate which could be reduced by perhaps one half. Nevertheless, from our viewpoint, that is a substantial increase anyway. While discussing Nitsch, we should also add that Nitsch (2000) in “National Borders and International Trade: Evidence from the European Union” notes that national borders in the EU still have a decisive impact on trade patterns, which indeed just underlines the complexity of the issue of estimating trade effects. Although Rey (2001) is perhaps a bit outside our scope, in the context of national borders we would like to repeat her quote taken from political economist John Stuart Mill (1848): “So much of barbarism, however, still remains in the transactions of most civilized nations, that almost all independent countries choose to assert their nationality by having, to their own inconvenience and that of their neighbour, a peculiar currency of their own.”

It is interesting to note that Micco et al. (2003) find that the effect of the EMU on bilateral trade between member countries ranges between 9% and 20% when compared to trade among non-EMU countries and between 5% to 10% when compared to trade between all other pairs of countries. Bun and Klaassen (2002) estimate the effect of the Euro to increase trade by 4% in the first year and cumulating to around 40% in the long run. De Nardis and Vicarelli (2003) estimate the effect to increase trade by 2.6% to 6.3% and Baldwin (2005) by 5% to 10%, although this estimation is likely to change in the coming years as new data arrives. All are well below Rose’s estimate, but all agree that the Euro as a single currency increases trade.

Not surprisingly, central banks and monetary funds have a vast interest in currency management and effects of currency unions. Micco et al. (2003) wrote their paper under the umbrella of the Inter-American Development Bank, Horvath (2003) wrote a Bank of Finland discussion paper and Mongelli (2002) in the European Central Bank working paper series. We would like to note that Horvath (2003) is of the opinion that deciding on an optimum currency area is prohibitively difficult and that decades of academic efforts have brought little towards its solution. Mongelli (2002) discusses the evolution of the Optimum Currency Area theory during the last four decades, starting with the “pioneering phase” which put the theory and its properties forward, then the “reconciliation phase” when its diverse facets were combined, then the “reassessment phase” and finally the “empirical phase”. He finds that the balance of judgments has shifted in favour of currency unions and they are now deemed to generate fewer costs in terms of loss of autonomy of domestic macroeconomic policies and there is greater emphasis on the benefits. Perhaps most importantly, Mongelli asks the question if countries form currency unions because they trade a lot or if countries start trading more because they form a currency union. This is the typical question about what comes first, the hen or the egg.

While discussing the Economic and Monetary Union, we would like to mention Molle (2001) and Gros and Thygesen (1988). Molle (2001) is very thorough in his book on the “Economics of European Integration”. He not only describes the economics of the four freedoms of the Common Market, (goods, services, labour and capital), but he also devotes significant effort into analysing sectors of activity, where perhaps to this study the part on agriculture is of particular interest (agriculture is discussed in chapter 6). Gros and Thygesen (1988) explain the European Monetary System and in 1992 (Gros and Thygesen, 1992) discuss issues related to monetary integration, which we would like to note is a EU goal but not an EFTA goal. This includes microeconomic benefits of fixing exchange rates, elimination of transaction costs, elimination of information costs and price discrimination, and also the cost of introducing a common currency. In our assessment, these are very important issues for an EFTA-EEA member when considering EU membership because EFTA and the EEA per se, do not have monetary integration. This is not to say that all EU members will accept a common currency in the future, although we believe that it is just a question of time. It is assumed that if Iceland joined the EU, joining the EMU would also take place at the earliest opportunity and the estimations we show in this study are based on that assumption.

5 – 2 Criteria for joining the Economic and Monetary Union

Before discussing the effects in Iceland if it joined the European Economic and Monetary Union (EMU), it is worth investigating to what extent Iceland fulfils the criteria to join the EMU. The four convergence criteria to join the EMU are:

- (1) Price stability.
- (2) Government finances.
- (3) Exchange rates.
- (4) Long-term interest rates.

(1) Price stability.

The inflation rate of a given member state should not exceed by more than 1½ percentage points that of the three best-performing member states in terms of price stability during the year preceding the examination of the situation in that member state. The inflation in Iceland (based on consumer price index) was around 2% in 2003, close 4% in 2004 and 2005, near 5-6% in 2006 and 2007, and in 2008 it was 12% (year's average), but approached 18% towards the end of 2008 (Central Bank of Iceland and Statistics Iceland, 2009). The Icelandic government's aim (Central Bank's aim) is to try to keep the inflation less than 2.5% per year. In the same period and up until 2007 the inflation in the Euro-zone as a whole has been between 2% and 2.5% per year (measured by harmonised index of consumer prices) (European Central Bank and Eurostat, 2009). Nevertheless, in mid-2008 the Euro-zone inflation peaked at 4%, although at years end it was back to approximately 2%. This indicates a slight worldwide inflationary trend, but not nearly as much as in Iceland. Under the current circumstances Iceland would have to apply considerable inflation reducing measures before entering the EMU in order to fulfil the price stability criteria. We should point out that since Iceland anyway is not in a position to participate in the EMU until there has been a change in the current political landscape, other economic criteria influence the counter-inflationary measures taken by the Icelandic authorities than price stability in the Euro-zone per se.

(2) Government finances.

(2.a) Annual government deficit: The ratio of the annual government deficit to gross domestic product (GDP) must not exceed (-) 3% at the end of the preceding financial year. If this is not the case, the ratio must have declined substantially and continuously and reached a level close to (-) 3% or, alternatively, must remain close to (-) 3% while representing only an exceptional and temporary excess. Table 10 below (Icelandic budget deficit/surplus as a percentage of GDP) shows that Iceland was well within this margin, even having a budget surplus in some years, all the way until 2008 when the economic bubble burst. 2008 shows a significant deficit and 2009 is expected to continue with a negative trend.¹⁰²

Table 10. Icelandic budget deficit/surplus as a percentage of GDP

Year	Deficit (-) or Surplus in %
2000	1.8
2001	-0.5
2002	-1.3
2003	-1.8
2004	1.0
2005	4.4
2006	5.3
2007	3.9
2008	-13.1
2009	(Negative) ¹⁰³

Source: Statistics Iceland (2008, 2009 and 2010).

(2.b) Government debt: The ratio of gross government debt to GDP must not exceed 60% at the end of the preceding financial year. If this is not the case, the ratio must have sufficiently diminished and must be approaching the reference value at a satisfactory pace. As shown in Table 11 on next page (Icelandic Government debt as a percentage of GDP), Iceland was well within this range up until 2008, but the Euro-zone as a whole was in fact not, although in the years up to the adoption of the Euro, the Euro-zone came down at a “satisfactory pace” from over 70% in the late 1990s.

¹⁰² The detailed consequences of the abrupt end of the 2000-2007 Icelandic economic bubble are not yet known, but preliminary data for 2009 shows a significant deficit.

¹⁰³ Ibid.

Table 11. Icelandic government debt as a percentage of GDP. (For comparison the Euro-zone is also shown)

Year	Iceland ¹⁰⁴	Euro-zone ¹⁰⁵
2000	29 %	69 %
2001	29 %	68 %
2002	27 %	68 %
2003	28 %	69 %
2004	27 %	70 %
2005	14.5 % ¹⁰⁶	70 %
2006	6.0 % ¹⁰⁷	69 %
2007	+ 1.5 % (surplus) ¹⁰⁸	67 %
2008	16.3 % ¹⁰⁹	67 %
2009	Unknown (see footnote) ¹¹⁰	

Source: Statistics Iceland (2008 and 2009) and ECB / Eurostat (2009).

¹⁰⁴ This column is based on Statistics Iceland. Eurostat figures available for Iceland (up to 2004) differ slightly and generally show a debt ratio 10 percentage points higher than presented here. Eurostat does not show Iceland after 2004.

¹⁰⁵ Based on ECB/Eurostat data. Some other sources seem to indicate lower numbers for the Euro-zone with averages below 60%, e.g. the Icelandic Prime Minister's Economic Forecast for 2007 (Þjóðhagsáætlun of 2nd October 2006), which showed the Euro-zone in comparison to Iceland.

¹⁰⁶ End year figure. The situation improved through the year.

¹⁰⁷ Idem.

¹⁰⁸ Idem.

¹⁰⁹ Preliminary data.

¹¹⁰ 2008 began well, but the downswing of the economic cycle is reversing the recent achievements of zero government debt. The collapse of the main Icelandic banks in 2008 is drastically increasing the government's liabilities/debt. At the end of 2008 Iceland got a credit line from the International Monetary Fund (IMF) valued at USD 2.1 billion. This amount is close to ¼ of the Icelandic annual GDP. Of this total amount, USD 827 million was made available immediately (approximately 10% of GDP). Furthermore, in the wake of the 2008 banking crisis, Iceland is both considering and taking bilateral loans from several nations, which if exercised to their full extent, could lead to an estimated total Government dept in 2009 of between half and one trillion (1 000 000 000 000) Kronas, which corresponds to between 50% and 100% of the annual GDP. With full employment and growing GDP this is not disastrous, but the economic problems are multiplied by the downturn in the economic cycle with falling production and increasing unemployment. To make matters worse, the loans are nominated in foreign currencies while the Krona keeps on losing value. These economic problems are further aggravated by the political fact that at the same time as the Icelandic taxpayer's burden is substantially increased, a few individuals have managed to accumulate assets worth hundreds of billions of Kronas, of which considerable parts have left the country. Nevertheless, this should be seen in context of the EU states, where government debt is often substantial and unemployment of a few percentage points is a constant problem, followed by a general global economic downturn.

(3) Exchange rates.

The member state must have participated in the exchange rate mechanism of the European monetary system without any break during the two years preceding the examination of the situation and without severe tensions. In theory, the fluctuation band of the currency should not exceed plus or minus 15%. In addition, it must not have devalued its currency on its own initiative during the same period. At this stage Iceland has not participated in the exchange rate mechanism and it would presumably only be done after the country had become EU member and intended to fully participate in the EMU. Figure 9 on next page shows how the exchange rate between the Euro and Icelandic Krona has evolved between 1999 and 2008. Figure 9 (on next page) indicates fluctuations of up to 20% from the 1999-2007 median.¹¹¹ However, in 2008 there was a large move in the exchange rate when the Krona lost close to half of its value versus the Euro. The Icelandic Central Bank's main objective has not been to stabilize the Krona versus the Euro and domestic economic considerations, such as low inflation, have had priority. Nevertheless, such a rapid fall causes some concerns and rapid exchange rate fluctuations give unexpected economic blows as imported goods rise rapidly in price, while exports give a much higher yield measured in Kronas. Furthermore, the burden of foreign currency nominated loans becomes more substantial. The terms "overvalued" or "undervalued" currencies are not based on exact figures since with floating exchange rates there is no fixed reference value. However, these terms are used to indicate trends and expected exchange rate movements. As noted before in Chapter 2, part 4, on Iceland, considering the Icelandic nominal GDP per capita in 2007 of 64 871 USD versus the Purchasing Power Parity (PPP) of 38 396 USD, it is clear that the Icelandic Krona was overvalued, which indeed showed itself in the high import-export ratio just before the economic fall. When joining the EMU, if exchange rate tensions have not shown up in the preceding two years before joining, it is technically possible to enter the EMU with an "overvalued" or "undervalued" currency. Entering the EMU with a theoretically "overvalued" or "undervalued" currency can have temporary negative economic effects. Nevertheless, it is necessary to draw the line somewhere and ultimately the EMU is a political decision but not a mathematical model. Up until

¹¹¹ As an interesting comparison, the Euro and the US Dollar have also had large fluctuations with moves up to 35% over and under the median through the last 10 years (since the creation of the Euro) (ECB (2009)). Nevertheless, although the Euro/Dollar swings have been substantial, they have not been nearly as rapid as with the Icelandic Krona.

2007, Iceland would likely have been in a position to fulfil the exchange rate criterion with its relatively stable (but overvalued) currency. However, with the rapid and uncontrollable fall in value of the Icelandic Krona in 2008, it would be difficult for Iceland to fulfil the requirement of exchange rate stability without a very stout political and economic support from other member states.

Figure 9. Exchange rate of one Euro vs Icelandic Krona from 1999 to 2008. (Part A and Part B use a different scale)



Source: European Central Bank (2008)



Landsbanki Islands (2009)

¹¹² In October 2008 when the Icelandic Central Bank (temporarily) removed the Icelandic Krona from being freely convertible, the European Central Bank (ECB) removed it from its exchange rate listing. As of October 2008, Part B is a guideline only. In late 2008 the ECB listed 1 Euro as approximately 300 Kronas, while at the same time the Icelandic Central Bank listed it closer to 180.

(4) Long-term interest rates.

Nominal long-term interest rate must not exceed by more than 2 percentage points the rate of the three best performing member states in terms of price stability. The period taken into consideration is the year preceding the examination of the situation in the member state concerned. The Icelandic Central Bank current account¹¹³ interest rates have been in line with the Euro-zone until the years 2005 and 2006 when the Icelandic rates have risen substantially compared to the Euro-zone (Table 12 below). As noted earlier, it is not the aim of the Icelandic Central Bank to mimic the Euro-zone in order to join the EMU, but to adjust domestic interest rates in line with domestic economic requirements, i.e. increase the interest rates when inflation rises. Although Table 12, below, shows relatively low Central Bank current account interest rates in Iceland up until 2005 and 2006, we would like to draw attention to that private banks in Iceland commonly charge their clients double this rate and often also link interest rates on loans to the consumer price index or foreign currency index. Needless to say, in order to join the EMU, current interest rates in Iceland would have to come down. With free flow of capital within the EEA, we are not in a position to explain the high interest rates in retail banking otherwise than by the exchange rate risk, where Figure 9 on the previous page shows that the Icelandic Krona can fluctuate very rapidly. By joining the EMU, this exchange rate risk versus the Euro would disappear.

Table 12. Nominal interest rates in Iceland and the Euro-zone

	Iceland ¹¹⁴	Euro-zone ¹¹⁵
January 2000	4.5%	4.0%
January 2001	6.9%	5.75%
January 2002	6.7%	4.25%
January 2003	3.3%	3.75%
January 2004	2.8%	3.0%
January 2005	6.25%	3.0%
January 2006	9%	3.25%
January 2007	12.75%	4.5%
January 2008	13.25%	5.0%
January 2009	15.0%	3.0%

Source: Icelandic Central Bank (2009) and European Central Bank (2009).

¹¹³ Central Bank current account (banking): Banks' accounts at the Central Bank. (Commercial and retail banks are Central Bank's "clients"). Not to be mixed with Current Account in international macroeconomics, which refers to balance of trade and net international financial and investment flows.

¹¹⁴ Icelandic Central Bank "current account".

¹¹⁵ European Central Bank "marginal lending facility".

5 – 3 The Icelandic Economic Cycle¹¹⁶ compared to the EU

Beetsma and Giuliodori (2009) point out that despite the relatively smooth introduction of the EMU, there have been periods of tensions because of misalignments in member states' business cycles. Frankel and Rose (1997/1998) find that monetary unions tend to lead to a higher harmonisation of business cycles than separate currency areas do. As such, the business cycle can be both exogenous and endogenous. Countries may satisfy the Optimum Currency Area theory criteria *ex post*, even if they do not *ex ante*.

Forecasting business cycles is particularly difficult. Studying the past is helpful, but that in itself cannot guarantee that future business cycles will be a repetition of previous business cycles.¹¹⁷ In this part we will compare the Icelandic business cycle to the EU, Euro-zone and to selected European states. We want to see if Iceland differs from mainstream Europe, which under an assumption that the business cycle is exogenous would be an argument for a separate currency area. We will also study whether harmonisation increased in the Euro-zone after the introduction of the common currency, which could signify an endogenous business cycle. Table 13 (on next two pages) shows growth statistics with 3-month (quarterly) intervals in the EU, Euro-zone and Iceland. Furthermore, for comparison purposes we have selected Germany and France as major economic powers in the Euro-zone, and Finland and The Netherlands as examples of small Euro-zone economies. Greece is taken as an example of a small Euro-zone member, geographically, politically, economically and culturally farther away from Iceland than the other four examples shown.

¹¹⁶ “Economic cycle” and “business cycle” are synonyms.

¹¹⁷ A comparison can be drawn to floating exchange rates and stock market prices. It is a mixture of a cyclical move and a random number.

Table 13. Quarterly growth data comparison, from 2nd quarter 1997¹¹⁸ to 3rd quarter 2009¹¹⁹ for EU, Iceland, and selected countries (% change)

Gross domestic product - expenditure approach - Growth rate compared to previous quarter, seasonally adjusted. Q for yearly quarters (3-month periods).

	EU	Euro-zone	Iceland	Germany	France	Finland ¹²⁰	Netherlands	Greece
1997 Q2	1.24	1.20	0.79	1.29	1.10	1.38	1.47	n/a ¹²¹
Q3	0.67	0.68	0.61	0.34	0.85	1.94	1.17	n/a
Q4	0.99	1.03	-0.61	0.76	0.96	1.34	1.13	n/a
1998 Q1	0.71	0.72	0.67	0.97	0.93	1.02	1.02	n/a
Q2	0.40	0.44	6.33	-0.45	1.00	1.45	0.60	n/a
Q3	0.54	0.65	-0.40	0.33	0.53	1.13	0.75	n/a
Q4	0.20	0.36	3.88	-0.19	0.57	0.40	0.91	n/a
1999 Q1	0.96	0.89	1.28	1.09	0.64	1.14	1.70	n/a
Q2	0.61	0.63	-2.89	-0.04	1.01	0.83	0.99	n/a
Q3	1.19	1.21	0.86	1.28	0.97	0.92	1.21	n/a
Q4	1.17	1.17	1.54	1.06	1.37	1.87	1.43	n/a
2000 Q1	1.23	1.19	0.25	1.17	1.19	1.26	1.04	n/a
Q2	0.91	0.95	0.72	1.12	0.81	1.09	0.61	0.91
Q3	0.48	0.48	4.65	-0.05	0.37	1.37	0.52	0.36
Q4	0.73	0.68	1.19	0.08	1.08	0.55	0.85	0.77
2001 Q1	0.74	0.77	-5.60	1.01	0.55	1.34	0.47	1.66
Q2	0.07	0.09	7.97	0.08	-0.04	-0.39	0.50	0.82
Q3	0.08	0.22	-0.13	-0.18	0.30	0.25	-0.04	1.21
Q4	0.13	0.19	2.22	0.25	-0.45	-0.26	0.17	1.09
2002 Q1	0.23	0.34	-4.84	-0.40	0.72	0.47	-0.55	0.08
Q2	0.46	0.50	1.21	0.22	0.49	1.16	0.49	0.81
Q3	0.36	0.41	0.85	0.37	0.35	0.15	0.11	1.61
Q4	0.10	0.24	1.41	-0.19	0.01	1.02	-0.09	1.09
2003 Q1	0.03	0.20	3.44	-0.55	0.30	-0.33	0.22	2.81
Q2	0.00	0.19	-3.97	-0.15	-0.09	0.74	-0.33	0.63
Q3	0.51	0.59	-0.52	0.49	0.76	0.98	0.22	0.78
Q4	0.62	0.74	2.10	0.37	0.64	0.49	0.58	1.34

Table continued on next page

¹¹⁸ Iceland does not show quarterly data before 1997.

¹¹⁹ The latest data are preliminary figures and may be subject to minor adjustments.

¹²⁰ The data for Finland is subject to some revision.

¹²¹ Greece does not show quarterly data before 2000.

Chapter 5. Economic and Monetary Union (The Euro)

Table continued from previous page

	EU	Euro-zone	Iceland	Germany	France	Finland ¹²²	Netherlands	Greece
2004 Q1	0.58	0.71	6.92	0.28	0.49	1.30	1.15	1.13
Q2	0.49	0.56	-1.04	0.08	0.73	0.88	0.42	1.67
Q3	0.36	0.36	0.22	-0.15	0.33	0.60	0.49	0.68
Q4	0.34	0.48	4.65	-0.01	0.84	1.40	0.20	1.03
2005 Q1	0.24	0.28	2.46	0.14	0.30	-0.08	0.10	-1.00
Q2	0.68	0.76	-0.92	0.58	0.28	0.57	1.16	0.78
Q3	0.66	0.68	3.30	0.69	0.62	1.72	0.89	1.26
Q4	0.54	0.62	2.44	0.21	0.55	0.71	0.45	1.97
2006 Q1	0.80	0.93	-0.76	0.85	0.61	1.63	0.82	-0.06
Q2	1.12	1.04	-1.07	1.48	1.07	1.25	1.54	1.98
Q3	0.63	0.65	2.41	0.92	0.04	0.84	0.22	1.16
Q4	0.87	0.86	5.77	1.00	0.66	1.00	0.82	0.63
2007 Q1	0.79	0.83	-5.11	0.32	0.75	1.26	1.14	1.80
Q2	0.40	0.47	6.47	0.32	0.40	1.04	0.71	0.69
Q3	0.61	0.63	2.56	0.80	0.67	0.70	0.84	0.84
Q4	0.34	0.46	-1.77	0.14	0.30	0.67	1.49	0.52
2008 Q1	0.80	0.78	2.88	1.59	0.49	0.22	0.95	0.67
Q2	-0.31	-0.18	-6.03	-0.57	-0.44	0.92	-0.04	0.62
Q3	-0.41	-0.47	1.76	-0.32	-0.24	0.19	-0.76	0.13
Q4	-1.90	-1.93	3.22	-2.44	-1.52	-4.12	-1.03	-0.69
2009 Q1	-2.46	-2.43	-5.10	-3.54	-1.36	-4.90	-2.43	-0.53
Q2	-0.12	-0.25	-0.42	0.44	0.33	-0.28	-1.01	-0.09
Q3	0.42	0.31	-5.68	0.73	0.26	0.30	0.45	-0.42

Source: OECD (2010)

In order to interpret the data shown in Table 13 (above and on previous page), we have calculated the correlation¹²³ between various periods and areas, shown in Table 14 on next page.

¹²² The data for Finland is subject to some revision.

¹²³ The correlation coefficient ranges from -1 to 1 . A value of 1 implies that a linear equation describes the relationship between X and Y perfectly, with all data points lying on a line for which Y increases as X increases. A value of -1 implies that all data points lie on a line for which Y decreases as X increases. A value of 0 implies that there is no linear correlation between the variables.

Table 14. Correlation of quarterly growth data in the EU, Iceland, and selected countries

Based on the data in Table 13 on the previous two pages.
 “Q” for yearly quarters (3-month periods).

Correlation for 1997Q2 - 2009Q3:	
Correlation EU-Euro Area ¹²⁴	0.99
Correlation EU-Iceland	0.11
Correlation Euro Area-Iceland	0.11
Correlation Euro Area-Germany	0.91
Correlation Euro Area-France	0.88
Correlation Euro Area-Finland	0.90
Correlation Euro Area-Netherlands	0.86
Correlation Iceland-Germany	0.10
Correlation Iceland-Finland	0.09
Correlation Iceland-France	0.09
Correlation Iceland-Netherlands	0.20
Correlation Finland-France	0.80
Correlation Germany-Netherlands	0.77
Correlation for 2000Q2-2009Q3 (Greece): ¹²⁵	
Correlation Euro Area-Greece	0.51
Correlation Iceland-Greece	0.12
Iceland before, during and after the 2008 crisis:	
Correlation 2002Q1 - 2007Q4:	
Correlation Euro Area-Iceland	0.04
Correlation 2004Q1 - 2009Q3:	
Correlation Euro Area-Iceland	0.24
Correlation 2008Q1 - 2009Q3:	
Correlation Euro Area-Iceland	0.05

Table 14 (above) shows that when using quarterly data, the correlations in growth and contractions in the Euro-zone business cycle are very high, including between individual member states selected for

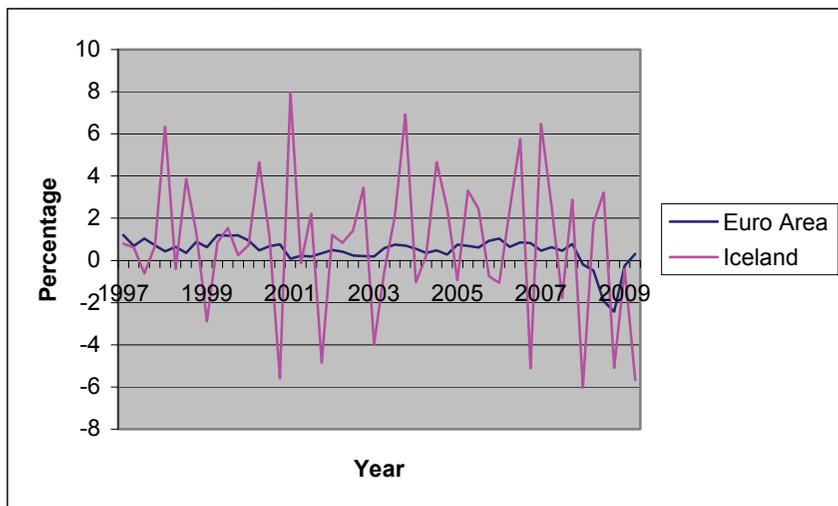
¹²⁴ “Euro-zone” and “Euro Area” are synonyms.

¹²⁵ Greece does not show quarterly data before 2000.

comparison, although somewhat less in Greece than in the other EMU members. It is also particularly noticeable that when Iceland is compared with the EU, Euro-zone, or with any of the selected EU members individually, the correlations remain low. Varying the selected periods for Iceland from 1997-2009 to e.g. 2002-2007 (pre-2008 crisis), 2004-2009, or 2008-2009 (during and after the 2008-crisis), results in a similar lack of correlation. Some would interpret these low correlations as an argument for Iceland to have a currency separate from the EU, and at the same time it supports an argument for the EU members shown in this data to have the same currency (possibly with a question about Greece, but Greece has on occasions been in the EU cooperation more for political reasons than for economic reasons). Others would emphasize that the business cycle is endogenous and would with time probably become less pronounced and more synchronized with the rest of Europe if Iceland were to join the EU; indeed, they might argue that one of the aims of Icelandic membership would be to produce such an outcome. More on this below.

The data presented in Table 13 (on pages 102-103) is supposed to be seasonally adjusted for cyclical fluctuations¹²⁶. Putting this data into a graph, shown in Figure 10 below, nevertheless shows very high cyclical fluctuations in Iceland, which is not the case in the much larger Euro-zone. A possible explanation is that the Icelandic economy is less diversified than the Euro-zone and its member states.

Figure 10. Quarterly growth in the Euro Area and in Iceland

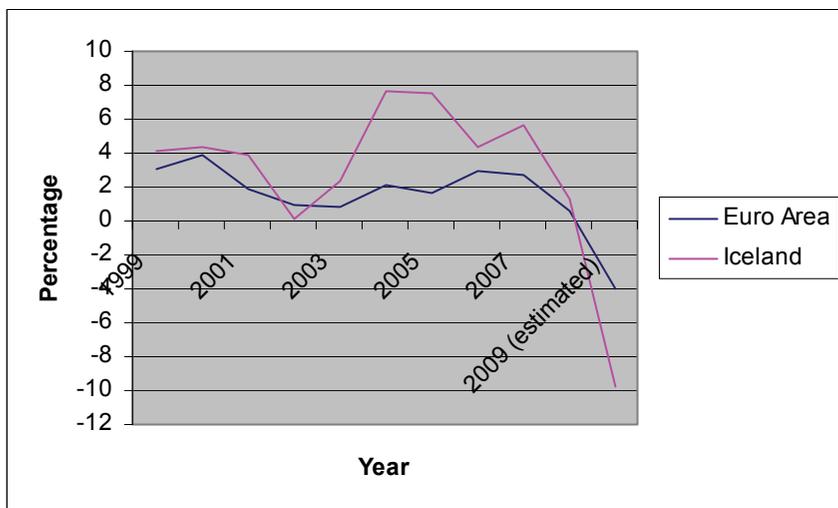


Source: OECD (2010)

¹²⁶ An example of cyclical fluctuations is seasonal fish catches.

European governments and central banks tend to base their fiscal and monetary policy interventions on economic data when quarterly information is available. Rarely do policy makers wait a whole year, as that would be too late. Nevertheless, if we compare yearly data rather than quarterly data on Icelandic growth with the Euro-zone growth, the pattern looks very different, as shown in Figure 11 below.

Figure 11. Yearly growth in the Euro Area and in Iceland



Source: Eurostat (2009 & 2010)

It may be hard to believe that Figures 10 and 11 (above and on the previous page) show in principle the same thing, i.e. comparing growth in the Euro-zone with growth in Iceland, - but they do. In Figure 10 the Icelandic economy appears to go up and down “like a needle in a sewing machine”.¹²⁷ We shall therefore also study yearly data on growth, presented in Table 15 on next two pages, which shows a somewhat different correlation than when using the more detailed quarterly data.

¹²⁷ No doubt, many EU local economies show a similar tendency, e.g. ski resorts in winter and summer periods.

Table 15. Yearly growth data comparison 1980 - 2009 (% change) and correlation. (Correlation continued on next page)

	Euro-zone	EU-15 ¹²⁸	Iceland	Germany	France	Finland ¹²⁹	Netherlands	United Kingdom
1980		1.5	5.7	1.4	1.7	5.4	2.2	-2.1
1981		0.2	4.3	0.5	0.9	1.3	-0.4	-1.3
1982		1	2.2	-0.4	2.4	3	-1.2	2.1
1983		1.8	-2.2	1.6	1.2	3	2	3.6
1984		2.5	4.1	2.8	1.5	3.1	3.5	2.7
1985		2.5	3.3	2.3	1.7	3.3	2.3	3.6
1986		2.8	6.3	2.3	2.5	2.6	3.3	4
1987		2.7	8.5	1.4	2.5	3.5	2	4.6
1988		4.2	-0.1	3.7	4.6	5.2	3.4	5
1989		3.7	0.3	3.9	4.2	5.1	4.4	2.3
1990		3	1.2	5.3	2.6	0.5	4.2	0.8
1991		1.9	-0.2	5.1	1	-6	2.4	-1.4
1992		1.1	-3.4	2.2	1.4	-3.5	1.7	0.1
1993		-0.4	1.3	-0.8	-0.9	-0.8	1.3	2.2
1994		2.8	3.6	2.7	2.2	3.6	3	4.3
1995		2.6	0.1	1.9	2.1	4	3.1	3.1
1996		1.7	4.8	1	1.1	3.6	3.4	2.9
1997		2.7	4.9	1.8	2.2	6.2	4.3	3.3
1998		3	6.3	2	3.5	5	3.9	3.6
1999		3	4.1	2	3.3	3.9	4.7	3.5
2000	3.9	3.9	4.3	3.2	3.9	5.3	3.9	3.9
2001	1.9	1.9	3.9	1.2	1.9	2.3	1.9	2.5
2002	0.9	1.2	0.1	0	1	1.8	0.1	2.1
2003	0.8	1.2	2.4	-0.2	1.1	2	0.3	2.8
2004	2.2	2.3	7.7	1.2	2.5	4.1	2.2	3
2005	1.7	1.8	7.5	0.8	1.9	2.9	2	2.2
2006	3	3	4.3	3	2.2	4.4	3.4	2.9
2007	2.7	2.7	5.6	2.5	2.3	4.9	3.6	2.6
2008	0.5	0.5	1.3	1.3	0.4	1.2	2	0.5
2009	-4.1	-4.3	-6.5	-4.9	-2.6	-7.8	-4	-4.9

Source: Statistics Iceland (2010) and Eurostat 2010.¹³⁰ (Correlation shown on next page).

¹²⁸ EU-15 represents the EU as it was before the 2004 and 2007 enlargements. Of the EU-15, Denmark, Sweden and the United Kingdom have not joined the Euro-zone.

¹²⁹ The data for Finland was slightly revised in early 2010, all the way back to 1980.

¹³⁰ There are minor differences in data between sources and occasionally data are slightly revised.

(Table 15 continued from previous page)

Correlation 1980-1994 (Pre EEA)		Correlation 1995-2009 (Post EEA)	
EU(15)-Iceland	0.06	EU(15)-Iceland	0.79
EU(15)-Germany	0.73	EU(15)-Germany	0.96
EU(15)-France	0.86	EU(15)-France	0.96
EU(15)-Finland	0.45	EU(15)-Finland	0.97
EU(15)-Netherlands	0.78	EU(15)-Netherlands	0.92
EU(15)-United Kingdom	0.53	EU(15)-United Kingdom	0.97
Germany-France	0.49	Germany-France	0.89
Finland-Netherlands	0.18	Finland-Netherlands	0.93
Correlation 1980-1999 (Pre EMU)		Correlation 1990-1999 (Pre EMU)	
EU(15)-Iceland	0.11	EU(15)-Iceland	0.45
EU(15)-Germany	0.68	EU(15)-Germany	0.55
EU(15)-France	0.86	EU(15)-France	0.93
EU(15)-Finland	0.49	EU(15)-Finland	0.54
EU(15)-Netherlands	0.76	EU(15)-Netherlands	0.86
EU(15)-United Kingdom	0.55	EU(15)-United Kingdom	0.35
Germany-France	0.46	Germany-France	0.40
Finland-Netherlands	0.33	Finland-Netherlands	0.69
Correlation 2000-2009 (Post EMU)			
Eurozone-EU(15)	1.00 ¹³¹		
Eurozone-Iceland	0.85		
Eurozone-Germany	0.97		
Eurozone-France	0.98		
Eurozone-Finland	0.98		
Eurozone-Netherlands	0.96		
Eurozone-United Kingdom	0.95		
EU(15)-Iceland	0.86		
EU(15)-Germany	0.96		
EU(15)-France	0.98		
EU(15)-Finland	0.99		
EU(15)-Netherlands	0.94		
EU(15)-United Kingdom	0.97		
Germany-France	0.92		
Finland-Netherlands	0.95		

¹³¹ 0.9973

The data in Table 15 (on the previous two pages) gives rise to several observations. Before joining the EEA, the Icelandic annual growth rate was almost completely out of step with the EU with a correlation of 0.06. After joining the EEA, Iceland shows a correlation of 0.79 compared with the EU, which is a drastic increase. At the same time all other pairs compared also showed an increase in correlation, but the full EU members have nevertheless a higher correlation than Iceland. The correlation between EMU members is extremely high, and perhaps most surprisingly, Iceland has a remarkably high correlation to the Euro-zone with 0.85. It is not surprising to see that the Euro-zone and the EU-15 are almost identical, most members being the same. However, it is surprising to see that the United Kingdom, which does not participate in the EMU, follows the same high correlation pattern as the EMU members do. Figures 10 and 11 on pages 105 and 106 show quarterly and annual cyclical output fluctuations in Iceland and in the Euro-zone. The yearly data presented in Table 15 (on the previous two pages) does not take quarterly fluctuations into account and the result is a much higher annual data correlation between Iceland and the EU than in the quarterly data shown in Tables 13 and 14 (on pages 102-104).

The fact that growth rate correlations have gone drastically up between EMU members, compared to the pre-EMU period, would be a sign that the business cycle is endogenous, i.e. that the currency union supports itself by harmonising business cycles. However, considering that the same applies to Iceland and the United Kingdom, both of which do not participate in the EMU, shows that this statement is not carved in stone. What we can say, however, is that because Iceland (and the United Kingdom) have had such harmonised growth periods compared with the Euro-zone during the last decade, an argument that the Icelandic (or British) business cycle is out of harmony with the Euro-zone does not preclude EMU membership.

5 – 4 Effects of the Economic and Monetary Union on the Icelandic Economy

Gros and Thygesen (1992), De Grauwe (1994, 2000, 2005) and several others analyse the effects of monetary integration. They see benefits from the elimination of exchange rate risk, transaction costs, and price discrimination, although the actual transition to change the currency incurs expenses. How would this influence trade in Iceland? Before going into the “Costs of Non-Europe”, the Optimum Currency Area theory, mentioned in part 5-1, merits some further attention. An Optimum Currency Area is an area neither so small and open that it would be better off pegging its currency to a neighbour, nor so large that it would be better off splitting into sub-regions with different currencies. The size of an optimum currency area could be anything from a small village, country, continent, or the whole world. The rationale behind a currency area is that if there is a shift in demand or an economic shock, areas with different currencies would be free to use their own economic tools (monetary and exchange rate policy) to adjust to the shock. In a case where a currency is pegged to a base (superpower) currency (e.g. pegged to the US Dollar or to the Euro), the currency could be revalued or devalued, and in the case of a floating currency, interest rates could be manipulated to achieve the same. However, in the case of a currency area, in order to alleviate the economic effects of a shift in demand or an economic shock, the whole burden of adjustment would fall on fiscal policy and there would have to be an adjustment in wages or movement of labour. An adjustment of wages downward in nominal terms is difficult to achieve due to the power of labour unions. Reducing wages through seignorage¹³² by printing money and thereby creating inflation, which reduces the real purchasing power of wages, is not an option in a currency union. Equilibrium could also be achieved through mobility of labour, as is the case within the EEA (and the EU), but mobility of labour is much easier to achieve within a country than between countries, which is explained by administrative burden, language, and cultural differences international migrants often face. As a critique of the Optimum Currency Area theory, it is often argued that demand shocks are often sector specific rather than country specific. In such a case a large country with a diversified economy would not solve the problem by the use of monetary or fiscal policy alone. However, as touched upon in part 5-1, in a small country such as Iceland,

¹³² Government revenue derived from their exclusive right to issue new money.

where e.g. fisheries and fisheries exports are a significant part of the economy (see Table 3 on page 44), a sector specific shock could easily become a country specific shock. In that case, freedom to adjust the currency can be helpful. Even so, with freedom to adjust monetary and fiscal policies, a small open economy like Iceland is vulnerable to exchange rate risk because a floating currency can be difficult to balance by the tools available to the government. Iceland imports many consumer goods and a drastic fall in the value of the Icelandic Krona pushes prices up and creates domestic inflationary pressure.

The Optimum Currency Area theory indicates that the costs of a common currency could be substantial unless the following conditions apply (based on Bain 2006 and Tavlas 1993):

- (a) Members have open economies;
- (b) Member have a high mobility of factors between them and/or wages and prices are fully flexible;
- (c) Members have similar short-term inflation/output trade-offs;
- (d) Members have similar views regarding the desirable position of the short-term inflation/output trade-off;
- (e) Member have similar rates of growth;
- (f) Members have similar legal and financial systems;
- (g) Members have similar fiscal systems;
- (h) Members have diversified economies;
- (i) Members have limited need for real exchange rate variability;
- (j) Members have a political will to integrate.

Now the question arises how these 10 points apply to Iceland when compared with the EU and the Euro-zone.¹³³ Concerning point (a), under the current EFTA-EEA arrangement the Icelandic economy is open to all Euro-zone members, except for agriculture, fisheries and the administrative barrier of not participating in the European Customs Union. If Iceland joins the EU, its economy will be as open as it can be, vis-à-vis other EU members. Concerning point (b), both the EEA and the EU provide for free mobility of workers and capital. This does not differ in Iceland from other EEA and EU members and will not change by full EU membership. Prices can go up and down, but wages in Iceland and the EU are relatively rigid in the sense that they can easily increase but are almost impossible to decrease in nominal terms. Concerning points (c) and (d), both the European Central Bank and the Icelandic Central Bank

¹³³ Here we only compare Iceland to the Euro-zone, not Euro-zone members to each other. The Euro-zone is a political fact and we wish to know if it might be beneficial for Iceland to join it.

have it as a goal to keep inflation low. During the last few years Iceland has failed to meet this goal, but it is still the goal. If Iceland cannot keep its inflation under control, EMU membership is excluded as discussed in part 5-2. Concerning point (e), the Icelandic growth rate and its correlation to the EU is shown in part 5-3. Compared with the EU average, growth in Iceland was relatively fast between 2000-2007, but in 2008 and 2009 Iceland had a negative growth exceeding that of the Euro-zone (figure 11 on page 106). However, this is likely to be a temporary situation. Part 5-3 indicates that growth rate is better harmonised both in the EU and in the currency union than in Iceland and this criterion seems more endogenous than exogenous. Concerning points (f) and (g), under the EEA agreement Iceland has adopted most EU rules on commerce; taxation systems are similar (VAT, income tax, etc.), although there is no official EU or EEA harmonisation of taxes; and the financial systems are comparable. Concerning point (h), Iceland has a very small economy compared with most EU members. Although its structure is similar to most of the EU, where approximately 2/3 is produced in the service sector, diversity is limited as shown in chapter 2, part 4 on Iceland. This means that a sector specific shock in the Euro-zone could be a country economic shock in Iceland. Concerning point (i), a country economic shock as pointed out under (h) above, is easier to cope with if the foreign exchange rate can be adjusted to influence prices on imports and exports. In the past, devaluations were common in Iceland, however revaluations of the Icelandic Krona vis-à-vis foreign currencies did not take place. If adjusting the real exchange rate is only used into one direction, - downwards, - it only creates inflation, which until two decades ago was endemic in Iceland. Concerning point (j), the EU has the monetary union as a political goal and has shown that it will back it up with all necessary means. After the economic collapse in Iceland in 2008, the Icelandic political will to consider abandoning the Krona as a rather unstable national currency has risen sharply. We can therefore conclude that although Iceland is much smaller than the Euro-zone, there are no fundamental economic differences, except the size and diversification of the economy. The common European currency is a part of the political goal of creating a unified Europe. As a waypoint, it may have costs involved while the Union is made up of many independent states, rather than if it were one state. If Iceland was considering a currency union with e.g. Brazil or India or China or the United States, the matter might look somewhat different.

An advantage of the Euro as a single currency that must be emphasized is the disappearance of the exchange rate risk, which in

Iceland can be significant. Many Icelandic individuals and corporations prefer to borrow money domestically in Icelandic Kronas at interest rates up to the double of the Euro-zone, rather than facing the risk of currency volatility. Although there is a free flow of capital within the EEA, the advantages of a single currency are not there. Adopting the Euro would substantially reduce the hitherto popular Icelandic practice of borrowing in low-yield foreign currencies. Corporations and individuals would save money on the single currency through the lower interest rates, but domestic Icelandic lenders (banks) would lose out as unnecessary middlemen. The total amount paid in interest on borrowed funds by Icelandic corporations and individuals is difficult to estimate because free flow of capital allowed under the EEA has pushed several enterprises and private individuals to borrow at lower interest rates in the Euro-zone, despite the currency volatility. Nevertheless, we assume that substantial amounts could be saved on interest payments. These savings would for a large part, however, be compensated for by domestic lenders losses, i.e. Icelandic savers, and would possibly have a minimal net welfare effect, except there would be more people willing to start a business on loans, which stimulates economic activity. Lower interest rates and the absence of currency volatility will as a general rule lead to increased demand for loans. This in turn is likely to stimulate over borrowing, which often leads to stock market and housing bubbles. To a certain extent, this is what happened in the 2008 Icelandic banking crisis, where the main Icelandic banks financed themselves through low interest rate foreign loans, leading to an unusually high supply of cheap capital, which eventually was spent on badly considered business deals, consumption, and a stock market and real estate bubble.¹³⁴ Apart from the above-mentioned issues, an undisputed advantage of a single currency is, as mentioned by De Grauwe, that the deadweight loss to the economy caused by banking personnel working on foreign exchange transactions would disappear, and these former bank employees could then take up jobs more beneficial to society.

Along with fisheries and agricultural policies, one of the main changes we expect if Iceland abandoned the EFTA-EEA arrangement and became a EU member would be the single currency, - the Euro. As noted

¹³⁴ As of this writing, large sums of money are unaccounted for. The owners and leading figures in the main banks used the banks to give loans to a network of corporations in their own private names, many of which are registered in offshore tax shelters. The Icelandic government has had little will and even less means to deal with the scale of the alleged frauds. One explanation is that political parties need financial sponsors and many politicians are too close for comfort.

before, it is a widely held belief that a common currency increases trade, and that increased trade increases net welfare by producing goods where they are cheapest to produce. Furthermore, combined with the total abolition of customs formalities, import-export to the EU would likely grow, although possibly at the expense of domestic trade and trade with non-EU members. One currency and total abolition of import formalities would force importers to lower their profits to the benefit of the customer who would find it simpler to buy goods wherever he/she wants within the European Union.

We should recall that Rose (2000) finds that using the same currency may increase trade by perhaps up to three times. Several studies criticized Rose on econometric grounds (see e.g. overview in part 5-1 in this study and De Grauwe 2005, p. 28).¹³⁵ Although the “Rose effect” on trade may be biased upwards, the trade effect of a Monetary Union in Europe may be in the order of 20% to 40% increase (De Grauwe 2005), which is quite significant. This increased trade contributes to a higher correlation of economic cycles amongst the trading partners, which in turn reduces the importance of having own national currency. Most importantly, trade increases net welfare, although it can be disputed how much.

Despite the uncertainties, we will attempt to give estimation of the possible long-term effect of EMU in Iceland. At the turn of the 21st century the total value of Icelandic external trade as a part of GDP ((imports + exports) / GDP) was around 80%, where value of goods represented about 50% of GDP. During the last 40 years, this figure has remained remarkably stable, with fluctuations of less than 20 percentage points up and down.¹³⁶ Icelandic trade with EEA countries, including the EU, is about 70% of all imports and exports. Not all of the EEA has (yet) adopted the Euro and Icelandic external trade with the current Euro-zone represents approximately 40% of all Icelandic external trade. Being an

¹³⁵ E.g. Persson (2001) and Nitsch (2001). Others have focused on the trade effects of monetary integration in Europe, e.g. Bun and Klaasen (2002), Micco et. al. (2003) and De Nardis and Vicarelli (2003).

¹³⁶ Breedon and Petursson (2004). Data from Statistics Iceland for the years 2000-2007 show that the balance of Icelandic external trade in goods as a part of GDP ((exports + imports) / GDP) remains approximately 50% with a yearly variation of only 5 percentage points. Preliminary data for 2008 indicate a similar percentage, and years with lower GDP are directly reflected in lower external trade. Statistics Iceland is for the time being unable to provide us with new data on external trade in services. However, we have no reason to believe that there is a substantial change since Breedon and Petursson (2004) published their findings.

island without land-borders with other European countries, it is doubtful that a common currency would increase trade as much as between neighbouring countries with a completely open land border, as is the case for most of the continental EU. Nevertheless, based on the various estimations on the effects of currency unions, combined with abolition of customs formalities, we could assume that in a couple of decades time Icelandic external trade with the EU would be 25% higher as a result of the EMU.

Based on an estimated 25% higher trade with the EU, we can use Frankel and Romer (1999) and Frankel and Rose (2000 and 2002) to estimate the benefits of this increase in trade. In this calculation we will assume that all of the EU (EEA) has the same currency.

- (1) Current external trade as part of GDP = 80% of GDP.
- (2) Current non-EU external trade is $80\% \times 30\% = 24\%$ of GDP, and is expected to remain unchanged.
- (3) Current trade with the EU/EEA is $80\% \times 70\% = 56\%$ of GDP.
- (4) New intra EMU trade will be $56\% \times 125\% = 70\%$ of GDP.
- (5) Total external trade after EMU will be $70\% + 24\% = 94\%$.
- (6) Increase in trade over GDP will be $94\% - 80\% = 14$ percentage points.

Now we can add the findings of Frankel and Romer (1999) who estimated that one percentage point increase in the ratio of trade to GDP raises income per capita by between 0.5% and 2%, and the findings of Frankel and Rose (2000 and 2002) estimating that 1% increase in trade between countries in a monetary union increases income per capita by 0.33% over a 20 year period. Rose has informed us that income per capita should be understood as GDP per capita¹³⁷. Using the lower estimate of Frankel and Rose (2000 and 2002) shows:

- (7a) $14 \text{ percentage points} \times 0.33\% \text{ increase per point} = 4.6\% \text{ increase in income per capita;}$

and using the higher estimate of Frankel and Romer (1999) shows:

- (7b) $14 \text{ percentage points} \times 2\% \text{ increase per point} = 28\% \text{ increase in income per capita.}$

¹³⁷ In this context it is interesting to note that about half of the Icelandic GDP is from wages.

Those are significant positive effects, but from 4.6% up to 28% is a big difference. This theory must be put into context of reality. The Euro notes came out in January 2002 and the “Rose effect” supposedly takes 20 years. The full “Rose effect” in the current Euro-zone is not yet there, but despite the common currency’s many benefits, the higher estimate is not likely to be realistic. Estimates vary greatly and the actual final figure could nevertheless be either lower or higher. Educated guess or “guesstimate” is perhaps a better word than estimation. We have no doubt that drastic economic improvements will continue to happen in the new EU member states in Eastern Europe and the Mediterranean, but considering that Iceland’s GDP is already over the EU average, significant increases might be more difficult to achieve. No doubt that the “Rose effect” is there, the question is just how strong it is. We shall therefore go with the lower estimate and conclude that approximately 5% higher GDP per capita is a likely long-term result of adopting the Euro in Iceland. We should also emphasise that the Euro-zone does not yet cover all of Europe. In the unlikely event that the Euro-zone would not expand further, the current EMU effects would be only half of what is shown above, i.e. 2.5%.

To support our positive estimation, Breedon and Petursson (2004) find that if Iceland joined the EU and EMU, trade with other EMU countries would increase by 60%, that the trade over GDP ratio could rise by 12 percentage points, and this would result in that GDP per capita would in the long-run be boosted by 4%. They point out that joining the EMU would cause roughly half of those effects and the other half would be from joining the EU. Breedon and Petursson (2004) also point out that if Denmark, Sweden, and the United Kingdom joined the EMU, the positive effects would be even greater, which is in fact already included in our assumption above. We would also like to draw attention to that Einarsson and Sturluson (2008) find that by adopting the Euro might increase Icelandic GDP by 6 to 8%¹³⁸ and purchasing power by 24%.

¹³⁸ Einarsson and Sturluson (2008), page 134.

5 – 5 Concluding Remarks on the Economic and Monetary Union

The EMU is still in its infancy and estimations are not easy. There are both advantages and disadvantages of a single currency. For better or worse, member states' national governments cannot single-handedly change their monetary policy. They cannot print money at will nor can they devalue the currency as they see fit in order to suit local economic demands. The single European currency has become a large European economic base, rather than a local or national political-economic instrument. The EMU is a building block of the European Union, sometimes referred to as "Euroland". As such, it is not only economically, but also politically motivated. The studies surveyed indicate that a single currency increases trade which increases net welfare. The exchange rate risk is gone, price comparison is easier, and banking expenses are reduced. Consumers and producers will find it simpler to buy goods where they are cheapest. Most economists tend to agree that the EMU has positive long-term effects and that the advantages outweigh the disadvantages. The discussion is increasingly focussed on how big the advantages are, but not a debate on if a single European currency is good or bad. We find that if Iceland joined the EMU, in the long term it will lead to a GDP that would be about 5% higher than if Iceland stays outside the EMU¹³⁹. Furthermore, individuals' benefits could be even greater. Other studies are equally optimistic. Nevertheless, the actual process of changing a currency has some costs and in the first few years after a change, it is not unheard of that the general public wrongly blames the new currency for all economic ailments¹⁴⁰.

¹³⁹ The Euro-zone does not yet cover all of Europe. In the unlikely event that the Euro-zone would not expand further, the current EMU effects would be half of this, i.e. 2.5%.

¹⁴⁰ E.g. many shops will round the new prices now marked in Euros up to the nearest Euro, rather than using Eurocents, which in reality is a price rise.