Norwegian monetary policy seen from abroad

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'Who wants transparency when you can have magic? Who wants prose when you can have poetry?' – Duke of Windsor, in the TV series 'The Crown'.

1 Introduction

The Nordic countries in Europe have many things in common, but have for various reasons chosen different strategies for their monetary policies. Finland is a member of the European Union (EU) and the euro area. Denmark and Sweden are members of the EU, but not of the euro area. Denmark has, however, chosen to peg the value of its currency to the euro, whereas Sweden has a flexible exchange rate and instead focuses on stabilizing the domestic value of its currency through an explicit inflation target. Norway and Iceland also have flexible exchange rates and inflation targets, but unlike Sweden they are not part of the EU. Being outside the EU, at least formally, these two countries have somewhat larger degrees of freedom when it comes to central bank governance.

This paper has been written on the suggestion of the Ministry of Finance in Norway and is based on a presentation made at a conference on experiences of inflation targeting organized in Oslo on 16 January 2017. The task given was to comment on monetary policy in Norway from a Swedish perspective. For obvious reasons, being a central bank official, I have chosen not to comment on the current implementation of monetary policy in Norway and Sweden. Instead, I will take a more general and long term perspective and highlight some similarities and differences between the two countries' strategies for monetary policy.

In summary, the presentation and the paper contain the following main messages. First, the facts that there have historically been small differences in nominal and real interest rates in Norway and Sweden, and, in particular, that the nominal exchange rate has been very stable, suggest that there have been small differences in monetary policies between Norway and Sweden. Second, the similarities in monetary policies can be observed despite differences in institutional frameworks, as reflected for example in central bank laws. Taken together, these first two observations probably reflect that both Norway and Sweden are highly dependent on the development in the rest of the world. Third, monetary policy in Norway and Sweden face similar challenges in the near future. The experiences during the last decade, that is, since the global financial crisis, have raised questions about the inflation targeting strategy, for example as regards the proper definition of the inflation target and the links between monetary policy, fiscal policy and financial stability.

2 How different are the frameworks for monetary policy in Norway and Sweden?

Some similarities and differences between Norwegian and Swedish frameworks are summarized in Table 1. An important similarity is that Sweden and Norway both follow the strategy called 'flexible inflation targeting'. An explicit inflation target was announced

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in Sweden in 1993 and in Norway in 2001, but the details of this strategy have developed over time. For instance, Norges Bank started to publish forecasts for their own interest rate in 2005 and Sveriges Riksbank started with this in 2007. Both central banks are considered to be among the most transparent central banks in the world, although there are some differences in their practices, and of course still room for further improvement.[1]

Table 1. Comparison of the frameworks for monetary policy in Norway and Sweden

Similarities	Differences
Explicit, but flexible, inflation targets	EU
Transparency	The degree of independence
Interest rate forecasts	Governance
Small, efficient central banks	NB has broader mandate
Separate Financial Supervisory Authorities	2.5 per cent vs 2 per cent
Fiscal rules	Communication about leaning
Small open economies	Oil

Some of the common characteristics of Norges Bank and Sveriges Riksbank may not seem directly related to the monetary policy strategy, but can arguably affect the credibility of the inflation targets. Both central banks are relatively small by international standards, and since they still perform similar tasks to other central banks, they should therefore be considered relatively efficient. A high degree of transparency and openness is also conducive to efficiency. Efficiency – and transparency – in turn should promote legitimacy for the institution and thereby credibility for the target and strategy the central bank chooses to formulate (if the target and the strategy are consistent).

Both Norway and Sweden have separate Financial Supervisory Authorities that are not part of the central bank (unlike the situation in some other countries, for example Finland and the UK). The advantages and disadvantages of such separation are subject to an international discussion among policy makers and researchers. There are arguments suggesting that coordination would lead to better outcomes for both monetary policy and supervision, but there are also arguments why separation may be beneficial (see, for example, Acharya, 2015, and Schnabel, 2016).

In both Norway and Sweden, fiscal policy is restricted by some explicit rules. In Sweden, there is a surplus target for net government lending over the business cycle. In Norway, there is instead a limit for the deficit, more precisely a limit on how much of the government pension fund, based on revenue from oil production, that can be used each year. Some macro economists have emphasized that inflation targets can be credible only in so far as the strategies for monetary and fiscal policy fulfil certain consistency requirements (see, for example, Leeper, 2016, and Sims, 2016).

The most important similarity may well be that both Norway and Sweden are small and trade-dependent economies that are heavily influenced by economic developments in the rest of the world. This puts some limits on how monetary policy can be designed, and on what it can achieve. But there are also differences in this regard. As a member of the EU, Sweden has agreed to comply with the principles of the Maastricht Treaty. This is one reason why Sveriges Riksbank has a higher degree of independence from the political system than Norges Bank. According to Swedish law, no public authority may determine how the Riksbank shall decide in matters of monetary policy, and the Riksbank's Executive Board may

1 According to Dincer and Eichengreen (2014), Norges Bank's 'transparency index' is 10.0 and Sveriges Riksbank's 14.5, whereas the average for central banks in Europe is 8.4. For suggestions as to how communication can be improved, see for example Norges Bank Watch 2016 (Lommerud et al., 2016) and Goodfriend and King (2016).

neither seek nor take instructions. In Norway, in contrast, the Government has the right to give instructions to Norges Bank.[2]

There are also other differences in the institutional frameworks for the two central banks that may have implications for how monetary policy is conducted. There are, for example, differences regarding the composition of the central banks' Boards and the roles of the Governor. The Riksbank is governed by an Executive Board consisting of six full-time employed members, the Governor and five Deputy Governors. Norges Bank has an Executive Board consisting of three internal members, the Governor and two Deputy Governors, and five external members. Norges Bank's governance model resembles that of the Reserve Bank of Australia, while the Swedish model is more similar to those in Chile, Brazil and Switzerland.

Norges Bank clearly has a much broader mandate than Sveriges Riksbank. The single largest difference between the two institutions is probably that Norges Bank manages the government pension fund based on revenues from oil production, especially considering the size of the fund (around three times the size of Norway's gross domestic product (GDP)). Norges Bank is also requested by the government to give recommendations regarding commercial banks' counter-cyclical capital buffers, in contrast to the situation in Sweden where the Financial Supervisory Authority has this role. Another example of differences in mandates is that the Norges Bank Act includes a general clause saying that 'The Bank may implement any measures customarily or ordinarily taken by a central bank'. The Sveriges Riksbank Act, in contrast, says that the Riksbank 'may only conduct, or participate in, such activities for which it has been authorised by Swedish law'.

Although central bank legislation and practices develop over time and are affected by many and time-varying circumstances, the facts that Sveriges Riksbank has both a higher degree of independence and also a more narrow mandate are probably not coincidental. Politicians and the general public may be more willing to give a higher degree of independence to a central bank (and other public authorities) as long as the mandate is not too vague or broad. For some arguments along these lines – mainly positive, not normative – see Acharya (2015) and Archer (2016).

There are also some noteworthy differences between the designs of the flexible inflation targeting regimes in Norway and Sweden. Norges Bank has a higher inflation target (2.5 per cent) than the Riksbank (2 per cent). Norges Bank has also been quite explicit, since 2012, about the fact that it, to some degree, is 'leaning against the wind' in monetary policy. This expression is used by macro economists to describe a monetary policy that not only strives to stabilize inflation and economic activity but also has the ambition to dampen risks to financial stability.[3] In Sweden, there has been a discussion about whether the Riksbank practised 'leaning' during 2010–2012 and, if so, what the effects might have been.[4] But at least since 2014, the Riksbank's monetary policy has been focused on achieving the inflation target, despite the financial instability risks identified by the Riksbank itself and, for example, the International Monetary Fund (IMF). In Table 1, the difference between Norway and Sweden in this regard has been deliberately described as 'communication about leaning'; how much of the easily identified difference in communication that is also reflected in actual policy and outcomes for for example inflation and economic activity remains an open issue.

Finally, a very important difference between Norway and Sweden is the Norwegian oil production. This difference does not only mean that the central banks face different

2 According to a certain independence index presented by Dincer and Eichengreen (2014), Sveriges Riksbank is almost as independent (0.77) as the ECB (0.81), and these central banks are much more independent than for example Norges Bank (0.47) and Bank of England (0.23). Of course, formal differences in legislation may overstate the actual differences in policy implementation. My colleagues in Norway have emphasized that the government's right to instruct Norges Bank has only been used twice since 1985. First, when the inflation target was announced in 2001, and, second, when Norges Bank received the task to give recommendations on the counter-cyclical capital buffer in 2013.

3 Woodford (2012) offers a theoretical argument for such a strategy. The literature with arguments for and against 'leaning against the wind' is too large to be described here, but recent and short summaries have been presented by Mester (2016) and Schnabel (2016).

4 See Jansson (2014) and Goodfriend and King (2016).

challenges regarding governance (because Norges Bank manages the government pension fund) and that monetary policy has to consider the effects of quite different terms-of-trade shocks – the revenues from oil production also imply quite different challenges for fiscal policy and financial stability, challenges which may also have repercussions on monetary policy.

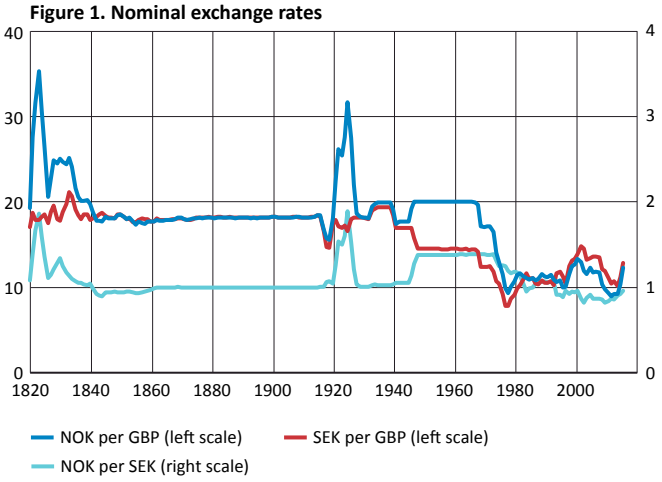
In the rest of this paper, I will come back to the differences regarding the inflation targets and oil, and to the similarity of being small open economies, but I do not have much more to say about the other similarities and differences listed in Table 1.

3 Long-term developments of nominal and real exchange rates

3.1 Exchange rates and GDP

Given that one important, and perhaps the primary, objective of monetary policy is to stabilize the value of domestic money, a natural way to measure differences in monetary policies should be to look at changes in nominal exchange rates between different currencies.[5] The countries in the euro area have the same currency and therefore a common monetary policy. But Denmark's monetary policy cannot be very different either, since Denmark has chosen to peg the value of its currency to the euro. From this perspective, it is very interesting to note that the value of the Norwegian currency (NOK) in terms of the Swedish currency (SEK) has been very close to 1 most of the time for the last two hundred years – see Figure 1. For example, the current exchange rate is very close to the level of the exchange rate in 1850. Between 1875 and 1914, Norway and Sweden were part of the Scandinavian Currency Union, so the exchange rate was fixed at exactly 1. But even during other monetary policy regimes the exchange rate has not deviated much from 1 – compared with how much nominal exchange rates between other countries with different central banks and monetary policies normally fluctuate. As can be seen from Figure 1, the values of both the NOK and the SEK have fluctuated much more vis-à-vis sterling (GBP). While the NOK/SEK exchange rate now has about the same level as during the Scandinavian Currency Union and the gold standard, both currencies have appreciated around 40 per cent since then vis-à-vis the GBP.

Figure 1. Nominal exchange rates



Sources: Bohlin (2010), Klovland (2004), Lobell (2010), Norges Bank and the Riksbank

5 To say that stability of the value of domestic money is a primary objective of monetary policy does not, of course, imply that this should be the central bank's only objective.

A common view of the development of nominal exchange rates, at least in the short run and as long as they are not deliberately fixed through a currency union or similar arrangement, is that they are unpredictable. Nominal exchange rates are often characterized as random walks. The NOK/SEK exchange rate is clearly not a random walk. It is not a coincidence that the current level is about the same as in 1850. The stability of the NOK/SEK exchange rate reflects that monetary policies in Norway and Sweden have been very similar and that differences in structure and shocks hitting the two economies have evened out over this longer period.[6]

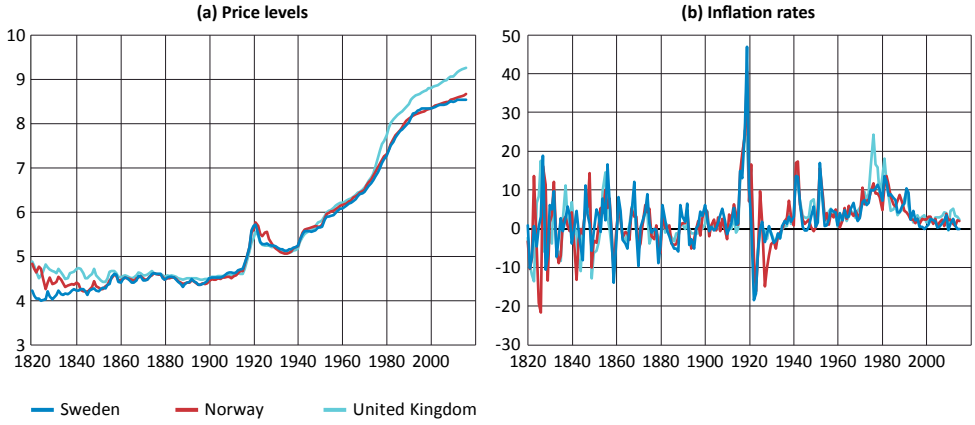
If we take a somewhat shorter perspective and focus on the development during the last fifty years, things look a bit different. Both the NOK and the SEK appreciated strongly against the GBP after the break-down of the Bretton Woods system of pegged exchange rates. But since the mid-1970s, there has been no clear trend in the NOK/GBP rate (although it has been quite volatile), while the SEK has experienced a depreciating trend vis-à-vis the GBP. This of course also means that the NOK has appreciated vis-à-vis the SEK, by around 1/3, since the early 1970s. This trend however came to a halt about twenty years ago. During the last two decades, the NOK/SEK rate again has been quite stable.

Changes in nominal exchange rates do not necessarily reflect changes in the real value, that is the purchasing power, of the currencies in question. It is a commonly held view that changes in nominal exchange rates at least partly reflect differences in inflation (that is changes in the domestic purchasing power) between the countries in question. If 'purchasing power parity' holds, nominal exchange rates adjust exactly one-for-one with changes in the domestic price level so that the real exchange rate is constant. The real exchange rate is here defined as $Q = EP^*/P$, where E is the nominal exchange rate (for example, NOK/SEK, so that higher E means a weaker NOK), P is the price level at home (for example Norway) and P^* the price level abroad (for example Sweden).

Figure 2a shows the long-run price levels in Norway, Sweden and the UK, and Figure 2b shows the corresponding inflation rates (percentage changes of the price levels). It can be seen that inflation in the UK has been higher than inflation in Norway and Sweden since the early 1970s, so against this background the depreciation in the nominal value of the GBP vis-à-vis the NOK and the SEK is understandable. But apparently differences in inflation do not tell the whole story behind changes in nominal exchange rates. The SEK has depreciated vis-à-vis both the NOK and the GBP during the last two decades, despite the fact that inflation has been lower in Sweden than in Norway and the UK.

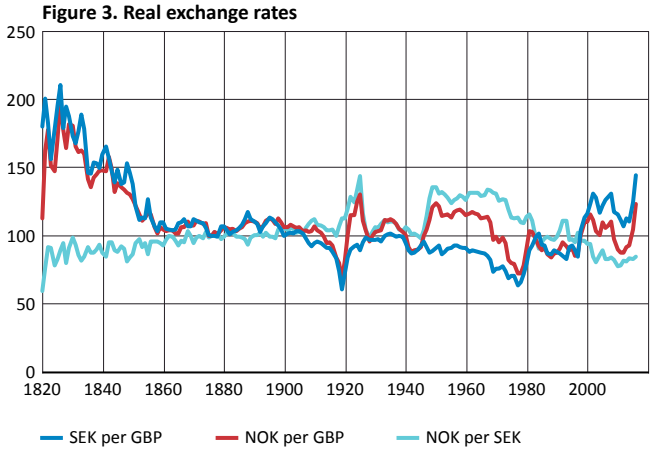
6 It should be noted that having similar inflation targets does not imply a stable level of the nominal exchange rate. With an inflation target the deviations from the target are accumulated in the price level over time, so the price level becomes a non-stationary process. This will be reflected in the nominal exchange rate between two inflation-targeting countries also being non-stationary.

Figure 2. Price levels and inflation rates



Note. The natural logarithm of index, 1875 = 100 and annual percentage change.
Sources: Edvinsson and Söderberg (2010), Grytten (2004a), Klovland (2013), Office for National Statistics, Norges Bank and the Riksbank

Figure 3. Real exchange rates



Note. Nominal exchange rates and price level indicies are indexed, 1875 = 100.
Sources: As in Figures 1 and 2

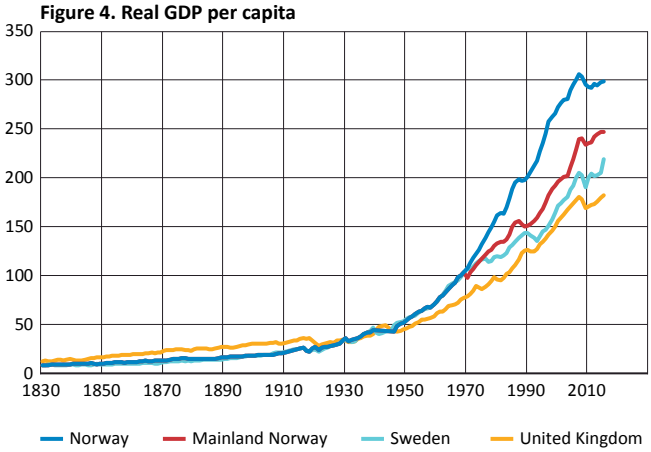
Deviations from purchasing power parity, or, equivalently, levels of real exchange rates, are shown in Figure 3.[7] It can be seen that the purchasing power, the real value, of the GBP was quite high in the early 1800s; that the real value of the SEK was quite high after the Second World War; and that the real value of the NOK has appreciated versus the SEK since the mid-1960s. In broad terms, these patterns should not be surprising. The prices of goods and services should typically be relatively high in rich countries where consumers have high incomes to spend. Industrialization occurred earlier in the UK than in Norway and Sweden, which is one reason why income, spending and prices were relatively high in the UK in the 1800s. Sweden was not directly involved in the Second World War and could therefore maintain a relatively high level of production and spending in the 1950s and 1960s. Oil discoveries in Norway have made relatively high production and spending possible during the last forty years.[8]

7 The real exchange rates in Figure 3 (Q) are just the products of the nominal exchange rates in Figure 1 (E) and the ratios of the price levels (P/P^*) in Figure 2a. In contrast to Figure 1, where the numbers on the vertical axis reflect actual prices used on currency markets, the numbers on the vertical axis in Figure 3 have no economic interpretation, because the price levels (in Figure 2a) are just indices of consumer prices measured in different ways in different countries.

8 The use of the word 'relatively' is deliberately somewhat sloppy here, in order to simplify the presentation. Sometimes it relates to a historical perspective, sometimes to a comparison across countries, or both.

The development of GDP per capita in Norway, Sweden and the UK is shown in Figure 4. Real GDP per capita is now around 35 per cent higher in Norway than in Sweden.[9] If we exclude oil production and compare the GDP level in just mainland Norway with GDP in Sweden, real GDP per capita in Norway is around 12 per cent higher. Between the first and second world wars, real GDP per capita was at about the same levels in Norway, Sweden and the UK. After the Second World War, production and income grew faster in Norway and Sweden, but the levels in these countries have grown apart since around 1970.

Figure 4. Real GDP per capita



Note. Index series, Norway 1968 = 100, levels of Sweden and UK adjusted to match Purchasing Power Parity-adjusted GDP (according to the Organisation for Economic Cooperation and Development (OECD)) 2010.
Sources: Edvinsson (2014), Grytten (2004b), Thomas and Dimsdale (2016), Bank of England, IMF, Norges Bank, Macrobond, Statistics Norway and the Riksbank

Using data that have been used in Figures 3 and 4, it is possible to establish a systematic relation between real exchange rates ($Q = EP^*/P$) and relative GDP levels (Y/Y^*) – see Figures 5a and 5b.[10] When GDP in Norway has been relatively high in relation to Sweden and the UK (*Y/Y* high*), Norway's real exchange rate has been relatively strong, or, equivalently, the prices of goods and services in Norway, measured in common currency, high (that is, *Q = EP*/P low*).[11] The correlation between real exchange rates and relative GDP levels is not perfect, of course. There are many different factors that influence the developments of both real exchange rates and GDP. Yet, the relation between relative spending and relative price levels – measured in common currency – has implications for monetary policy. I will return to this issue below, after a short digression on the role of the current account.

3.2 The development of the current account in Norway and Sweden

One variable that is commonly used in analyses of 'competitiveness' and 'equilibrium' or 'sustainable' real exchange rates is the level of the current account. Sometimes a persistent current account surplus is interpreted as a sign of an 'undervalued' currency (often in both real and nominal terms). Since both Sweden and Norway have had persistent surpluses in our current accounts during the last twenty years, while the UK has experienced persistent

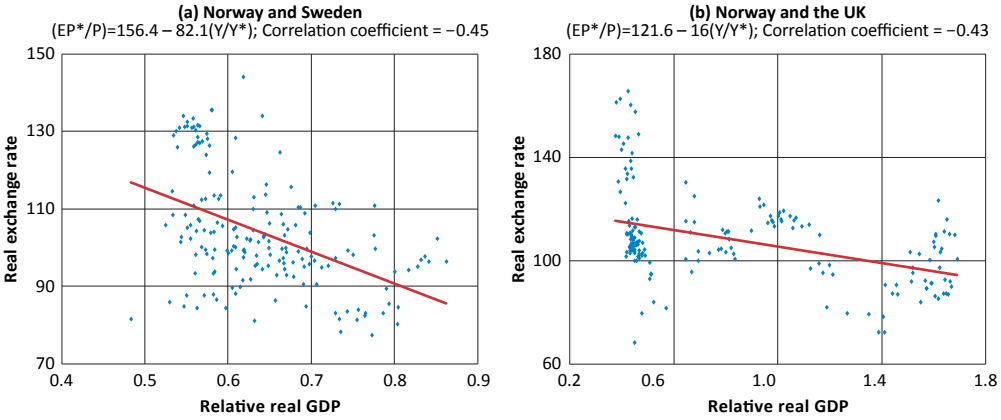
9 The GDP per capita levels in Figure 4 are based on real GDP (and population) data from each country, which means that they are also based on the use of different price indices (to compute real GDP). This makes it difficult to compare real GDP levels in different countries. The data in Figure 4 have however been scaled to match differences in purchasing power-adjusted real GDP per capita by 2010, according to estimates of such differences from the OECD. The vertical axis in Figure 4 (or, rather, the relation between the levels of series) can thus be given an economic interpretation.

10 The data in Figure 4 are GDP per capita, while the data on Y and Y* in Figures 5 a–b are based only on GDP series without any adjustments for population size.

11 The relation between the real exchange rate and the relative GDP level in Sweden and the UK (not shown) is marginally weaker than the corresponding relation between Norway and the UK.

deficits (during the last thirty years) – see Figure 6a – one may wonder why the SEK has depreciated vis-à-vis the GBP in real terms, while the real NOK/GBP rate has been relatively stable.

Figure 5. Real exchange rate and relative GDP in Norway 1830–2015

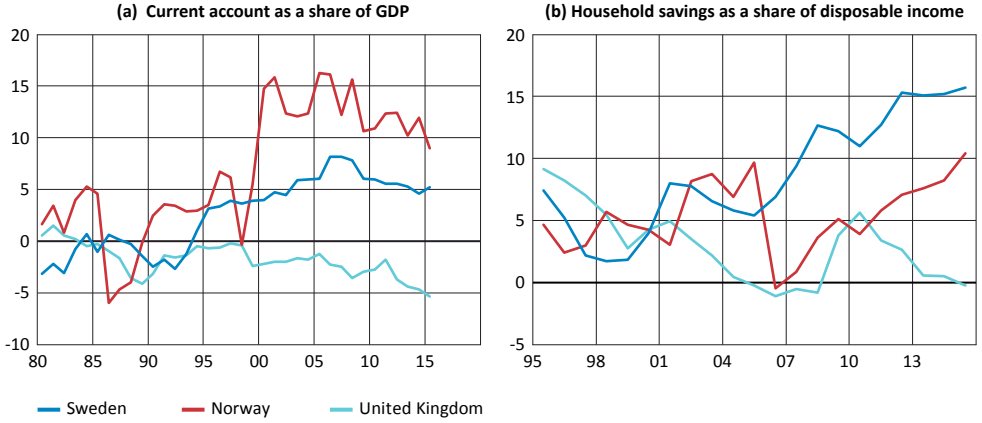


Sources: See Figures 1, 2 and 4, where Norway's GDP includes oil income

This becomes less puzzling once one considers the different factors behind the current account surpluses in Norway and Sweden. Norway's current account surpluses are mainly driven by production and exports of oil. Oil revenue enables a current account surplus and a capital outflow from Norway to the rest of the world. At the same time, this enables a current account deficit for mainland Norway, that is a capital inflow not from the rest of the world but from the Norwegian oil fields. This permits spending to be higher than income in mainland Norway and puts upward pressure on prices in Norway vis-à-vis the rest of the world, which tends to appreciate the real exchange rate.

In Sweden, by contrast, the current account surplus rather reflects a relatively low level of spending (in relation to income), both in the private and the public sector. The economic crisis in the early 1990s led to large changes in economic policy and households' behaviour in Sweden. Household savings as a share of disposable income are shown in Figure 6b. As mentioned above, fiscal policy has also aimed for positive net savings in the public sector. Hence, in contrast to mainland Norway, Sweden has thus generated a current account surplus through low spending. This is one reason why prices of goods and services have been

Figure 6. Current account and household savings



Note. Per cent of GDP and percentage of households net disposable income. Net household saving is defined as the subtraction of household consumption expenditure from household disposable income, plus the change in net equity of households in pension funds. Norway's GDP includes oil income.
Sources: IMF and OECD

relatively low (that is a depreciated real exchange) compared to both Norway and the UK.

In summary: the real appreciation of the NOK vis-à-vis the SEK during the last forty years reflects the fact that income and spending has grown faster in Norway than in Sweden, putting stronger upward pressure on prices in Norway. The main reason for the higher income and spending is the revenue from oil production, which also explains why Norway has experienced a current account surplus despite a relatively strong real exchange rate. In Sweden, both private and public savings have been high, and spending relatively low. This has resulted in a weak real exchange rate and a current account surplus.

3.3 Lessons for policy, part I

Structural factors have generated a real appreciation of the NOK vis-à-vis the SEK since the break-down of the Bretton Woods system. The NOK/SEK rate has appreciated by around 1/3, in both in real and nominal terms. In contrast, the SEK was strong in real terms during the first twenty years after the Second World War.

Monetary policy cannot do much about the need for long-term adjustments in real exchange rates (Q). Even so, monetary policy determines how much of the changes in real exchange rates that occur through changes in the nominal exchange rate (E) or through changes in relative price levels (P/P^*). Interestingly, and somewhat paradoxically, the real appreciation of the NOK/SEK rate during the first twenty years after the break-down of the Bretton Woods system, when both Sweden and Norway had the ambition to stabilize the nominal values of their currencies, took the form of a nominal appreciation of the NOK. (Inflation was higher in Sweden than in Norway, so the nominal NOK/SEK rate had to appreciate even more for the real exchange rate to appreciate.) During the recent twenty years, when both countries have had the ambition to stabilize inflation and let their currencies float, the nominal NOK/SEK rate has actually been quite stable and the real NOK/SEK appreciation has instead occurred through differences in inflation (higher inflation in Norway).

This means that the pattern of relative price adjustments between Norway and Sweden during the last twenty years largely resemble those that would have to take place in a currency union. A common view is that a disadvantage of a currency union is that changes in real exchange rates cannot take place through nominal exchange rate adjustments but instead have to occur through changes in nominal prices. The latter are assumed to be more painful. But the necessary adjustment of the real exchange rate between Norway and Sweden during the last twenty years has apparently been possible without any significant change in the nominal exchange rate. This, in turn, implies that differences in monetary policy between Norway and Sweden may not have been very important.

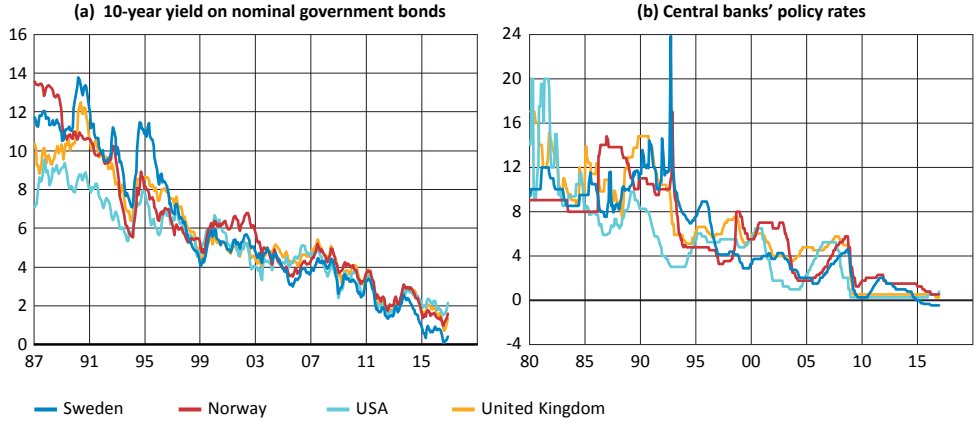
Norges Bank Watch 2016 (Lommerud et al., 2016) has raised the question whether Norges Bank's inflation target of 2.5 per cent should be lowered to the same level as in Norway's 'neighbours'. This is a question of how important it is for Norway to have a stable nominal exchange rate. With lower inflation in Norway (or higher inflation in Norway's trading partners) the real exchange rate adjustment that has been necessary would have required a larger change of the nominal value of the NOK. From this perspective, the difference between Norway's and Sweden's inflation targets – 2.5 per cent vs 2 per cent – is understandable. Higher inflation in Norway than in Sweden allows more stability in the nominal NOK/SEK exchange rate. Looking forward, it is quite possible that both Norway's and Sweden's real exchange rates will have to appreciate – given the current account surpluses in these countries. If so, stability of the NOK/SEK exchange rate could be consistent with more similar inflation targets.

4 Long-term developments of nominal and real interest rates

So far, the discussion has been mostly cast in terms of a two-country world (Norway and Sweden) with occasional references to the development in the 'rest of the world' (represented by the UK). But it is of course misleading to analyse the economic development – and monetary policy – in any small open economy as being influenced by the development in only one foreign country (or two countries). The current low levels of nominal interest rates in Norway and Sweden are not primarily the results of monetary policies in these two countries, but reflections of a long-term, global, downward trend in interest rates – see Figures 7a and 7b.

The downward trend in nominal interest rates has apparently been more persistent than central banks have expected. Figures 8a–8d show the developments of the policy rates in Sweden, Norway, the Czech Republic and New Zealand together with the forecasts of the policy rates published by the unusually transparent central banks in these countries.

Figure 7. Government bond yields and central banks' policy rates



Note. Per cent. For Norway the discount rate is used 1980–1986/02, the D-loan rate 1986/03–1993/05, and Sight deposit afterwards. For Sweden the discount rate is used 1980–1986, the marginal rate 1987–1994/05 and the repo rate afterwards.
Sources: Bank of England, Federal Reserve, Norges Bank and the Riksbank

4.1 Why have central banks made systematic forecast errors?

Data like the ones described in Figures 8a–8d of course give rise to criticism of central banks. How come the central banks make such bad forecasts even for the policy rates that they set themselves?

One possibility is of course that the data in Figures 8a–8d are not representative of central banks in general, and that the central banks that are unusually transparent have also been unusually bad forecasters. It is, however, hard to believe that central banks who have been unwilling to publish interest-rate forecasts have systematically made better forecasts. Unfortunately, such hypotheses cannot be tested.

Another possibility is that the central banks in question – and perhaps all central banks – rely too heavily on obsolete models. This has been a common critique against central banks during the last decade. Goodfriend and King (2016) have, for instance, criticized the Riksbank's use of models. That particular critique does not seem to be justified. Iversen et al. (2016), using real time data, show that forecasts from the Riksbank's models are not systematically worse than the forecasts that have been published, and that are influenced by both models and judgements. Lindé and Reslow (2017) also show that the Riksbank's forecast errors have not been mainly driven by the use of deficient models. On the other hand, it is clear that there are many weaknesses in the dominating macro models more generally – see for example Faust and Leeper (2015) and Lindé, Smets and Wouters (2016).

Figures 8a–8d should lead us to search for explanations behind the forecast errors not in peculiar models or other conditions in individual countries, but for some factors that are common to small open economies – and perhaps also larger economies – within the entire world economy. Figures 7a and 7b show that both short-term and long-term interest rates in the world economy have not only gone down but also converged. One explanation for this is that differences in monetary policies have become smaller. Most countries have had the ambition to stabilize inflation at a low level, irrespective of whether their central banks have explicit inflation targets. The downward trend in nominal interest rates partly reflects a downward trend in inflation, and the convergence partly reflects similarities in explicit or implicit inflation targets.

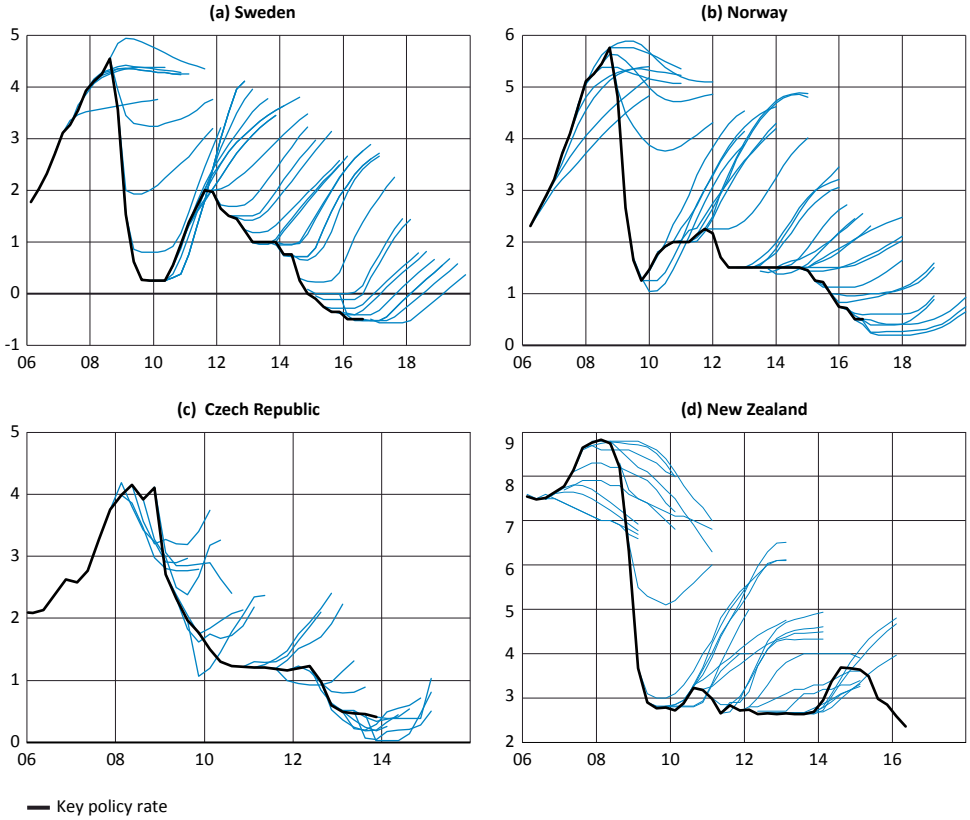
But interest rates have been trending downwards even when the development of inflation is taken into account – see the development of real interest rates in Figure 9.[12] There also seems to have been a convergence in real interest rates, although this is less obvious. The world economy has no doubt become more open, both financially and through trade of goods and services. Trade has increased faster than GDP and labour and capital mobility has also increased. This should indeed be expected to lead to a convergence of real interest rates.

The global downward trend in real interest rates has received increased attention from researchers and policy makers, see for example Rachel and Smith (2015) and Fischer (2016) for two recent summaries. Demographic changes, fiscal policies, higher inequality and higher uncertainty are factors that have all contributed to persistently lower real interest rates. There also seems to have been a slowdown in the rates of technical progress and productivity growth. These factors are partly related and often common across countries. Through trade in goods and services and mobility of production factors they are also transmitted across countries.

It is, of course, fair to ask why the downward global trend in real interest rates has come as a surprise to central banks. But the fact that Alan Greenspan talked about a 'conundrum' back in 2005 (that is before the financial crisis; see Greenspan, 2005) together with the fact that the normal level of the real interest rate is still being debated (see Rachel and Smith, 2015, and Fischer, 2016) suggests that central banks, in general, have been genuinely surprised by the low level of real interest rates, and therefore of nominal policy rates, not only in their home countries but globally.

12 There is no obvious and simple way to calculate and compare real interest rates in different countries. The data in Figure 9 are based on observed interest and inflation rates. Ideally one would like to compute real interest rates using expectations of inflation rather than outcomes.

Figure 8. Central banks' policy rates together with their forecasts



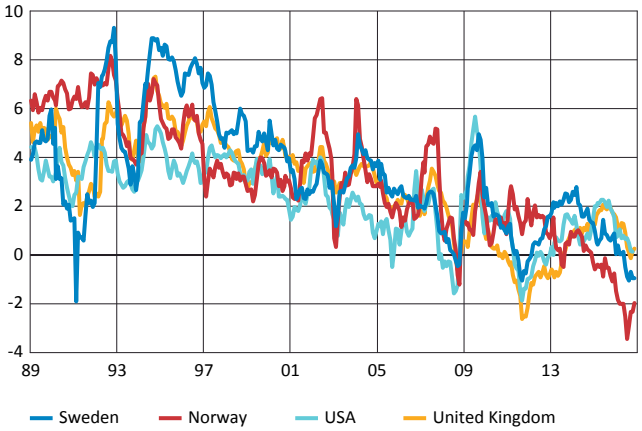
Source: Filardo and Hofmann (2014), Bank for International Settlements (BIS)

4.2 Lessons for policy, part II

When comparing policy rates and other interest rates in Norway and Sweden, it is not the differences that are striking, but the similarities. And not only the similarities between these two countries, but also the strong correlations with interest rates in the rest of the world. The currently low levels of the policy rates in Norway and Sweden are reflections of globally low interest rates. It is not surprising that the long run trends in nominal and real interest rates are strongly related across countries. The common trend in real interest rates reflects a high degree of integration of the world economy. The common trend in nominal interest rates in addition reflects a high degree of similarity in inflation targets and monetary policy strategies.

Taken together, these 'stylized facts' seem to suggest that differences in monetary policies between countries, including Norway and Sweden, have become less important over time. One reason is that the differences in monetary policy itself have become smaller. The application of some version of (explicit or implicit) inflation targeting has increased over time. Another reason is that the world economy has become more integrated. This leads to smaller differences in real interest rates and possibly less scope for monetary policy to affect the economic cycles in different countries. As all readers can observe, these conclusions are not based on very deep theoretical or empirical studies but rather speculative. More careful studies are needed.

Figure 9. Real interest rates
Per cent



Note. Difference between 10-year yield on nominal government bonds and the CPI for all countries.
Sources: Bureau of Labor Statistics, Macrobond, Office for National Statistics, Statistics Norway and Statistics Sweden

5 Challenges for monetary policy in both Norway and Sweden

In the previous sections I have argued that there are many similarities between the monetary policies in Norway and Sweden. Differences in the degree of central bank independence, governance models, levels of inflation targets, etcetera do not seem to have led to large differences in interest rates or exchange rates. One reason for this may be that both economies are small and open and highly integrated. One important difference, though, is that Norway's production of oil has led to an increasing difference between the levels of income in the two countries. Capital mobility may imply that different income levels are consistent with small differences in real interest rates, but adjustments in real exchange rates are needed in the short term since parts of the consumption baskets consist of non-traded goods.

Against this background, Norway and Sweden face similar challenges for their strategies for monetary policy – despite the higher income due to oil production in Norway.

One set of strategic questions that has received increased attention in recent years concerns the definition of the inflation target. The Bank of Canada have in their last two reviews of their inflation-targeting strategy asked whether the inflation target should be lowered or raised. Norges Bank and Sveriges Riksbank have reason to consider the same questions. These questions cannot, of course, be answered independently of the definition of the inflation target. There is an on-going discussion in both Norway and Sweden of the implications of different definitions of the inflation targets; for example about whether the targets should be expressed in terms of headline CPI or some measure of 'core' inflation (see Goodfriend and King, 2016, Lommerud et al., 2016, and Sveriges Riksbank, 2016).[13] In Sweden there is also a discussion about whether the inflation target should be combined with some interval indicating the central bank's tolerance for deviations or the general uncertainty in inflation forecasts etcetera (see Sveriges Riksbank, 2016).

Another question concerns, as we have seen, estimates of the policy rate in a steady state, that is when the effects of temporary disturbances have disappeared. If one reason for the central banks' forecast errors, shown in Figures 8a–8d is that the steady state level of the policy rate has been overestimated, the result has probably been that the policy rate

13 After this paper was written, Sveriges Riksbank reformulated its inflation target in terms of CPIF instead of CPI, which was announced on 6 September 2017.

has been higher than desirable. Finding better ways to estimate the (possibly time-varying) steady state level is thus important for a proper implementation of monetary policy.

Risks to financial stability involve further challenges. First, the risks have to be identified. Second, the implications for monetary policy have to be decided. There are no simple answers to these questions. As shown above, both Norway and Sweden have had persistent current account surpluses during recent decades. This means that the countries' net indebtedness vis-à-vis the rest of the world is not increasing but rather decreasing. The private sectors' gross debt has nevertheless been increasing. And high levels of gross debt and rapid increases in residential prices, as in Norway and Sweden, are known to be leading indicators of the risks of financial crises.

The high levels of gross private debt may be partly explained by the high levels of collective savings – accumulated in the government pension fund based on oil revenues in Norway and in the pension funds based on agreements between employers and unions in Sweden (see Nilsson et al., 2014, for a discussion of the Swedish case). These pension funds contribute positively to financial stability in Norway and Sweden by providing buffers against unfavourable developments of for example demographics or productivity. But the high degree of collective savings also, by construction, means that the private sector is more liquidity constrained compared to a situation with a larger share of individual savings. The net effect on financial stability risks, and the implications for central bank policy, should be subject to more careful analyses.

Even if high levels of private debt and rapid increases in residential prices are associated with risks to financial stability, it is not obvious that this should be the central bank's responsibility, and even if the central bank has a responsibility in this field, it is not obvious that it should have any implications for monetary policy (see for example Mester, 2016, and Schnabel, 2016 for recent reviews). New measures in the area of macro-prudential policy are often said to be the 'first line of defence' against financial instability risks. But even so, some coordination of monetary and macro-prudential policy may be beneficial. Coordination is of course simpler if these tools are handled by the same authority, as in the case of the UK and the Bank of England. In Norway and Sweden and other countries where the Financial Supervisory Authorities are not part of the central bank, other forms of coordination have to be found. In Norway, the central bank has been given the task to give recommendations on the counter-cyclical capital buffer. This has led to regular publications of assessments of financial stability in Norges Bank's reports on monetary policy. Sveriges Riksbank has no formal responsibility for macro- or micro-prudential policy but still publishes Financial Stability Reports with analyses and recommendations. There is a Financial Stability Council where representatives of the Government, the Swedish Financial Supervisory Authority, the Swedish National Debt Office and Sveriges Riksbank regularly meet to discuss issues of financial stability. In both Norway and Sweden, the interactions between the government, the central bank and the Financial Supervisory Authority will presumably be further developed in the near future.

Regarding the coordination or 'policy mix' of monetary and fiscal policy, both Norway and Sweden have made reforms during the last 15–25 years that have been focused on creating clear rules for the different policies separately, with no ambitions of coordination. Monetary policy has been reformed to establish credibility for the inflation targets and fiscal policy has been reformed to ensure a sustainable long term development of government debt. Leeper (2016) and Sims (2016), among others, have stressed the importance of formulating consistent rules for monetary and fiscal policy. Their arguments suggest that fiscal policies in Europe and elsewhere may have been too much focused on 'austerity' in recent years and that this may be part of the explanation for persistently low inflation. The implications of these analyses and arguments for monetary and fiscal policy in Norway and Sweden remain open issues. But economists at Norges Bank and Sveriges Riksbank should be able to make constructive contributions to a discussion of such issues.

An ambition to preserve a certain level of central bank independence may pose restrictions on the coordination of monetary policy with macro-prudential policy or fiscal policy. The future degree and design of central bank independence in Norway and Sweden will be thoroughly discussed in the near future, as the central bank laws in both countries are being reviewed. But even with a high degree of independence from the political system, the possibilities for both Norges Bank and Sveriges Riksbank to pursue very independent monetary policies are limited by the openness of these small economies. The implications of for example capital mobility for the effectiveness of monetary policy in Norway and Sweden deserve further theoretical and empirical studies.

Finally, both Norges Bank and Sveriges Riksbank need to evaluate their experiences from being among the most transparent central banks in the world. Publications of interest-rate forecasts (in both countries) and of detailed minutes from the Board's discussions about monetary policy (Sveriges Riksbank being more detailed than Norges Bank in this regard) should have had positive effects on the central banks' legitimacy, through improved accountability and efficiency. But the high level of precision in the communication may also have contributed to an overly optimistic view – perhaps more outside than inside the central bank – of what the 'science of monetary policy' can achieve; see Goodfriend and King's (2016) review of the case of Sweden for some critical comments. The message in the introductory quotation from the TV series 'The Crown' suggests that people often want to be 'fooled', perhaps because realism is not always pleasant, and perhaps this is true also of monetary policy. Documenting and analysing forecast errors such as those shown in Figures 8a–8d is not always pleasant. Still, being as transparent as possible about what policy, and forecasting models, can and cannot achieve is a good starting point for improving policy making and analyses. How to combine transparency with rigorous analyses while still emphasizing that both policy and analyses are associated with considerable uncertainty remains an important challenge.

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