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Monetary policy regimes and the Nordic model

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Summary

In many contexts, the Nordic countries are regarded as a natural bloc of nations that have common political, cultural and economic characteristics. Open to globalisation, the small Nordic countries are exposed to strong global competition and cyclical influences. Therefore, the basis of the model may be to combine collective risk sharing and openness to globalisation. Studies of the Nordic model do not focus on the question whether the monetary policy regime is a constitutive element of the model. While the core elements of the model have proved to be quite robust and stable, the monetary regimes were exposed to fundamental changes and are quite different today.

According to the "incompatible trinity" (Mundell 1968), a country can only choose two of the three following goals: independent monetary policy, fixed exchange rates and free capital movements. As EU-member states, Finland adopted the Euro and Denmark became a member of the ERMII, pegging the Danish Crown to the Euro at a fixed rate. Contrary to a fixed exchange rate regime, the third Nordic EU-member Sweden, as like as the non-EU-member Norway, introduced flexible exchange rates combined with inflation targeting.

In his study, I explore the question whether and how the monetary policy regimes are significant to the success of the Nordic Model given the fact that monetary policies in the Nordics were designed quite differently during the past fifteen years.

In some way, all four Nordic countries have been conducting a monetary policy regime of flexible inflation targeting since the 1990s (Norway as late as from 2001). In a way, all four Nordics have limited power to conduct an independent monetary policy. In order to keep the own country's international competitiveness, they have to get help from the parties in the labour marked to adapt wage setting compatible to the external inflation target.

Contents

1. Introduction

The Nordic Countries include Sweden, Denmark, Norway, Finland and Island. In this paper we will deal with the first four countries[1]. In many contexts, the Nordic countries are regarded as a natural bloc of nations having common political, cultural and economic characteristics.

The countries represent a kind of 'societal model', a 'social and economic system', characterized by the term 'Nordic model' (Moene 2011; Andersen et al. 2007).[2] The Nordic model reveals continuity and robustness over time. It is characterised by a high level of wage equality, centralised wage negotiations, high workers security and a generous, universalist welfare state. The Nordic model rests on specific institutional arrangements and social norms. As small open economies, the Nordic countries are exposed to strong global competition, growth-enhancing technical change and cyclical influences. In this respect one can say that "... the basis of the model is a combination of collective risk sharing and openness to globalization ... collective risk sharing helps make globalization acceptable to citizens, by facilitating adjustments that allow the economy to benefit from changing markets and to raise productivity and incomes" (Andersen et al. 2007:14). The 'perception of vulnerability' as the price for openness to globalisation, but also as a driving force to growth and prosperity, is characteristic for the Nordic countries as well as for some other European small states (Katzenstein 2003).

Because of their openness, macroeconomic policy has to be coordinated with wage setting and labour market policies in order to promote international competitiveness as well as macroeconomic stability and high employment. There are, however, few studies that have focused on the question whether the monetary policy regime (including the exchange rate regime) is a constitutive element of the Nordic model. While the core elements of the model have proved to be quite robust and stable in the long run, the monetary regimes in the Nordic countries have been exposed to fundamental changes due to the process of on-going globalization. Even more, three Nordic countries joined the European Union[3], thereby

[1] Island as the smallest country with about 1,2 % of the Nordics' population has a very specialized sectoral structure with fishing and fish products as main industry (about 40 % of the country's total exports). Recently, Island suffered from a severe financial and economic crisis mainly related to policy failures at home (Sighvatsson 2012; Guðmundsson 2012).

[2] "But, as we have seen in the Nordic countries, tremendous accomplishments with respect to income distribution can be achieved with taxation and 'wage solidarity'. One might say that the future of socialism lies in emulating the Nordic social democracies. They may, however, not be easy to emulate, as the solidarity of their citizenries may be due to their homogeneity – linguistic, religious, and ethnic. Perhaps welfare states of that magnitude cannot be achieved in highly heterogeneous societies." (Roemer 2008). Sometimes, the synonymous term «Scandinavian model» is used.

[3] Denmark in 1973, Sweden and Finland in 1995. At the same time, Norway and Island together with Liechtenstein signet the association agreement "European Economic Area" (EEA). It allows to

accepting supranational, common restrictions on national budget policy autonomy. Finland became a member of the European 'Economic and Monetary Union' (EMU) in 1999, exchanging its national currency and monetary policy autonomy for a common currency and an independent, supranational monetary policy. Denmark, yet not a member of the Eurozone, is part of the European Exchange Rate Mechanism (ERM II) since 1999.[4]

In light of the fact that the Nordics have quite different monetary policy arrangements, the aim of this paper is to study whether at all, and to what extent the choice of a particular monetary policy regime in a small open economy is decisive in reaching the fundamental goals of a modern welfare economy like the Nordics.

As other empirical studies indicate, the choice of a particular monetary policy regime in itself may not be decisive for the economic performance of a country. It appears to be more important how effective the monetary policy is conducted and whether or not it is coordinated with fiscal stabilization policies and wage setting in the labour market.

Even when the role of monetary policy "in explaining the relative performance of the Nordics is limited since stability-oriented monetary policies have become increasingly widespread" (Liikanen 2007), the coordination of monetary, fiscal and wage policies may have a positive impact as compared to non-coordinated policies.

2. Monetary policy regimes

After the Second World War and the end of the Bretton Woods Agreement, a variety of different monetary policy regimes have been tried out around the world. In the 1970s and 1980s money supply targeting, theoretically founded by Milton Friedman's monetarism, became popular in countries like Germany and the USA (Benati and Goodhart, 2011). Other countries, including the small Nordic countries, focused on exchange-rate targeting (Straumann 2010). From the 1990s, (flexible) inflation targeting became popular, both in the North and in the world's biggest currency union, the EU (Laidler 2005; Straumann 2010). Today, more than 25 countries use an inflation targeting regime. The first country was New Zealand 1989. Sweden followed in 1993 and Norway officially changed from exchange rate to flexible inflation targeting in 2001 (Svensson 2011; Ball 2011; Gjedrem 2004; Hagelund 2003). Other countries joined a monetary union (as Finland did). Denmark retained its own currency, pegged to the Euro. From a European perspective we can say that from the 1990s

participate in the EU's internal marked, obliged to adopt all EU legislation related to the single market, except laws on agriculture and fisheries (http://eeas.europa.eu/eea/, accessed 10 Dec 2012).

[4] In the ERM II, the Danish National Bank is keeping the exchange rate of the Danish Crown within the narrower range of ± 2.25% against the central rate of EUR 1 = DKK 7.460 38 (http://ec.europa.eu/economy_finance/euro/adoption/erm2/, accessed 10 Dec 2012).

"Western European countries either completely abandoned their monetary independence by adopting the Euro, or they shifted to a floating regime (Straumann 2010:4).

Inflation targeting as a monetary-policy strategy "is characterized by (1) an announced numerical inflation target, (2) an implementation of monetary policy that gives a major role to an inflation forecast ...and (3) a high degree of transparency and accountability. Inflation targeting is highly associated with an institutional framework characterized by the trinity of (1) a mandate for price stability, (2) independence, and (3) accountability for the central bank" (Svensson 2011).[5]

The attribute "flexible" specifies that the target variables of the central bank not only include the announced numerical inflation rate but also other variables such as the output gap and/or the unemployment rate. In other words, the central bank not only has to stabilise inflation around its long run target rate, it also has to consider short-run cyclical imbalances in the real economy in order to stabilise production and employment around a long-term sustainable trend.

In recent years, inflation targeting as a monetary policy rule has been called into question , mainly due to "its oversight of asset bubbles and supply side shocks" (Frankel 2012a) and the lack of control of the financial sector (Laidler 2005; Arestis 2012). Nominal GDP targeting instead of inflation targeting is now launched as a nominal anchor of a rule based economic policy (Frankel 2012a; 2012b). The current period of global financial crisis (and in particular the "Euro-crisis" in Europe) is accompanied by historical low inflation and interest rates, stagnation and growing unemployment. In this macroeconomic setting, inflation targeting alone runs the risk of being ineffective. The ECB and the US Federal Reserve have recently conducted expansionary, "old fashioned", money supply policy beyond a straight rule based inflation targeting. But this topic is not further discussed here.

The Nordic model has traditionally been based on a co-ordinated interaction of centralised and solidaristic wage bargaining, accommodating flexible monetary policy, and a redistributive and labour-intensive public welfare state. Growing global competition and integration of capital markets have, however, led to fundamental change in the macroeconomic policy regime from accommodating to nonaccommodating monetary policies combined with more wage flexibility and more inequality (Iversen 2000).

According to Iversen, there are the "interactions of three macroinstitutions that *jointly* shape economic behavior and outcomes: *the collective bargaining system, the macroeconomic policy regime,* and the *welfare"* (Iversen 2000:206).

[5] The literature of the last 25 years on inflation targeting is enormous. See eg. Svensson (2011) for a review of some of this literature. According to the distinction between 'rules versus discretion' in monetary policies, inflation targeting is genuinely a rule based monetary policy regime (eg. Alesina & Stella 2011; Taylor 1993).

There seems to be an agreement in the literature that countries with large encompassing unions and a high degree of co-ordination in the wage setting generally have lower unemployment. Centralised wage bargaining and low unemployment is also a core element of the Nordic model. However, as Holden (2005) points out, the monetary regime may influence whether co-ordination is sustainable. When wage setting is uncoordinated, a strict, non-accommodating monetary policy may discipline wage setters, but at the same time reducing wage setters' incentives to co-ordinate. On the other side, an accommodating monetary policy may strengthen the wage setters' incentives to co-ordinate, and thus reduce equilibrium unemployment.

In a monetary union (i.e. Eurozone), the disciplining effect of non-accommodating monetary policy will be lower in a single member state than under a strict national monetary policy regime. But at the same time, incentives for voluntary co-ordinated wage setting at the national level are higher, resulting in lower equilibrium unemployment.[6]

This will mean that co-ordinated wage setting both in the small Euro-member Finland and the small ERMII-member Denmark may have a positive effect on unemployment. On the other side, monetary policy in Sweden and Norway, based on a rule of inflation-targeting, may be classified as non-accommodating. Here, we may expect according to Holden, that wage setting after introducing inflation targeting, has become less co-ordinated – and therefore contributed to higher equilibrium unemployment.[7] If wage setting in Norway and Sweden is still co-ordinated today, this may indicate that even the monetary policy regime can be classified as accommodating, due to a relative strong (flexible!) accommodation to unemployment compared to the numerical inflation target,

If co-ordinated wage setting in Finland and Denmark result in lower wage increases and lower inflation than in other Euro-member countries, the result over time would be increasing competitiveness due to the real depreciation effect, with positive effects on employment.

[6] As Holden (2005) comments: "In a country where co-ordinated wage restraint is at work, membership in a monetary union would reduce equilibrium unemployment as compared to having a strict monetary regime, but increase equilibrium unemployment compared to having an accommodating monetary regime. However, in countries with large wage setters, but where co-ordination of wage setting nevertheless does not work, the general results of Bratsiotis and Martin (1999) and Soskice and Iversen (2000) hold, and a stricter monetary regime involves lower equilibrium unemployment." (Holden 2005:841)

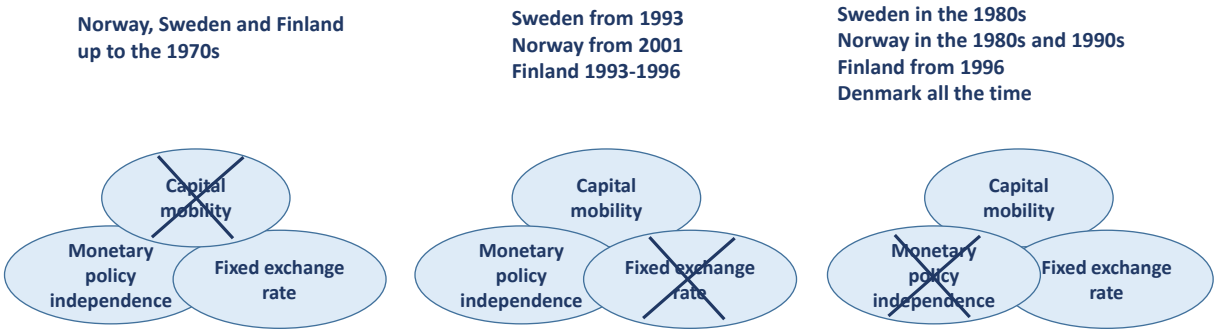
[7] The penalty for deviating from co-ordinated wage setting in this case is smaller.

3. The link between monetary policy and exchange rate regime

Monetary policy regimes and their effects have been a popular subject for economic research (Ball 2010; Benati & Goodhart 2011; Klein and Shambaugh 2010; Christensen & Lynggård 2007). At any time, different countries have chosen different regimes, and over time, countries have changed their monetary policy regimes. In particular for small open economies, the choice of the monetary policy and the exchange rate regime are two sides of the same coin. The question about the reasons and the consequences of a country's choice of monetary and exchange rate system is a complex subject. Straumann specifies the "problem of double difference" when asking for what factors determine the choice of exchange rate (and monetary) regimes in the small and advanced European countries: "... small European states differed not only with respect to their domestic institutions and policy preferences but also with respect to their external political and economic structures" (Straumann 2010:16) Rose (2011) is even more humble when he says that it is quite difficult to compare countries across exchange rate regimes empirically. "It is often hard to figure out what the exchange rate regime of a country is in practice, since there are multiple conflicting regime classifications. More importantly, similar countries choose radically different exchange rate regimes without substantive consequences for macroeconomic outcomes like output growth and inflation." (Rose 2011:1).

According to the "incompatible trinity" alias policy trilemma (Mundell 1968), a country can only choose two of the three following goals: independent monetary policy, fixed exchange rates and free capital movements (figure 1).

Figure 1: The policy trilemma



The policy trilemma is based on the familiar uncovered interest rate parity relationship, and "the constraints implied by the trilemma are largely borne out by history" (Obstfeld,

Shambaugh and Taylor 2004). Given unregulated cross-border capital movements, a small open country that operates an inflation targeting regime must accept a floating exchange rate. A country that chooses a fixed exchange rate targeting regime must accept to abandon its monetary policy autonomy.

However, the incompatible trinity hypothesis, as well as the policy implications of the corresponding Mundell-Fleming-model for a small open economy (Mundell 1968; Marrewijk 2012), focuses on the interaction of fiscal and monetary policy with the exchange rate system. A look at the Nordic countries indicates that also the wage bargaining regime, the degree of independence of the central bank and the coordination of economic policies have a significant effect on the economic outcome (Holden 2005; Straumann 2010; Iversen, Pontusson and Soskice 2000; Iversen 2000).

4. Monetary policy regimes and economic outcome

The question why countries choose different monetary policy regimes and the question whether alternative regimes perform differently regarding macroeconomic variables, has been examined in a number of studies (Ball 2011; Benati & Goodhart 2011; Klein & Shambaugh 2010; Rose 2011; Christensen & Lynggård 2007; Alesina & Stella 2011; Hagelund 2003). The results are weak and ambiguous. In a recent study, Rose (2011) argues that neither theoretical nor empirical studies provide clear and plausible arguments for which exchange rate regime is the best and deliver best results.[8] Ball in his study on the performance of alternative monetary regimes summarises that "there is little evidence that inflation targeting affects performance in advanced economies." (Ball 2011:1304) Concerning the European monetary union, Ball even claims that "divergence in national price levels may destabilize output in the future" (ibid.).This is indeed a main factor explaining the on-going Euro-crisis. Even Benati & Goodhart (2011) are not sure that the period of "the great moderation" 1993-2006, with decreasing volatilities in interest rates, inflation and output gaps, is mainly a result of a change in the monetary policy regime: "the impact of changes in the monetary policy rule is, overall, comparatively modest, whereas most of the series' volatility decreases is due to decreases in the volatilities of structural innovations." (Benati & Goodhart 2011:1201). A cross-country study from Danmarks Nationalbank for the period 1970-2005 concludes that "the level of inflation fell significantly in the years after a change of regime, regardless of whether the country changed to a consistent fixed-exchange rate policy

[8] "Choosing an exchange rate regime is choosing a monetary policy. As such, the exchange rate regime should have little effect on real long-term growth, and it does not appear to. As a monetary choice it might however have implications for inflation" But "there is no consensus on any inflationary consequences of exchange rate regimes for typical economies" "In summary, there is scant evidence that the exchange rate regime matters much for anything real." (Rose 2011:20f.)

or to inflation targeting. However, the estimated effect is greatest and most significant on the change to a fixed-exchange-rate policy. We also find that the volatility in both inflation and the output gap became significantly lower after the change to a consistent fixed-exchange-rate policy, but was not reduced by the change to inflation targeting" (Christensen & Hansen 2007). However, the study does not cover the following years of the global and European financial crisis.

In the following we will discuss the Nordic countries' choices in more detail. Finally, we will take a comparative look at some selected macroeconomic variables.

5. Monetary policy regimes in the Nordic countries

The Nordic countries, like other small open economies, have experimented with different monetary policy regimes for a long time. After the end of the Bretton Woods System, Norway has tried out six different variants of pegging its own currency to baskets of other countries' currencies (figure 2), with a subordinated Central Bank that had to support the exchange rate stability by conducting the monetary policy.During the 1970s and 1980s, almost all small European countries, including the Nordics, pegged the home currency to the so-called Snake or a currency basket (Straumann 2010, ch. 5).

In 1979, the European Union member states created the European Exchange Rate Mechanism (ERM) as a further step towards an Economic and Monetary Union. By the ERM as a semi-pegged system, national currency rates were fixed to the European Currency Unit (ECU), where fluctuations were allowed only within a narrow margin. Of the Nordics, only Denmark was already a member of the EU at that time. Then Sweden and Finland joined the European Union together with Austria in 1995. The Eurozone with the EURO as the single, common currency was launched on 1 January 1999 by at first eleven member states. Of the three Nordic EU-members only Finland entered the Eurozone from the first day, replacing its own currency Finnish Markka by the Euro.

Denmark rejected the Eurozone membership, but entered the so-called ERM II in order to remain in a state of "stand by" for an adoption of the EURO at a later time. ERM II replaced the original ERM arrangement when the EURO was established. Old EU countries that have not adopted the euro as well as new members have to participate for at least two years in the ERM II by pegging their currency to the EURO within a floating range of 15% before joining the Eurozone. Since 1999, Denmark has deliberately linked its home currency Danish Crown within ± 2.25% against the central rate of EUR 1 = DKK 7.460 38.

In terms of Mundell's incompatible trinity, this means that Denmark prefers a fixed exchange rate against the EURO rather then to retain autonomy in national monetary policy. Formally,

the Danish Central Bank is independent from the ECB in Frankfurt, but actually, the Danish interest rates have to follow the development in the Eurozone.

In 1992, Sweden and Finland were pressed to suspend their fixed exchange rates (Kleivset 2012; Gerlach 1997). These two countries had to find an operational target for the new monetary policy. Even Norway abolished the exchange rate pegged to the ECU in 1992, but went back to some kind of a fixed exchange rate system in 1994. Nine years later than Sweden and Finland, Norway finally introduced floating exchange rates combined with inflation targeting. [9] Only Denmark decided to stay in the ERM.

Both Sweden and Denmark, though members of the EU, rejected a membership of the EMU by referendum. Contrary to Denmark, Sweden also decided to stay outside the ERM II in order to maintain autonomy in choosing its own exchange rate and monetary policy regime. Norway continued to stay outside the EU after a negative referendum in 1994. Therefore a Norwegian membership in the European Monetary union was neither possible nor desired. Like Sweden, Norway could continue choosing its own exchange rate and monetary policy regime.

Today, the four Nordic countries conduct different monetary policy and exchange rate systems which will be further discussed below.

5.1. Norway

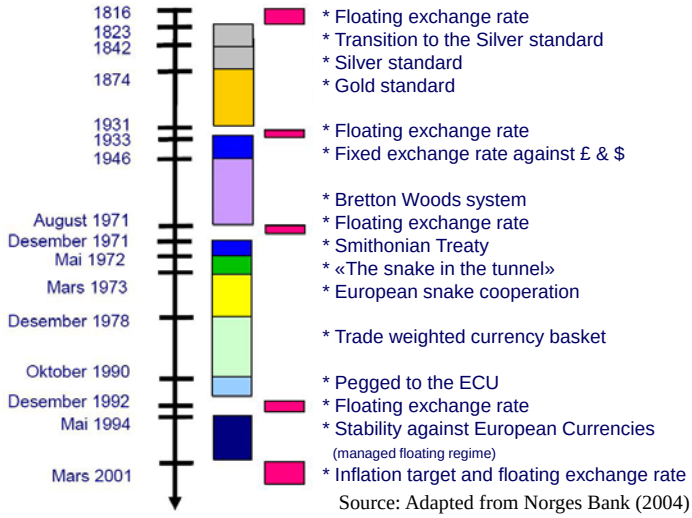
Among the Nordics, changes in monetary policy regimes after World War II may have been most striking in Norway. Therefore, we will discuss the Norwegian case in some more detail than the other three countries.

After World War II, the Bretton Woods agreement was followed by a short period of a floating exchange rate, again followed by a longer period of different variants of pegged exchange rate against baskets of other currencies until 2001 (Olsen 2011). Figure 2 shows the monetary policy regimes in Norway since 1816.[10]

Until 1935, economic policy in Norway as in other countries was based on economic liberalism, conducted by right wing governments. Monetary stability was the primary target. The post-war depression was reinforced by a contractionary monetary and interest rate policy by an independent central bank, going back to the gold parity policy and defended by Oslo University economists.[11] But this deflationary, so-called "parity policy" led to high unemployment, corporate bankruptcies and bank crashes.

[9] This may also be due to the fact that the central banks in Sweden and Finland had a greater degree of independence in their conduct of monetary policy than the central bank in Norway. (Kleivset 2012).
[10] There were four short periods with floating exchange rate regimes. A fifth period started in 2001.
[11] According to the quantity theory, decreased money supply would reduce prices and thus strengthening the purchasing power of the domestic currency. According to purchasing power parity theory, the external value of home currency then would increase relative to gold and other currencies.

Figure 2: Monetary Policy Regimes in Norway 1816 - 2012



Source: Adapted from Norges Bank (2004)

The crisis in the 1930s and a new view of economic policy in the wake of the Keynesian revolution led to a radical change in the economic policy paradigm. The Labour Party formed a government in 1935, with the slogan "Employment for everybody". Full employment became the superior objective, prior to price stability. After World War II, "... there were few objections when after liberation in 1945, the government with support of the Parliament made decisions that under the law were the responsibilities of the central bank." (Gjedrem 2008:3). The Labour Party government decided the key discount rate. Norges Bank acted as adviser, and had to implement the government's decisions.

Three periods of different monetary policy regimes followed after 1945:

(i) Low interest doctrine and credit market regulation (1945-1986)

(ii) Fixed exchange rate as nominal anchor of monetary policy (1986-2001)

(iii) Inflation targeting and floating exchange rate (2001-)

In the first period after 1945 the "Norwegian Model", a variant of the Nordic model, was formed. The overall goals of full employment and low and stable interest rates became the two leading norms or "doctrines" in Norwegian economic policy (Skånland 2004).

Thus, the monetary policy regime was indeed a core element of the Norwegian model. The policy was implemented by a central bank which was not an independent institution but under the political control of the government. "In the first decades after the Second World War, it was firmly believed that the economy could be fine-tuned in the desired direction by coordinating instruments established by the central authorities." (Gjedrem 2008:3).

The combination of credit market regulation, interest rate regulation and fixed exchange rate in a small, open market economy was – according to Mundell's 'incompatible trinity' only possible because the government also regulated cross-border capital movements.

Since the 1960s, the "Scandinavian model of inflation", in Norway also called the "Aukrust model" (Aukrust 1977), has served as a basis for analysis of the factors determining price and wage developments. In a normative perspective the Aukrust model can be viewed as a tool for determining wage increases compatible with maintaining international competitiveness in the internationally exposed sectors. Then, depending on the exchange rate regime, either the domestic inflation rate or the exchange rate is determined endogenously.

Until 2001, both the government and the main parties in the labour market preferred a stable exchange rate. The Central Bank of Norway had to control the home interest rate in order to stabilize the exchange rate in the short and medium term according to the international interest rate parity and exchange rate expectations.

Similar to Sweden, Norway deliberately pursued an expansive anti-cyclical budget policy in the international recessions in the seventies and eighties. High wage increases contributed to a deterioration of the international competitiveness of the tradable goods sector. There was no independent monetary policy authority which could curb domestic cost inflation. The effect was "internal revaluation" of the Norwegian krone and deterioration of the competitiveness of the export sector. A gradual deregulation of credit markets and abandonment of capital controls, but not of the interest rate regulation, and frequent devaluations revealed a policy model that was under great pressure. The 'incompatible trinity' became obvious: The political economy could not achieve three goals simultaneously - domestic monetary sovereignty, capital mobility, and exchange rate stability. "The importance of providing the economy with a nominal anchor became evident." (Gjedrem 2008:4).

The second period started when a new monetary policy regime was launched in 1986. The low interest doctrine was abolished. The exchange rate was to be the "nominal anchor", linking domestic inflation to inflation abroad and thereby importing price stability. The parties in the labour market had to accept the new policy strategy as a framework for future wage negotiations. In particular this meant accepting the exogenously determined rate of inflation together with a policy rule based on the theory of the "Scandinavian model of inflation".[12]

The new monetary policy of a stable exchange rate was also a core element in the so-called "Solidarity Agreement" implemented in the early nineties. This agreement can be seen as a revitalization of the "corporatist compromise" as it is based on the cooperation of four core institutions in the Norwegian political economy: the government, the Confederation of Norwegian Business and Industry, the Norwegian Confederation of Trade Unions and Norges

[12] In 1985, a new legislation 'The Norges Bank Act'was adopted which gave Norges Bank greater independence. (http://www.norges-bank.no/en/about/mandate-and-core-responsibilities/legislation/norges-bank-act/ (accessed 10 March 2012).

Bank. The Solidarity Agreement confirmed that monetary policy should be carried out by the central bank in order to guarantee and defend a stable exchange rate (Schewe 1999).

During the nineties, it became apparent that a fixed (or managed floating) exchange rate regime with the exchange rate as the nominal anchor was not optimal. Both the budget policy and the monetary policy were challenged by a special policy dilemma: Expansionary budgets leading to price and wage increases could not be counteracted by a contractionary monetary policy aimed at defending a stable exchange rate. Increasing oil prices and export surpluses, leading to appreciation pressure on the Norwegian krone, had to be accommodated by lower interest rates and vice versa. In this way, the monetary policy caused pro-cyclical instead of anti-cyclical effects. Moreover, oil price changes will cause an 'asymmetric shock' in an oil exporting economy like Norway compared to an oil importing economy like the European Union.

Therefore, both leading economists in Norway and Norges Bank advised the government to change the monetary policy target to stabilising the rate of domestic inflation instead of stabilising the exchange rate.[13]

On 29 March 2001, the government proposed "New guidelines for Norwegian economic policy" in two parts:

(1) The new 'fiscal policy guideline' contains a rule to limit the state budget deficit. The rule states that the use of petroleum revenues financing the structural non-oil budget deficit, should over time be in line with the expected real return on the Government Pension Fund Global (GPFG), estimated at four per cent yearly over the whole business cycle. In the long run, the fiscal guideline places an upper limit on the use of the country's huge petroleum revenues, thereby preventing excessive rent-seeking activities.

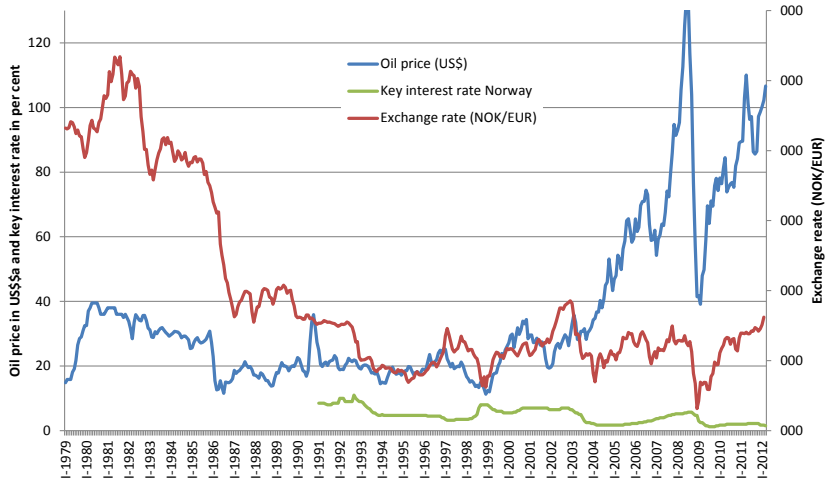
(2) With the new 'Regulation on Monetary policy', a new assignment in monetary policy came into force: instead of a stable exchange rate target, an inflation target was introduced.

Norway adapted flexible inflation targeting as a rule-based monetary policy framework and even introduced a fiscal policy rule (Olsen 2011; Kleivseth 2012). The operational target is an annual consumer price inflation close to 2.5 per cent over time, but monetary policy shall also contribute to stabilising output and employment. The flexible inflation target of 2.5 per cent represents an anchor to stabilize the expectations of inflation.

[13] "It has been demonstrated that the fixed exchange rate policy that involves linking to a group of countries with a different economic situation than our own, results in adverse fluctuations in interest rates and the real economy. Monetary policy had to get new guidelines." (Skånland 2004:124).

Norway's central bank uses the so-called 'key policy interest rate', which is the interest rate on bank deposits in Norges Bank, as its most important monetary policy instrument.[14]
One may ask whether these new policy guidelines imply a radical move away from the Norwegian (Nordic) model.
The government underlines; "While the new guidelines represent a different mandate for Norges Bank, they do not themselves imply a significant change in the conduct of monetary policy. The new guidelines for fiscal policy and monetary policy provide a good basis for maintaining a stable exchange rate ... There are no changes to the constitutional framework for monetary policy. The Government remains responsible for overall economic policy, and sets guidelines for Norges Bank's conduct of monetary policy" (New guidelines for Norwegian economic policy 2001).
According to Skånland, the former president of Norges Bank, there was a "long way to go" before an inflation target was officially in place in 2001.[15]
Today, Norway with huge oil and gas resources has become a "dual economy": While the "offshore-sector" is generating a lasting boom, high income flows and export surpluses, almost unaffected by international financial crises, the export- and import competing industries in the traditional "mainland-sector" are struggling.

Figure 3: Oilprice, exchange rate NOK/EUR and key interest rate of the Norwegian Central Bank 1979-2012



Source: West Texas Intermediate; www.norges-Bank.no. own calculations.

Therefore, monetary policy in Norway is in a dilemma between dampening domestic demand by rising interest rates on the one hand, and on the other hand stabilizing the krone's

[14] When Norges Bank started to publish interest rate forecasts, the interest rate was first modelled by a generalised Taylor rule (Taylor 1993). Later, Norges Bank used an optimal policy approach minimising a loss function. Simple rules are still used as cross-checks (Holmsen et al. 2008; Olsen 2011).
[15] "it is inconceivable that such a guideline for monetary policy could have been adopted in 1980 or 1986 and not as an alternative to the floating regime which was implemented in 1992. Besides that price stability as an end in itself yet was considered to be in conflict with the interests of employment, the inflation targeting was not tested in our part of the world. It may therefore be questionable whether it ever would had the necessary confidence-building effect." (Skånland 2004:112).

exchange rate in order to preserve competitiveness in the internationally exposed mainland sectors (Olsen 2013). The exchange rate has always been regarded as an important factor for the overall competitiveness of Norwegian industries. In the Scandinavian model of inflation, the exchange rate is a core variable. Stabilizing the exchange rate requires a low interest rate at home in line with low interest rates abroad, according to the uncovered interest rate parity theory. At the same time, low interest rates push up domestic demand at home.

Today, Norwegian monetary policy – even formally aimed at a stable inflation rate of 2.5 %. – is actually oriented towards stabilizing the exchange rate of the krone. With perfect capital mobility in a small open economy, the Norwegian interest rate has to follow the interest rates abroad according to the interest rate parity, in particular according to the EURO-rate.[16]

Like in earlier periods, monetary policy in Norway has to support the high employment policy by the government. In accordance with the theory of a small economy with flexible exchange rates (Mundell-Fleming-model), this is a challenge to Norway. Therefore, even today domestic demand, wage and price effects have to be handled by fiscal policy and income policy.

The monetary policy dilemma in the dual economy of Norway today, with a new monetary policy rule for inflation targeting, is the same as earlier in the fixed exchange rate regime: Norges Bank have to balance between the interests of the offshore and the mainland sector: the choice between stabilizing the exchange rate and inflation targeting.

So far, the leading labour market organisations are aware of this dilemma and work for moderate wage increases, even in the current, long lasting economic boom. Wage pressure is further dampened by intended labour immigration. Consumer price inflation is dampened by falling prices for Asian import goods. It is a remarkable fact that there is no inflation pressure today compared to the period in the late nineties and earlier periods.

So far, the new budgetary policy and the new monetary policy guidelines have contributed to facilitate a balanced development of the Norwegian economy by easing the pressure on interest rates, the krone exchange rate and industries exposed to international competition.

But in the Norwegian macroeconomic policy model there is still a need for a third policy rule: A corporatist income policy of centralized wage negotiations has to be continued aimed at ensuring moderate wage increases and international competitiveness of the mainland industries. Working together, this three-dimensional policy mix of coordinated budgetary, monetary and wage policies is still the real core of the Norwegian political economy today.

[16] The Norwegian krone is a natural resource based currency, and the exchange rate is highly correlated with the oil price (see figure 3). All government revenues from the oil and gas sector are transferred in the The Government Pension Fund Global, administered by the Central Bank, who invests the revenues in foreign assets abroad. In that way, a continuous huge export surplus is compensated by a corresponding capital export. It is important to note that the real exchange rate in Norway did not appreciate significantly compared to other resource-rich countries (Olsen 2013).

5.2. Denmark

After World War II, Denmark like the other Nordics, adhered to a fixed exchange regime. After the end of the Bretton Woods agreement, Denmark joined the European "Snake"-agreement in 1972, from 1979 the ERM and the European Currency Unit ECU.[17] After some discrete devaluations of the DKK in 1979-1981, the government announced in 1982 that it would not make further exchange rate adjustments. Unlike Sweden in 1993 and Norway in 2001, Denmark did not switch from the fixed exchange rate target to a national inflation targeting and floating exchange rate regime. This seemed reasonable in light of the option to join the EMU later.

When the Euro was introduced, the Danish krone joined the ERM II on 1 January 1999, and observes a central rate of 7.46038 to the euro with a narrow fluctuation band of ±2.25%. On that way, Denmark is satisfying one of the convergence criteria for entering to the euro area at any time.[18]

The Danish policy regime today is still a good example to proof Mundell's policy trilemma: "Sustainable fiscal policy and a clear distribution of responsibilities in relation to economic policy make it easier for a central bank to meet its objectives. In Denmark, this distribution of responsibilities has been specified clearly: monetary and exchange-rate policies are aimed at keeping the krone stable vis-à-vis the euro, while any specific need to stabilize cyclical fluctuations in Denmark is handled via fiscal policy or other economic policies. Successful monetary policy, whereby inflation expectations are kept at a low and stable level, requires a credible central bank that is independent of the political system in its implementation of monetary policy." (Danmarks Nationalbank 2009:3)

The main objective is to obtain low inflation at home, and the fixed exchange rate of the krone against the euro is the intermediate target for monetary policy. It is in fact the inflation target of the ECB that serves as an anchor for Denmark's monetary policy. In that way, Denmark imports price stability from a big and stable currency area. Danmarks Nationalbank's key interest rates have to mirror the key interest rates fixed by the ECB for the whole Euro area. Short term fluctuations in the exchange rate are compensated by purchasing and selling foreign exchange by the central bank. If the krone tends to strengthen or weaken, the central bank will adjust the interest rates in order to increase or reduce the interest rate differential against the Euro rate. In 2012-13 for example, the Danish key rates were fixed below the ECB rates. For the first time in its history, the Danish central bank has

[17] Denmark joined the European Union as the first Nordic country as early as in 1973. A hard peg of the Danish krone to the ECU was therefore plausible.

[18] A country must participate in the mechanism without severe tensions for at least two years before it can qualify to adopt the euro.

set one of its key interest rates negative in order to defend a stable exchange rate (Jørgensen and Risbjerg 2012).

5.3. Finland

The economic development after World War II was characterized by a predominant economic integration with the West together with a special relationship and bilateral trade agreements with the Soviet Union. Finland joined the Bretton Woods agreement in 1952, and the Finnish markka became convertible in 1958. But, extensive financial regulation of interest rates, the money market, and capital flows maintained until the 1980s. A deregulation of the financial markets started in the 1980s which culminated in a financial crisis in 1991 and economic recession, not unlike the development of the Nordic neighbours. Similar to Sweden, the Finnish currency was allowed to float from 1992, and the monetary regime changed to inflation targeting from 1993 to 1996.[19] Inflation targeting became accepted, and the policy produced the desired results in terms of stabilizing inflation at a low level and even stabilizing the exchange rate of the "Finnish markka" (Pikkarainen et al. 1997). After Finland had joined the EU in 1995, the currency was pegged to the ECU by joining the ERM in 1996. When the European Monetary Union started in 1999, Finland participated from the first day. As a part in the Euro area, Finland is no longer conducting an independent monetary policy. The key interest rates of the ECB are set by the Governing Council of the ECB which includes the Governor of the Bank of Finland as a member (Bank of Finland 2013; European Central Bank 2011). Weighting the pros and cons of the Finnish membership in the currency union[20], the governor of the Bank of Finland as late as in 2009 concluded that "... all in all, membership in the euro area has served Finland very well so far.", with the euro as stabilising factor, "... an anchor that has helped to make the whole economy more long-term oriented and less prone to cyclical fluctuations." (Liikanen 2009). It should be mentioned that this was written before the Euro crisis accelerated.[21]

Wage setting is anchored by low and stable inflation expectations and maintaining competitiveness in a longer perspective, similar to the Nordic neighbours Sweden and Norway who are "floating" but also "inflation targeting".

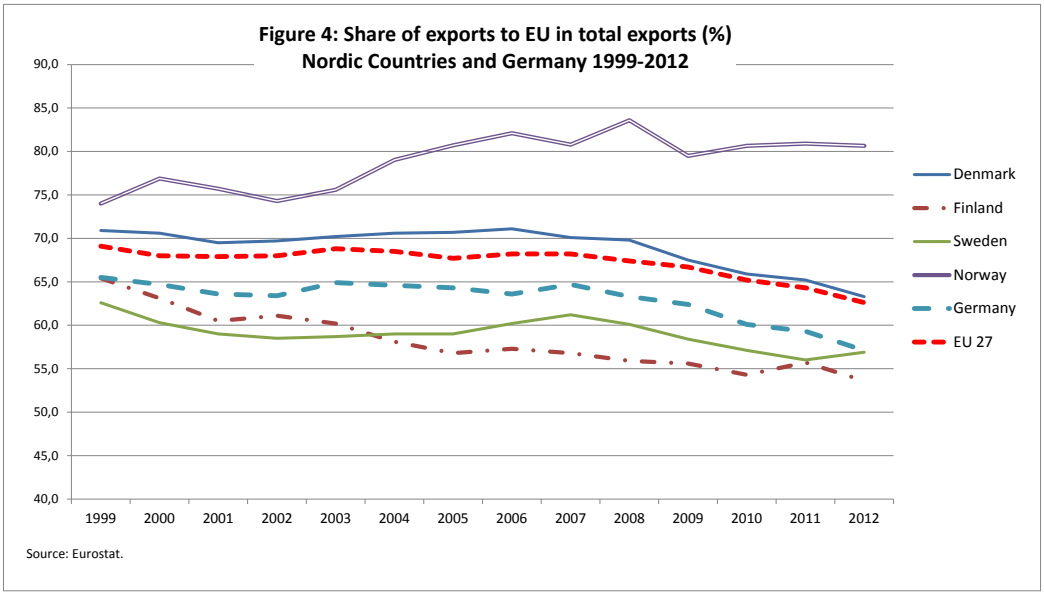
[19] The target was specified as to stabilize underlying inflation at about 2 %.
[20] For a short review of the EMU and the concept of an optimum currency area see Marrewiijk 2012.
[21] Together with Germany, Austria, The Netherlands, Finland represents the "Northern" and sound members in the EMU today. "Northern gripes. Finland and the euro crisis" The Economist 25 August 2012 (http://www.economist.com/node/21560865; accessed 25 May 2013).

5.4. Sweden

After World War II, Sweden had a fixed exchange rate. As in Norway, the fixed exchange rate regime was seriously challenged by fundamental economic imbalances during the 1980s and 1990s. Sweden devalued the krone five times, and as much as 16 % in 1982.
Sweden switched from fixed exchange rate targeting to inflation targeting with floating exchange rates as early as in 1993. In a referendum in 2003, the Swedes rejected to become a member of the EMU and to adopt the euro as its own currency. To return to fixed exchange rate targeting, by membership in the ERM II, was no longer relevant.
Interestingly, the statutory mandate in "Sveriges Riksbank Act" focus only on inflation: "The objective of the Riksbank's activities shall be to maintain price stability" without specifying a numerical target.
The Riksbank has specified a numerical inflation target as "the annual change in the consumer price index (CPI) is to be 2 per cent". Moreover, also "flexible" inflation targeting is confirmed in order to combine inflation targeting with "real economic stability":
"At the same time as monetary policy is aimed at attaining the inflation target, it is also to support the objectives of general economic policy for the purpose of attaining sustainable growth and a high level of employment" (Sveriges Riksbank 2010:5). The Riksbank does this by not merely striving to stabilise inflation around the inflation target, but also striving to stabilise the real economy, that is, production and employment. "The Riksbank thus conducts what is known as flexible inflation targeting" (Ibid.:12). Flexible here means that the Riksbank does not focus solely on inflation.

6. Macroeconomic development and different monetary policy regimes in the Nordic countries

As mentioned earlier, studies on the performance of monetary policy regimes provide no clear results. Due to the fact that the Nordic countries after 1992 chose different monetary and exchange rate policy regimes, it still makes sense to have a comparative look at selected macroeconomic variables during the last two decades.
All four countries considered are highly integrated with the European Union as measured by trade flows (figure 4). The share of exports to EU is lowest in Sweden and Finland. Both countries are even less dependent on the EU countries than Germany. It is in fact the non-EU member Norway that is most dependent on the EU as export market, even with slightly increasing shares during the last ten years.



One could argue here that it would be more appropriate for Norway to fix its own currency to the EURO, in the same way as Denmark does, in order to lower transaction costs for the exporting (and importing) companies. On the other hand, the dual Norwegian economy is exposed to asymmetric shocks vis-à-vis the Euro countries which argues for a flexible exchange rate.

Table 1: Gross domestic produkt - annual growth rates real (%) 1990-2013

	1990-1998	1999-2007	2008-2013	1990-2013 [4)]
European Union [1)]	---	2,5	-0,1	1,7
Euro area [2)]	---	2,3	-0,3	1,4
Denmark	2,4	1,9	-0,6	1,5
Finland	1,4	3,6	-0,3	1,8
Sweden	1,4	3,4	1,1	2,1
Norway	3,8	2,4	1,0	2,6
Germany [3)]	1,4	1,7	0,7	1,3
Austria	2,7	2,6	0,7	2,1

Remarks

[1)] European Union (EU6-1972, EU9-1980, EU10-1985, EU12-1994, EU15-2004, EU25-2006, EU27)

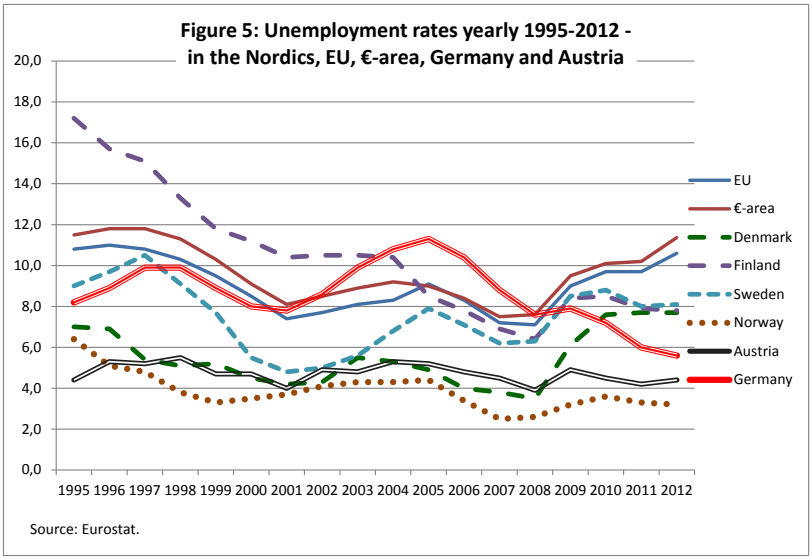
[2)] Euro area (EA11-2000, EA12-2006, EA13-2007, EA15-2008, EA16-2010, EA17)

[3)] Germany (until 1990 former territory of the FRG)

[4)] for EU and Euro area 1996-2013. For Germany from 1992.

When we compare real economic growth in the Nordics with growth in the EU, the Euro area, and to other Euro-countries (Germany and Austria), we can not find any reliable effect of the exchange rate system on growth (table 1). The small open Euro country Austria appears as strong as the resource based economy of Norway, with inflation targeting and a floating exchange rate. Moreover, a look at the yearly growth rates indicates no remarkable differences in growth volatility (Figure 8 in appendix).

Figure 5 shows the yearly average unemployment rates 1995-2012 in the Nordic countries as well as in the EU, the Euro area and in Germany and Austria.



The picture looks a bit confusing. In average, the unemployment in both the non EU-member, floating country Norway and the Euro member Austria has been lowest and most stable. The other three Nordics show decreasing unemployment rates during the whole period prior to the financial crisis, followed by the Euro crisis. Even Sweden with floating exchange rate and flexible inflation targeting, is significantly hit by the crisis. Most remarkably, Germany is experiencing sharply falling unemployment which is now lower than in three of the four Nordic countries. This seems, among other, to be result of an internal devaluation over several years.

Table 2: Harmonized indices of consumer prices (HICP). Average growth in per cent 1997-2012

	1997-2012	1997-2007	2008-2012
EU 27	3,0 %	3,2 %	2,5 %
Euro area	2,0 %	2,0 %	2,1 %
Denmark	2,0 %	1,9 %	2,4 %
Finland	1,9 %	1,5 %	2,7 %
Sweden	1,6 %	1,5 %	1,9 %
Norway	1,9 %	1,9 %	1,9 %
Germany	1,6 %	1,5 %	1,7 %
Austria	1,8 %	1,6 %	2,3 %
Source: Eurostat			

In the period of the "great moderation" after 1993, inflation rates in almost all European countries declined markedly, and even the inflation volatility decreased. Inflation in the Nordic countries in the period 1995-2012 was close, but somewhat below the price development in the whole Euro area (see table 2 above and figures 9 & 10 in the appendix). We cannot identify any significant effect on inflation from the choice of a particular monetary policy and exchange rate regime. The "floating" countries Norway and Sweden did as well as the fixed exchange rate targeting countries Denmark and Finland, and even similar to the

traditionally low inflation countries Germany and Austria. Anyway, both inflation targeting with roughly the same target rate of 2-2.5 per cent and pegged exchange rate or membership in the EMU give the same effects on inflation.

I have also calculated the "empirical" Philips-curves for the different countries that are included in the analysis of this paper. Figure 11 in the appendix indicates roughly that there are almost no significant loops which indicate a systematic interaction between unemployment and inflation. Especially in Norway and in Austria, the Philips-curves are nearly vertical.

What about the development of different monetary indicators? Let us first take a look at the development of the exchange rates.

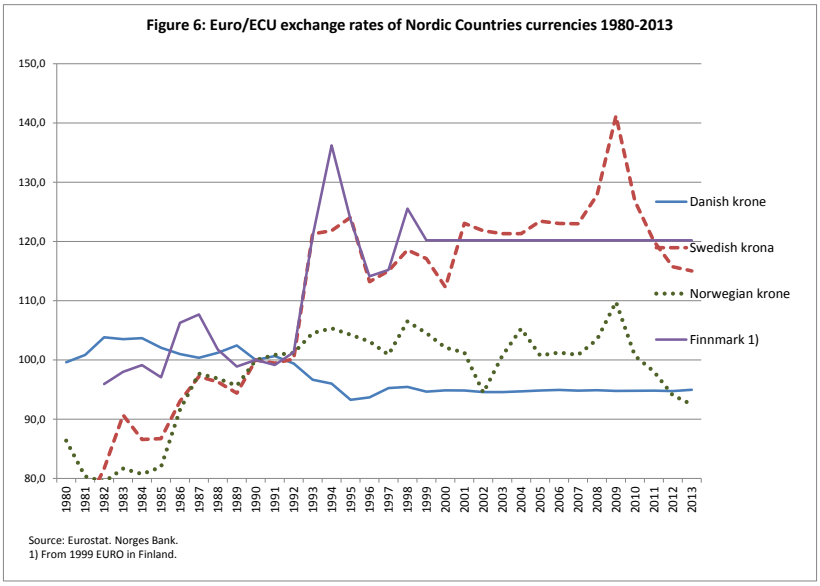
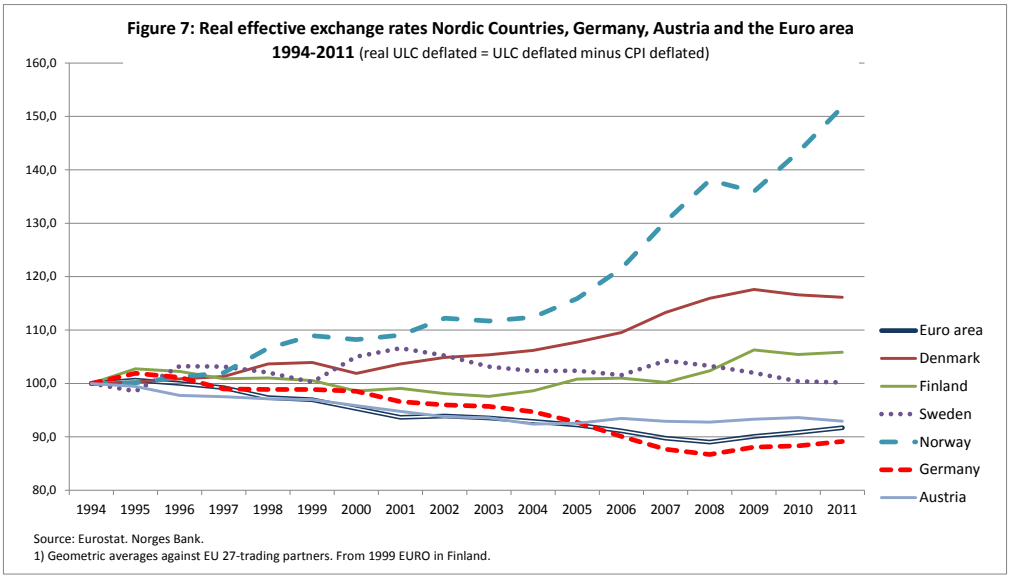


Figure 6 shows the development of the national currencies' exchange rate 1980 – 2013. After the turbulent period with high inflation rates in the 1980s, and after the following – final - choice of the exchange rate regime, the exchange rates in all four countries stabilized – in accordance with inflation rates converging at a lower level. Anyway, we can observe that Norway and Sweden show more variable exchange rates against the Euro, according to their floating exchange rate regime. Denmark managed to keep the krone quite stable to the Euro.

What can we say about the development of the international competitiveness? In the 1970s and 1980s, the Nordic countries were exposed to wage-price spirals generating a detoriation of the international competitiveness of the export sectors. They were forced to devaluate the home currency several times. After the EMS crisis in 1992-93 and the subsequent changes of the monetary policy and exchange rate regimes during the 1990s, the international competitiveness stabilized. We use the real effective exchange rate as an appropriate measure of changes in international competitiveness over time. In figure 7, we have calculated real

effective exchange rates that show the pure effect of differences in the real unit labour costs plus changes in the nominal exchange rate between the countries.[22]



We can see that the Nordic countries (except from Norway) have done pretty well, but slightly worse than Germany, Austria and the Euro area in total. This correlates with the development of unemployment too. Norway's performance is less impressive. Real unit labour costs have increased steeply in recent years, mainly due to the wage drift effect of the huge and highly profitable oil and gas sector. Whether they have chosen a national (home) inflation target rate or the supranational inflation target rate of the ECB as the nominal anchor of monetary policy, all Nordic countries have to take into account the real effective exchange rate.

7. Conclusion

In some way, all four Nordic countries have been conducting a monetary policy regime of flexible inflation targeting since the 1990s (Norway as late as from 2001). Essential similarities and differences between the countries may be as follows:

- Norway and Sweden are – both political and in reality - quite independent and autonomous. Central banks are therefore able to adapt domestic key interest rates to the economic situation at home. In that way, these two countries have solved the incompatible trinity by choosing a combination of monetary policy autonomy and flexible exchange rates. But they have to take into account the strong effect of the interest rate parity on the domestic exchange rate.

[22] See also the development of the real effective exchange rates in figure 12 & 13, with the consumer price index as deflator versus the unit labor cost index as deflator.

- Finland has solved the incompatible trinity by joining the world's biggest monetary union, abolishing the home currency Finnish markka. The influence on the ECB's monetary policy is only indirect and limited. The key interest rate of the ECB has to accommodate the economic situation in the whole currency union of 17 countries. Stabilization policy "at home" in Finland has to be conducted mainly by fiscal and wage policies. In this way, Finnish stabilization policy can affect the country's real exchange rate by "internal" devaluation or revaluation.
- Denmark did not join the EMU for political reasons. But anyhow, Denmark pegged the home currency Danish krone to the Euro as a member of the ERMII-mechanism. The Danish National Bank, politically independent, has to follow the inflation targeting policy of the ECB and cannot use an independent interest policy. Therefore, in Denmark as in Finland, stabilization policy has to be conducted mainly by fiscal and coordinated wage policies that would affect the real exchange rate and international competitiveness. Monetary policy can be characterized by "imported" inflation targeting.

In a way, all four Nordics have limited power to conduct an independent monetary policy. In order to keep the own country's international competitiveness, they have to get help from the parties in the labour marked to adapt wage setting compatible to the external inflation target. A crucial factor for influencing unemployment are the relative unit labour costs measured with the real effective exchange rates (see figure 7).

In this context, the Nordic model may have succeeded pretty well also in newer time despite the different monetary policy regimes. A combination of coordinated wage setting, low wage differences and moderate wage increases in order to keep the real effective exchange rates and thereby the competitiveness stable is still a constituent element of the Nordic model. This is probably most clearly recognized in the case of Norway. As a policy rule, "flexible" inflation targeting in Norway and Sweden allows the central banks to "accommodate" cyclical shocks in the real economy.

The data demonstrate that the Nordic countries – compared to the Eurozone in average and the southern countries in particular – have maintained a stable development of the home currency, even a slight real depreciation. Only Norway has to deal with a significant internal appreciation of its home currency that the central bank is not able to handle by interest policy. The goal of industrial, fiscal and wage policies is to preserve international competitiveness in the long run. The monetary policy may ensure either a stable exchange rate (as in Denmark) or a stable inflation rate as a nominal anchor (by inflation targeting in Sweden and Norway – and indirectly in the Eurozone-member Finland).

Viewed in a political-economic perspective, I prefer the Swedish and Norwegian regime of flexible inflation targeting by an autonomous central bank with a floating exchange rate. A membership in the Eurozone in case of Finland as like as the ERMII membership in the case

of Denmark requires homogenous political preferences and abandonment of a national monetary policy.[23]In both regimes, the focus on the control of the real effective exchange rate is crucial for stabilization policy. But at least, retaining national monetary policy control gives a small open economy an additional degree of freedom to respond flexibly to external or internal shocks.This said, it is tempting to conclude that the choice of a particular monetary policy regime is not a constituent element of the Nordic model.

At present time, and given the Euro crisis, we can not observe that the current – and different - monetary policy regimes are discussed and put into question in the Nordic countries. This may be explained by the fact that the different regimes in reality have worked rather well in the near past. In the flexible inflation targeting countries Norway and Sweden, the fixed exchange rate targeting country Denmark as well as the Euro zone member Finland, inflation targeting seems to be accepted as the nominal anchor of the monetary policy.

[23] The Danish ERMII-membership has, due to the policy trilemma, implies a loss of real monetary policy autonomy as like as in the Finnish case.

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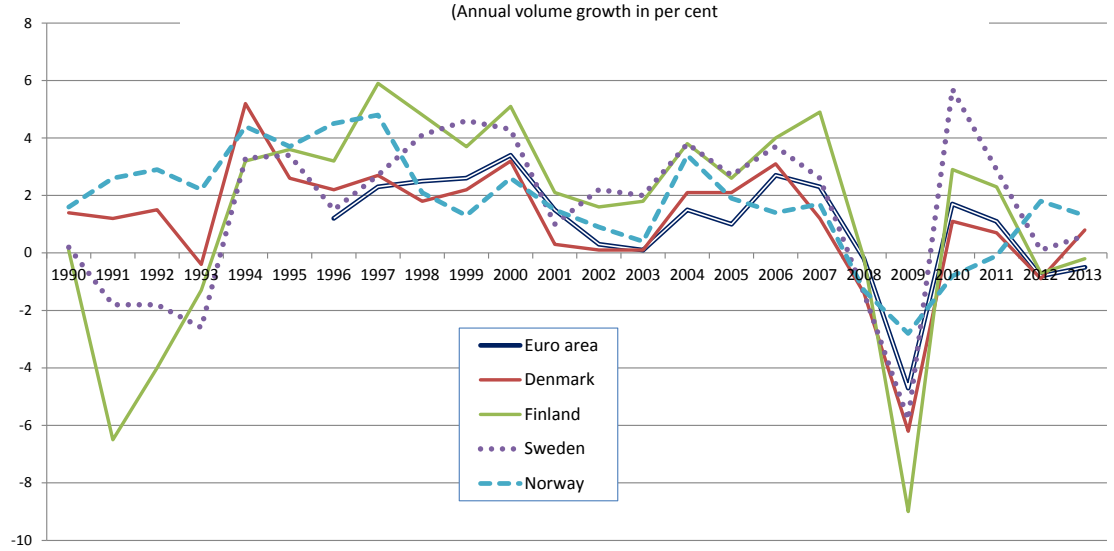
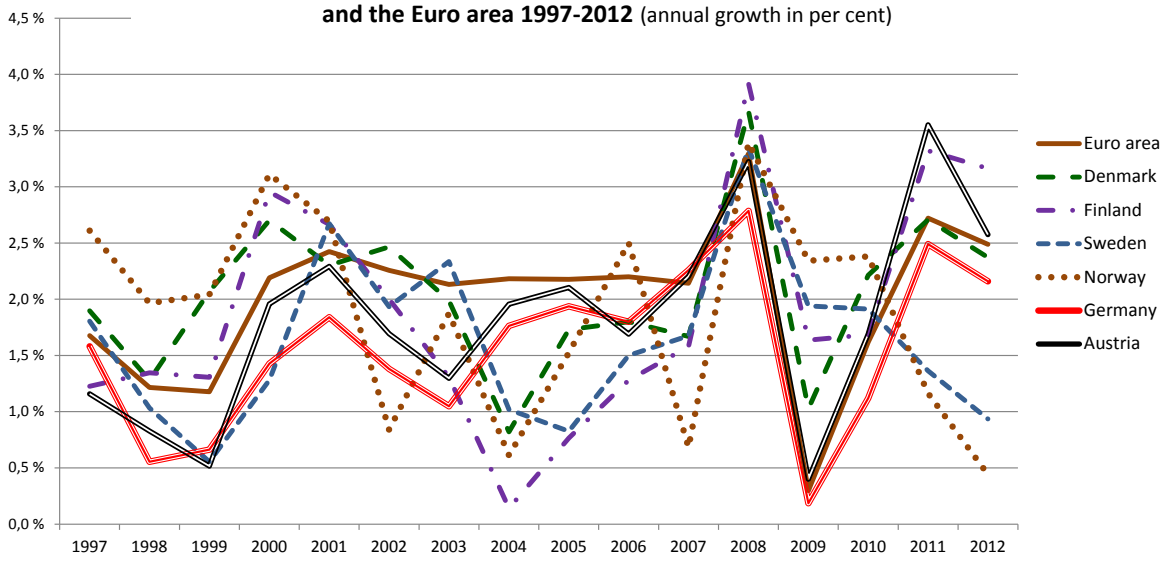
Appendix: Figures 8 - 13

Figure 8: Gross Domestic Product in four Nordic Countries and the Euro area 1990-2013
(Annual volume growth in per cent



Source: Eurostat. Norges Bank.
1) From 1999 EURO in Finland.

Figure 9: Harmonized Consumer Price Indices in the Nordic Countries, Germany, Austria and the Euro area 1997-2012 (annual growth in per cent)



Source: Eurostat.

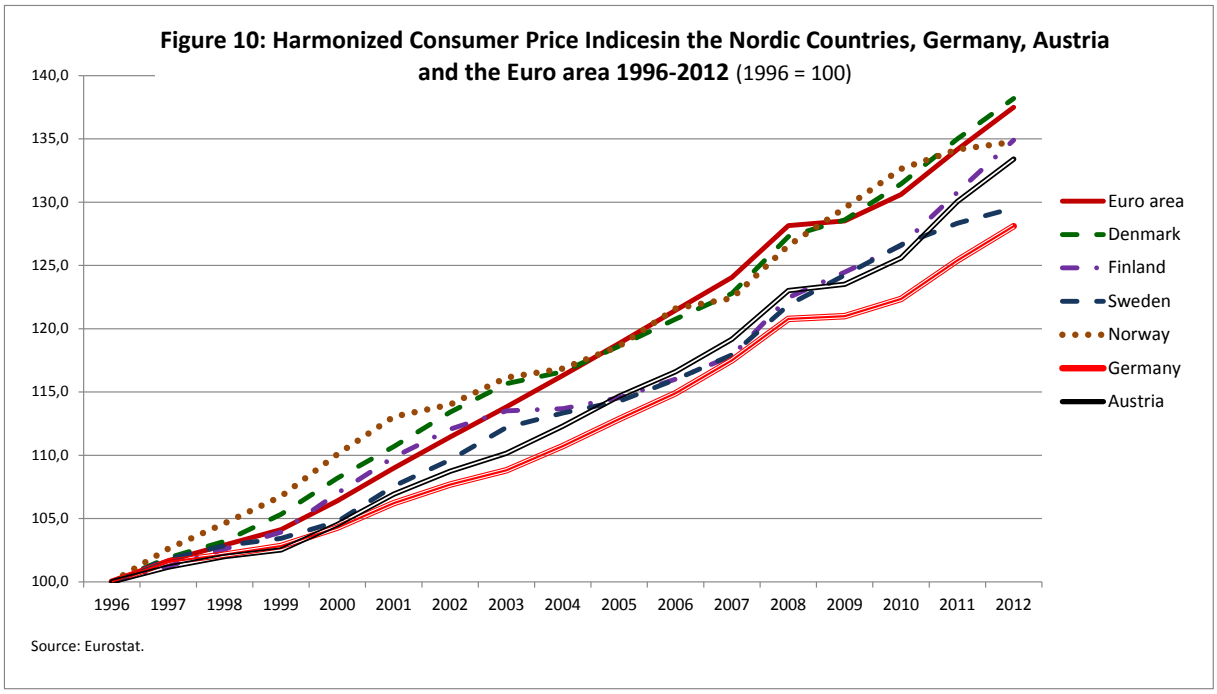


Figure 10: Harmonized Consumer Price Indicesin the Nordic Countries, Germany, Austria and the Euro area 1996-2012 (1996 = 100)
140,0
135,0
130,0
125,0
120,0
115,0
110,0
105,0
100,0
1996 1997 1998 1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012
Euro area
Denmark
Finland
Sweden
Norway
Germany
Austria
Source: Eurostat.

Figure 11

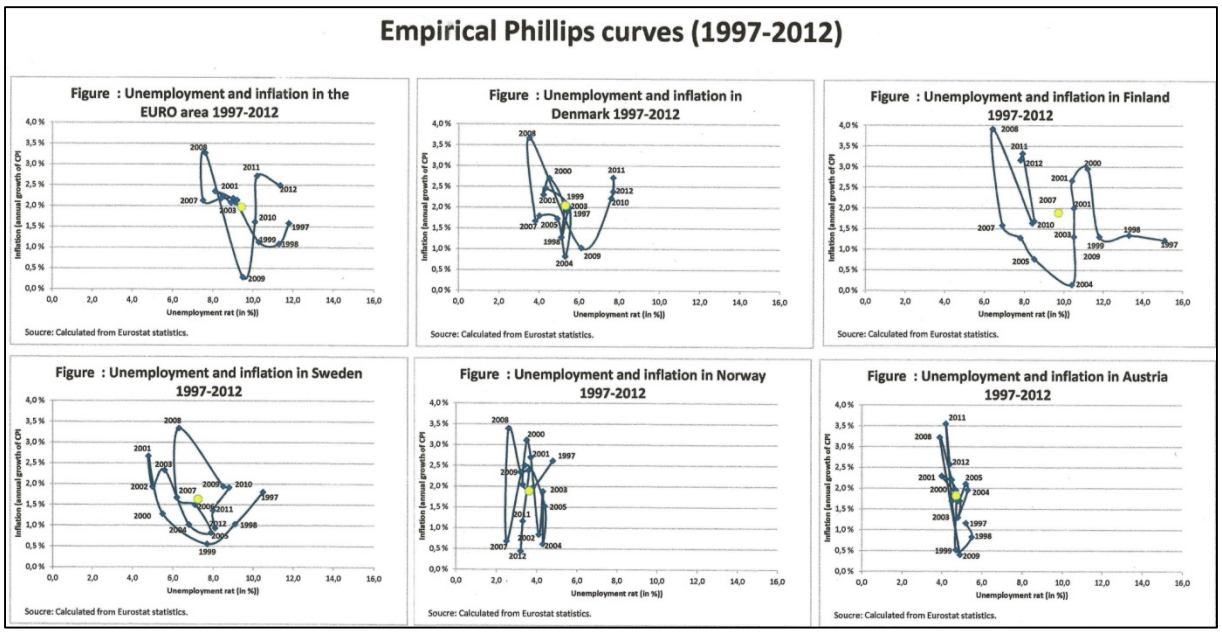
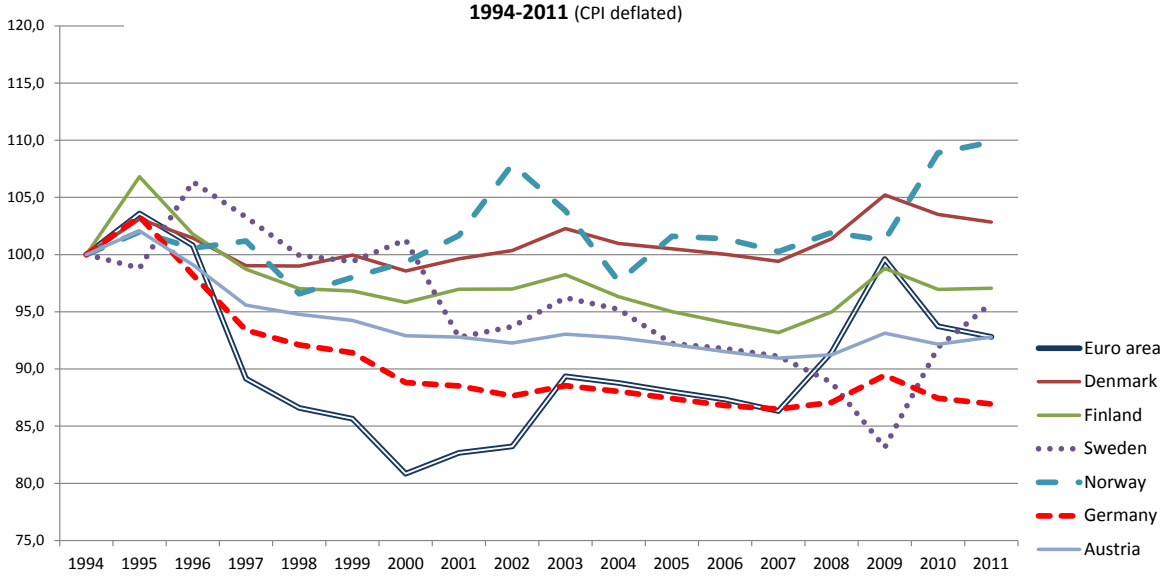
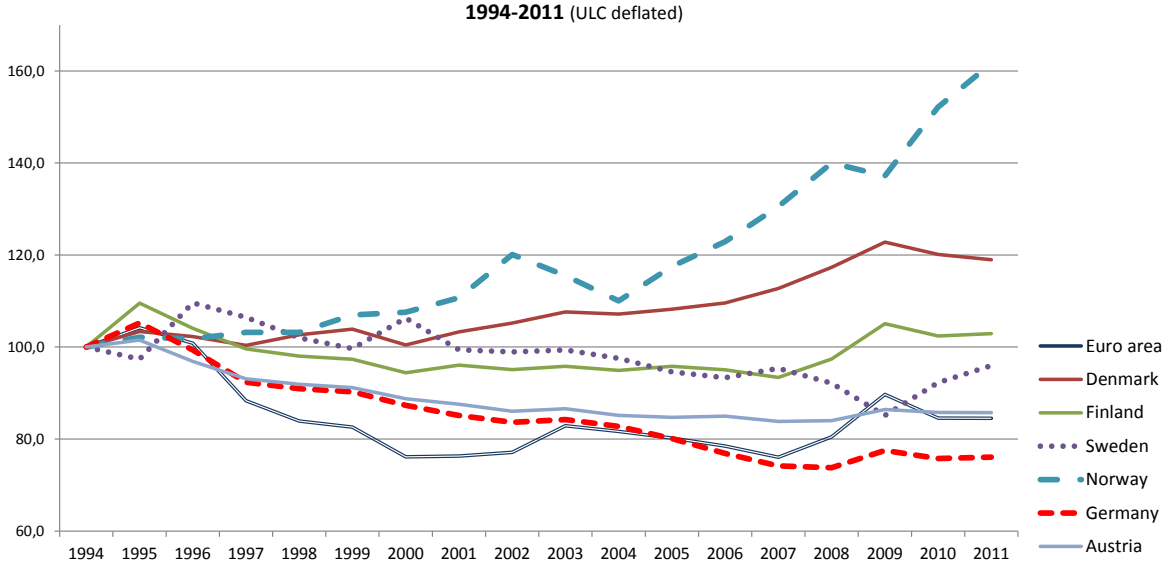

Empirical Phillips curves (1997-2012)
Figure : Unemployment and inflation in the EURO area 1997-2012
Figure : Unemployment and inflation in Denmark 1997-2012
Figure : Unemployment and inflation in Finland 1997-2012
Figure : Unemployment and inflation in Sweden 1997-2012
Figure : Unemployment and inflation in Norway 1997-2012
Figure : Unemployment and inflation in Austria 1997-2012
Unemployment rat (in %))
Source: Calculated from Eurostat statistics.

Figure 12: Real effective exchange rates Nordic Countries, Germany, Austria and the Euro area 1994-2011 (CPI deflated)



Source: Eurostat. Norges Bank.
1) Geometric averages against EU 27-trading partners. From 1999 EURO in Finland.

Figure 13: Real effective exchange rates Nordic Countries, Germany, Austria and the Euro area 1994-2011 (ULC deflated)



Source: Eurostat. Norges Bank.
1) Geometric averages against EU 27-trading partners. From 1999 EURO in Finland.