

The Norwegian Banking Crisis in the 1990s: Effects and Lessons

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1. Introduction

The systemic banking crises in Norway, Finland and Sweden in 1991 – 1993 were extremely surprising events, both because they occurred after more than 50 years of financial stability and because they happened in well organized Nordic countries where such a terrible thing was not supposed to happen. Due to financial liberalization, pegged exchange rates, high international capital mobility and asymmetric shocks, the old macroeconomic stability properties of the Nordic countries had suddenly been undermined, but this was not understood until after the banking crises.

Nearly 20 years have now passed, and it is interesting to reflect on the economic effects of the banking crises (and their resolutions) on the banking industry and the economy. Are there lessons to be learned for other countries?

In the literature, it has been emphasized that financial crises could have seriously negative effects on the real economy, see Reinhart and Rogoff (2009). If not dealt with properly, it could paralyze the credit system and trigger a depression, or, as the case of Japan in the 1990s, lead to a lost decade. In both Finland, Sweden and Norway, however, economic growth has been impressive after 1993, but the three countries differ with respect to post-crisis unemployment persistence.

Empirical evidence strongly suggests that most financial crises have adverse effects on government deficits and debt. The recent experience of Iceland is an extreme case. There are differences between Norway, Sweden and Finland in regard to the post-crisis fiscal deficits and current account deficits, as well as the fiscal costs of the banking crises, but both Denmark, Finland and Sweden succeeded in moving into safe waters of fiscal surpluses in 1998, five years after the banking crises, and Norway in 1994 already.

In the recent international financial crisis, Finland, Norway and Sweden have avoided significant bank losses, while several Danish banks needed government support. This suggests that the banking crises in 1991-1993 may have had a long-run learning effects in the banking industries of Finland, Norway and Sweden, a view that many Norwegian bankers adhere to.

Previous papers on the real economic costs in terms of output loss of the Nordic crises are IMF (1998), Hoggarth et al. (2002), Schwiertz (2004), Hagberg and Jonung (2009) (only Finland and Sweden).¹ The results are sensitive to the measurement of output trends, how the start of a banking crisis is identified, and they also pick up the effects of shocks that are not directly related to the banking crises. These problems are particularly serious in the case of Norway. A surprising finding of the three first papers referred to above is a larger economic cost in Norway than in Sweden and Finland, but this is probably an artifact of the particular methods used to measure trends and the output gaps. In Norway a systemic banking crisis started in 1991, after several years of banking distress (beginning in 1987). In 1987, it was not at all inevitable that the systemic banking crisis was bound to happen, however. An important

¹ These methods have been improved by Bordo et al. (2001).

shock that triggered the banking crises in Norway, Finland and Sweden was the high real interest rate after the German unification in 1990. Without this shock the Norwegian banking crisis in 1991-1992 would probably not have happened (Steigum, 2009).

The approach of this paper is distinctly empirical with a broad theoretical framework involving both macroeconomic and political economy mechanisms. Due to the identification problem, it is not possible to measure economic effects of a particular financial crisis with reasonable precision, neither short-term nor more persistent effects. Still, we think it is interesting to look closely at what happened to the banking sector and to the macroeconomic performance after the crisis, and compare Norway and Denmark, Finland and Sweden, four rather similar countries along many economic and institutional dimensions. Denmark avoided a banking crisis (Vastrup, 2009). It experienced a similar boom as in Norway in the 1980s, and there were also clear signs of banking distress, but in Denmark the financial deregulation process had started much earlier and was more gradual than in the other three countries. The bank losses (relative to GDP and total loans) in Finland were larger than in Sweden, and the bank losses in Norway were smaller than the Swedish. One would therefore expect that any short- and long-run effects of the banking crises should be greater in Finland than in Sweden, even smaller in Norway, and zero in Denmark.

In the Nordic countries, it makes good sense to think in terms of a two-sector model in which the sectors produce traded and non-traded goods. It is not controversial to assume that fluctuations in aggregate demand have been important for the boom and busts in the four Nordic countries, and that the financial deregulation policy released a huge credit supply shock that increased aggregate demand and asset prices. Large asset price movements triggered wealth effects in consumption as well as substantial fixed investment fluctuations during the boom-bust cycles.

My implicit theoretical framework also includes hypotheses about the political system's reactions to the crisis. The Nordic countries are parliamentary democracies with big governments and powerful, non-elected civil service staff, particularly in the ministries of finance. Norway may now have the most powerful Ministry of finance among OECD countries (relative to the economy's size), and this increase in power of economists in the Norwegian Government seems to have occurred about the same time as the banking crisis.

There is also a tradition of corporatism in the Nordic countries, particularly in wage bargaining. The institutional framework of economic policy making usually makes sure that crucial decisions are made to improve macroeconomic outcomes, even under minority governments.

In the next section we summarize the experience with financial liberalization, banking distress and systemic banking crises in the four Nordic countries. Section 3 looks more closely into the Norwegian banking industry and the profound changes in financial supervisory approach after the banking crisis. Section 4 reviews the post-crisis macroeconomic developments in the four countries. Section 5 concludes.

2. Financial liberalization and banking crises

As chart 1 illustrates, the four countries had inherited an inflation problem from the 1970s. All countries had crawling pegs in the 1980s, with occasional devaluations intended to improve cost competitiveness of industries exposed to international competition. Central banks were dependent and took orders from the government. In Norway, the government also told the central bank what the interest rates should be, even money market rates. This was a consequence of the “low interest rate policy”, with roots back to the 1950s.

Fiscal and monetary policy in the 1970s was in general too expansionary and not consistent with fixed exchange rates, see chart 2. Denmark suffered the largest fiscal deficits (and also current account deficits) in the 1970s. In the beginning of the 1980, the new conservative governments introduced several fiscal austerity measures and signaled that it would no longer devalue the Danish krone, but keep the exchange rate fixed and anchored to the German mark. The new stabilization policy worked well and brought inflation down to 4 percent in 1986. The other three countries continued to pursue pegged exchange rate policies with low credibility. Norway devalued the krone after a huge oil price decline in 1986. In the next years inflation increased in all three countries and was not curbed until the effects of recessions were felt shortly before the banking crises. The three countries that later experienced banking crises were therefore facing an extra output cost of disinflation that Denmark had already suffered in the mid 1980s.

In 1984, the Norwegian government decided to start a financial liberalization process because the old and long overdue, quantitative credit regulation framework of monetary policy was not sustainable (Steigum, 2009). This was four years after Denmark had initiated financial liberalization, but Denmark’s financial sector and monetary policy was to a much greater extent based on market-clearing interest rates than Norway’s. Moreover, Denmark’s banking industry was much better capitalized than Norway’s (Vastrup 2009). Norway was financially underdeveloped and even did not have a functioning money market. Denmark had developed a system of home-ownership finance which protected borrowers from short-term fluctuations in the interest rate. In the other three Nordic countries, home owners were much more exposed to short term interest rate risk.

In Norway, the financial liberalization triggered a huge, positive credit supply shock in 1985 – 1987, as Norwegian banks moved into new geographical regions and competed aggressively for market shares by expanding lending and employing of new staff (Steigum, 2009). The lending boom triggered excess demand and increasing inflation in 1986 and 1987, fueled by the devaluation and excessive wage increases.

Shortly after Norway, Sweden and Finland also started a financial liberalization journey. The immediate effects on the lending behavior of banks were much stronger in Norway, however. In Finland and Sweden, the lending boom had similar macroeconomic effects as in Norway.

Chart 3 illustrates the booms and busts in the four Nordic countries. The Norwegian boom was the most short-lived one, ending in 1987 due to restrictive monetary and fiscal policies. The 1986 oil price shock had weakened the current account significantly and given the

Ministry of Finance good arguments to recommend a switch to a Danish-style economic policy involving fiscal austerity, no more devaluations and disinflation. We see from chart 3 that the Danish and Norwegian booms are quite similar, both ending in 1987. In Finland and Sweden, however, there were no perception of a crisis and the lending boom continued for three more years. We see from chart 3 that the Finnish boom was both rapid and long-lasting. Also Sweden's boom lasted longer than the Norwegian, but its speed was slower than the Finnish boom, probably due to shortage of labor.

During lending booms, overinvestment in housing and commercial property is common. Typically, easy access to credit stimulates speculation and bubbles in asset markets, see Allan and Gale (2000). Inflated asset prices will usually create excessive incentives to invest in real estate. After the burst of the asset bubble, lending and construction suddenly stop and unemployment soars. Recent extreme cases are Ireland and Spain. Both in Finland, Norway and Sweden, asset prices increased rapidly during the boom in the 1980s and building and construction activities were high before collapsing after the bust. Chart 4 compares the real asset prices of commercial property in Oslo and Stockholm. This figure suggests that the oil price shock pricked the Norwegian property bubble, an hypotheses suggested by Allan and Gale (1999). In Sweden the bubble reached its top in 1989, and thereafter real property prices declined dramatically. The losses of Swedish banks in the banking crisis were much more concentrated in real estate loans than in Norway and Finland.

Both Denmark and Norway experienced increasing banking distress in the late 1980s, but as losses were larger and equity capital ratios were smaller in Norway, all the largest commercial banks, and several savings banks, had to be rescued by the Norwegian government in 1991 and 1992. Shortly afterwards, even more devastating banking crises shattered Finland's and Sweden's economies. A common shock hitting the Nordic countries was the German shift to restrictive monetary policy and real appreciation after the German unification in 1990, forcing the Nordic countries to increase real interest rates to keep the exchange rates fixed relative to the strong German mark. On top of this, income tax rules in Norway and Finland were changed to reduce tax deductions for nominal interest payments. After-tax real rates of interest increased substantially. This asymmetric shock was bad luck and triggered a rapid decline in asset prices. Both Sweden and in particular Finland were also affected by several negative external shocks that reduced export demand. These shocks as well as tighter monetary conditions also stimulated speculative attacks on a number of European countries, including the four Nordic ones. Finland devaluated the markka in November 1991 and then floated in September 1992. The speculative attacks improved competitiveness in Finland and Sweden and permitted lower real interest rates. Both countries shifted to inflation targeting and flexible exchange rates, but in 1999 Finland joined the European Monetary Union. The effects on the real exchange rates of Denmark and Norway were much smaller and short-lived, however, see chart 5. Norway introduced inflation targeting informally in 1999 and formally in 2001.

3. The post-crisis banking industry and financial regulation

In all the three Nordic countries hit by a banking crisis, the governments reacted very fast to rescue the large banks that had failed (Steigum, 2009). Details differ, but the resolution policies were sufficient to restore bank lending and economic growth fairly quickly in all the three countries. In Norway, the government passed new legislation in Parliament in order to nationalize the three largest commercial banks.

Chart 6 illustrates that the Norwegian banking industry's loans and total assets have become much larger (relative to GDP) after the banking crisis. In 1989 the share was 66 percent, declining to 55 percent in 1993. The share increased to 106 percent in 2007, before declining to 99 percent in 2009. This time, there was no banking crisis or banking distress in Norway.

The Government gradually sold part of its shares in the commercial banks and made a net profit in present value terms (Steigum 2009). It has kept its minority share holding in the largest bank, DNB NOR, however, probably as a safeguard to prevent the bank from being sold to foreign banks and a movement of its headquarters to another country. This appears to be a long-run effect of the banking crisis. Before the crisis, no Norwegian governments intended to become an owner of commercial banks.

The government's involvement in the banking industry highlights the "too-big-to-fail-problem", which has become even more serious over time in all the Nordic countries as bigger and more complex financial institutions have evolved over time. For example, the total assets of DNB NOR is now about 90 percent of Mainland Norway's GDP. This share is more than the share of the entire banking industry during the banking crisis.

Chart 7 shows that Norwegian banks had much higher operating costs and losses in percent of total assets before the banking crisis than now. During the credit expansion period 1985 – 1988, profits before tax deteriorated. Banks competed aggressively for market shares by venturing into new geographical areas, but with insufficient focus on costs, risks and profitability. Operating costs were 1 percent of total assets in 2009, down from 3,5 percent in 1984 – 1985.

The chart shows that losses became slightly negative in 1995 – 1997 as previous loss provisions had been higher than necessary ex post. This may partially be due to the fact that new managements of rescued banks have an incentive to exaggerate losses that are recognized as a possibility, in order to receive more equity capital from the government. On the other hand, the Norwegian economy did in fact recover faster than expected after 1993. Chart 7 shows that net losses were also negative in 2005 – 2006. Looking at profitability before tax in 2008 and 2009, we see that the effect of the international financial crisis has been minor.

Chart 8 compares return to equity in Norwegian banks and the 12 months money market rate. This chart contrasts the low profitability of banks before the banking crisis with the high profitability in the 15 years period after the banking crisis.

Before the banking crisis, most Norwegian banks lacked competence or focus on risk management, resulting in excessive operational and credit risks. After the banking crisis, the

focus of the new management groups switched to cost effectiveness and risk management. New methods have been employed to calculate appropriate risk premiums in loan rates.

Also the Financial Supervisory Authority of Norway (FSAN) had insufficient competence in the critical years after financial deregulation. FSAN was established as an integrated supervisory institution in 1986 (under the authority of the Ministry of Finance), after a merger of the two former supervisory authorities for banking and insurance. It employed only 71 staff members in 1986, and did not give priority to bank supervision during the lending boom. From the start it was responsible for prudential supervision of banks, insurance companies and other financial institutions, as well as financial market surveillance and business and market conduct. Later the integrated supervisory model was adopted by Denmark (1988), Sweden (1991) and Finland (2009).

During the period of financial deregulation and the lending boom, capital requirements in Norway were lax as the government and FSAN had yielded to strong pressure from the banking industry.

The banking crisis had a profound effect on FSAN, however. It won political support for allocation of more resources for expansion, and the banking crisis made it much easier to employ former bankers. In the three year after the banking crisis, its staff increased by 30 percent (from 99 full-time employees in 1992 to 129 in 1995). Another result of the banking crisis was the adoption of a new program for macroeconomic surveillance in 1994. In 2010 the staff has further increased to 255 employees and the share of higher educated staff has gone up significantly. The growth of the staff is also due to the fact that FSAN has been delegated responsibility for new tasks.²

An integrated financial supervision authority makes it easier to limit regulatory arbitrage and supervisory gaps. It gives the FSAN more authority and makes it easier to hire highly qualified staff. It is also easier for an integrated supervisory authority to cooperate with the central bank and financial supervisory authorities in other countries.

After the banking crisis, the prudential supervision in Norway has been different from the “light touch” regulation by FSA in London. It defines its approach as “active risk-based supervision” with regular on-site inspections and close contact (quarterly meetings) with managements of the most important financial institutions.

A close tripartite cooperation with the Ministry of Finance and Norges Bank has evolved after the banking crisis. They share a common financial reporting data base and have regular meetings to discuss financial stability issues. After the failure of Lehman Brothers in October 2008 and the collapse of the international money markets, there were frequent meetings between the three parties to discuss ways of securing medium-term bank funding.

² In addition to banks and insurance companies, the FSAN is now responsible for supervision of finance companies, pension funds, mortgage companies, investment firms, debt-collecting agencies, all markets for securities (including the stock market), auditors and auditing firms, external accountants, IFRS compliance, prospectuses, real estate agents, and IT-supervision.

There is a particular close cooperation between FSAN and Norges Bank on top level, department head level as well as expert level.

4. Macroeconomic performance after the banking crises

Both Finland, Norway and Sweden enjoyed rapid economic growth after the banking crises.

Chart 9, based on Bjørnland et al. (2008) shows different measures of Mainland Norway's output gap. It illustrates the well-known problem that different methods of measuring the output gap produces different results. The HP-filter (with a $\lambda = 1600$) is likely to underestimate the output gap during the long period of low economic activity in 1989 – 1993. The multivariate unobserved component model is based on data for inflation and unemployment in addition to output. It probably gives a more realistic picture of the output gap during the period of low economic activity. Interestingly, the latter method's measurement of the output gap in this period does not deviate much from the results based on a production function approach. The log-linear trend assumes that Mainland output was back on the trend in 1997, while the other three methods identify 1996 as the year when output was back to normal, i.e. four years after the end of the banking crisis. The long-linear trend approach is likely to exaggerate the output gap somewhat in the period of low economic activity.

Since the period of low output gap in the period 1989 – 1995 started several years before the banking crisis in 1991-1992, it could not be caused by the banking crisis itself. It could have been influenced by the banking distress in 1987 – 1990, however. We will come back to the question of a possible credit crunch later. After the 1986 oil price shock, monetary and fiscal policy was restrictive and this pricked the asset price bubbles and started the recession in the fall of 1988. The banking crisis was therefore caused by the combination of the recession and very high after-tax real interest rates due to the fixed exchange rate policy (procyclical monetary policy) and changes in the income tax rules that reduced income tax deductions for debt holders. In fact, the average after-tax real interest rate increased from zero in 1987 to more than 7 percent in 1992-93 (Steigum, 2004). The role of the high after-tax real interest rate was also important in Finland and Sweden, see Englund and Vihriälä (2009). In Denmark, however, interest rates of mortgage holders were to a much greater extent protected from the increased money market rate after the German unification.

Suppose contra factually that Norwegian banks had been better capitalized (like Danish banks) and that the Norwegian banking crisis had been avoided. How much difference would that have made for Mainland output and unemployment during 1991 – 1992 and after? This depends on question of a credit crunch. Some studies have looked for behavioral differences in the lending behavior of “problem banks”, i.e. banks which had received new capital from the government, and other banks, but did not find significant differences, see Steigum (2004) for details. Also in Finland and Sweden, the evidence of a credit crunch remains weak (Englund and Vihriälä, 2009). But even if there were no credit crunch in the three Nordic countries, the fall in asset prices was likely to trigger collateral squeeze.

Chart 10 illustrates the developments of PPP adjusted GDP in billions of US dollars (deflated by the US CPI). The recessions in Finland and Sweden in 1990-1993 are easy to spot. After the crisis, Norway's GDP increased faster than the other countries GDP due to rapidly increasing petroleum revenues. In the 1990s, the quantity of petroleum production increased considerably, and after 2000, petroleum price hikes (combined with a decline in import prices due to China's exports of consumer goods to Norway) improved Norway's terms of trade substantially. In retrospect, the Norwegian government's decision to increase petroleum extraction capacity in the late 1980s was fortunate. In the late 1970s and early 1980s, Norwegian governments were worried about the hazards of increased oil dependence and the "Dutch disease", and they therefore wanted to introduce a quantity constraint on production of oil and natural gas. These concerns disappeared when petroleum revenues declined dramatically due to the oil price decline in 1986. Increased petroleum output would improve the current account as well as the government's fiscal balance. The alternative would have been a slow and painful reallocation of labor and capital to build up the non-petroleum traded sector exposed to international competition.³

It is striking that Denmark, the one country that did not suffer from a banking crisis, had an inferior development in GDP (measured in terms of PPPs) than the three countries that suffered from a banking crisis. A closer look at the numbers shows that Denmark's GDP increased by an annual rate of 1.65% in the period 1993 - 2008, Sweden's by 1.93% and Finland's by 2.73%. Norway's growth is 5.01%, and is obviously influenced a great deal by the terms of trade improvements which have nothing to do with the banking crisis, but should be credited the "pure luck" account.

To eliminate terms of trade effects, chart 11 compares the volume growth of GDP in the four countries. We see that the outputs of Finland and Mainland Norway have grown faster than real GDP of Sweden and Finland. Again, the performance of Denmark is inferior to the three other Nordic countries that experienced a banking sector melt-down in 1991 – 1993. This fact makes it difficult to argue that Finland, Sweden and Norway suffered from significant medium- or long-term economic costs from their systemic banking crises.

Table 1 looks at what happened in the first seven years after the banking crisis.

Table 1. Average post-crisis growth rates in Denmark, Sweden, Mainland Norway and Finland, 1993 – 2008 (per cent per year)

	1993 - 2000	2000-2008
Finland	4.51	2,95
Mainland Norway	3.68	3.23
Sweden	3.52	2.58
Denmark	2.37	1.30

Source: OECD.

³ See Steigum and Thøgersen (2003) for an analysis of this problem.

Finland, which had the largest decline in real GDP under the banking crisis, also had the best growth performance in the period 1993 - 2000 with an impressive average growth rate of 4.51 per year. The corresponding growth rate of Mainland Norway was 3.68 percent, marginally higher than Sweden's average growth rate of 3.52 percent over the same period. Denmark's growth rate was significantly smaller, only 2.37. In the next 8 years, the average growth rates became smaller for all countries. Now Mainland Norway had the best growth performance (3.23%), followed by Finland (2.95%), Sweden (2.58%) and Denmark (only 1.3%).

Growth accounting suggests that multi-factor productivity growth is considerably lower in Denmark than in the other three countries. OECD finds that in the period 1993 – 2006, average multi-factor productivity growth in real GDP was 2.48 percent per year in Finland, 1.88 percent in Sweden and only 0.83 percent in Denmark. Table 2 reports average labor productivity growth in the period 1995 – 2008.

Table 2 Labor productivity growth in Denmark, Sweden, Norway, Finland and the G7 countries. Growth in real GDP per hours worked, 1995 – 2008 (annually, per cent)

	1995 - 2000	2000 - 2008
Denmark	1.08	0.47
Sweden	2.48	1.99
Norway*)	2.29	0.75
Finland	2.8	1.87
G7	2.29	1.65

Source: OECD.

*Norway's numbers are affected by rapid growth of petroleum production in 1995 – 2000 and slow growth and decline in petroleum production in 2000 – 2008.

Again, Denmark's productivity performance is inferior to the other three countries as well as to the G7. Andersen et al. (1999) emphasize that excessive real wages and low international competitiveness are important factors behind the relatively low economic growth in Denmark. As shown in chart 5, unit costs in Danish manufacturing have increased much more than in Sweden and Finland after 1991. Denmark's fixed exchange rate policy may have had an effect here, but different productivity and wage developments are also important. In 1999, Finland joined the EMS, but the real effective exchange rates of Denmark and Finland continued to diverge after 1999.

Another explanatory factor behind the relatively slow economic growth in Denmark is a low share of R&D expenditure relative to GDP. Whatever the causes, they are unlikely to have anything to do with the fact that Denmark avoided a systemic banking crisis.

Chart 12 shows that the post-crisis unemployment rates differ a lot in the four countries. The unemployment crisis was worst in Finland, where the collapse of the export to former Soviet Union had a devastating effect. The unemployment rate in Finland increased to nearly 17 percent in 1994. In 2000, seven years after the end of the banking crisis, the Finnish unemployment rate was still above 9 percent. It took another 8 years to bring the unemployment rate back to 1986 level. Also the Swedish unemployment rate increased rapidly during the banking crisis, and reached almost 10 percent in 1997. It did not return to the low levels of less than 4 percent observed in the mid 1980s, however. The unemployment records of Finland and Sweden are therefore consistent with a negative, partially persistent effect of the banking crisis.

In the case of Norway and Denmark, the Danish unemployment rate has been systematically been higher than the Norwegian throughout the period covered by the chart. The Norwegian unemployment rate peaked at about 6.5 percent in 1993, the first year after the banking crisis.⁴ Despite the fact that Denmark did not experience a systemic banking crisis, unemployment was much higher than in Norway during and after the Nordic banking crisis in 1991 – 93. In both countries the rates of unemployment have come down to the levels in the mid 1980s.

Unemployment persistence is a mechanism through which banking crises may have negative medium-term and long-term effects. Such effects are usually closely related to long-term unemployment, see chart 13. We see that Norway's performance is much stronger than the three other countries. In addition to low unemployment, the share of long-term unemployed in total unemployment has also been low and declining after 1994 (from 28.5 percent) In the boom year 2000, long-term unemployment in Norway was only 5 percent. In Finland, the share of long-term unemployment declined from 37 percent in 1995 to 25 percent in 2001. Sweden's share of long-term unemployment increased for four years after the banking crisis, and declined from 33.5 percent in 1997-98 to 14 percent in 2005 – 2006. Also Denmark had its long-term unemployment share above 30 percent I 1994, and the decline afterwards has not been as impressive at the three countries that experienced a systemic banking crisis.

Finally, we look at employment rates (share of persons of working age (15 to 64 years) in employment, see chart 14. Employment rates have traditionally been significantly higher in the Nordic countries than in the rest of OECD. The banking crises did not change this fact, but we see that there has been a considerable persistence in the decline in employment rates in Finland and Sweden. The Swedish case strongly suggests that the crisis in the early 1990s had a persistent effect on both unemployment and employment rates. In 1985 - 86, the Swedish employment rate was above 80 percent and increasing (the highest rate among the four Nordic countries), and in 2008 it is 76 percent. Again, Denmark and Norway experienced much smaller declines in employment rates during and after the Nordic banking crisis and the

⁴ Both Norway and Sweden put in place labor market programs to increase the human capital of unemployed workers. Participants in such programs are not counted as unemployed. If workers in such programs are added to the unemployed, the gross rate of unemployment in Norway would have been about 8 percent in 1993. Still, this is significantly lower than the unemployment rate in Denmark.

employment rates more than recovered in the period. In 2008, the employment rates in Denmark and Norway were higher than Sweden's.

Norway's growth and employment performance after the banking crisis has been very strong, much stronger than Denmark's. We cannot exclude the possibility that the banking crisis had a favorable indirect effect in Norway through economic policy reforms. We have seen that, after the banking crisis, Norway's financial supervisory authority was strengthened considerably and the powers of the Ministry of Finance increased as a result of the perception of a national crisis after the oil price shock in 1986. Other structural reforms include a tax reform in 1992, a closer income policy cooperation between the government and the central labor market organizations to increase competitiveness and reduce unemployment, as well as a series of product market reforms designed to increase competition and economic efficiency, including energy markets, telecommunications and markets for other non-traded services. In 1994, the Ministry of Finance adopted the generational accounting method in order to put more focus on the long-term fiscal planning challenges associated with temporary petroleum revenues, expected population ageing, and social security pensions and other age-related welfare spending. In 2001, Norges Bank was delegated operational independence to pursue inflation targeting.⁵ At the same time, a new fiscal rule was agreed upon by the leading political parties in order to channel government surpluses into a government petroleum fund. To-day this fund is significantly larger than one year's GDP. Also a significant pension reform is about to be legislated in 2011. This reform will increase incentives to supply labor and probably postpone retirement for older workers.

Government debt is another mechanism for persistent effects of banking crises. Chart 2 shows that the government deficits in Sweden and Finland increased substantially during the banking crisis. This was mostly due to fiscal stabilizers, however. The fiscal costs of the banking crises in Finland and Sweden were modest, see Sandal (2004). In the last banking crisis year (1993), the fiscal deficits of Sweden and Finland were 11.2 and 8.3 percent of GDP, respectively. The Norwegian government also ran fiscal deficits in the early 1990s, but in the end, there were no net fiscal costs of the Norwegian banking crisis when accounting for post-crisis capital gains.

Table 3 reports gross public debts (in percent of GDP) for Sweden, Finland and Denmark. Unfortunately, net debt numbers are not available. The increase in the debt share from 1990 to 1995 was almost 50 percentage points in Finland and somewhat smaller in Sweden. Denmark had more favorable macroeconomic developments, but still increased its public debt share by about 13 percentage points from 1990 to 1995. In the period 1995 – 2008, Denmark has reduced the gross debt share to a much lower level than in 1990. By 2008, the gross debt share in Sweden was back to the 1990-level. In Finland, however, the gross debt share in 2008 has not recovered from the crisis in the 1990s.

⁵ Norges Bank is now regarded as a highly competent inflation targeting central bank. For a recent evaluation of the its conduct of monetary policy, see Bjørnland et al. (2010).

Table 3 General government gross financial liabilities, Sweden, Finland and Denmark, 1990 – 2008 (as percentage of GDP)

Year	Sweden	Finland	Denmark
1990	46.3	16.3	66.4
1995*)	81	65.2	79.3
2000	64.7	52.3	57.1
2008	47.1	40.7	39.8

Source: OECD.

*) Maximum gross debt share, except in Sweden where the share increased to 84.4 in 1996.

5. Conclusions

Apparently, the Nordic banking crisis did not have sizable negative economic effects. There were no signs of a lost decade for the three countries hit by systemic banking crises in the beginning of the 1990s. On the contrary, the country that had the worst growth performance after 1993 was Denmark, the only country avoiding a systemic banking crisis.

In the labor markets, however, there are clear signs of persistent negative employment effects in Finland and Sweden. The labor market performance was much better in Norway.

The main reason why the banking crises did not have strong negative effects is probably the quick and efficient banking crisis resolution by the Nordic governments. The failing banks were quickly re-capitalized and were able to support new economic growth without much delay, if any.

The increase in the debt share from 1990 to 1995 was almost 50 percentage points in Finland and somewhat smaller in Sweden. By 2008, the gross debt share in Sweden was back to the 1990-level. In Finland, however, the gross debt share in 2008 has not recovered from the crisis in the 1990s.

It is likely that the Norwegian banking crisis had an indirect favorable economic effect due to structural policy reforms that became possible to implement as a result of the perception of a national crisis by politicians.

We have presented evidence that strongly suggest that the cost-efficiency and risk management of the Norwegian banking industry have improved substantially after the banking crisis. At the same time, Norway's supervisory authority has become much stronger and competent as a result of the banking crisis. There are also reasons to believe that the

performance and effectiveness of the banking industries and prudential regulation in Finland and Sweden have improved in a similar manner as a result of the banking crises.

Jonung (2009) discusses twelve lessons of the Nordic experience of financial liberalization. The Nordic experience shows that a quick and efficient government resolution of the banking crisis could restore economic growth rather quickly despite previous economic policy and financial regulation failures before the crisis. In stead of a lost decade after the banking crisis, the Finland, Norway and Sweden boomed outperforming Denmark, a country that avoided a systemic banking crisis.

The system of pegged or fixed exchange rates did not serve the Nordic countries well after the financial deregulation. Monetary policy became increasingly procyclical during the boom and bust, and changes in income taxation rules contributed to high real after-tax interest rates before and under the banking crises. Flexible exchange rates and inflation targeting have worked well in Sweden and Norway, making it easier to move the real rate of interest countercyclically. An important lesson for small open economies that intend to open up their capital accounts is to permit exchange rate flexibility. When Finland and Sweden finally stopped defending their pegs, real depreciations and lower interest rates laid the ground for aggregate demand stimulus and economic growth.

A final lesson concerns the importance of the financial supervisory authorities. These institutions were weak and lacked competence during the credit expansion period leading up to the Nordic banking crises. Capital requirements were too lax (except in Denmark). After the crises, these institutions have been strengthened considerably. The integrated supervision model in Norway has been a success, and many countries have adopted this model in the 1990s and 2000s. After the banking crisis Norway's Financial Supervisory Authority adopted an "active risk-based supervision" approach, and a close tripartite cooperation with the Ministry of Finance and Norges Bank has evolved to deal with financial and macroprudential stability issues. Strengthened financial supervision and regulation, as well as the learning effect of the banking crisis in the early 1990s, seem to have prevented Norwegian banks from excessive risk-taking and before the recent financial crisis.

The Nordic governments' crisis resolution policies did not address the too-big-to-fail distortion. On the contrary, the implicit subsidies given to holders of bank debt as a result of the government rescue policies have probably reduced risk premiums and given the large Nordic banks a competitive advantage in funding relative to smaller banks. If this problem is not dealt with, the implicit subsidies to large banks may trigger industry dynamics that make the too-big-to-fail problem even more dangerous over time.

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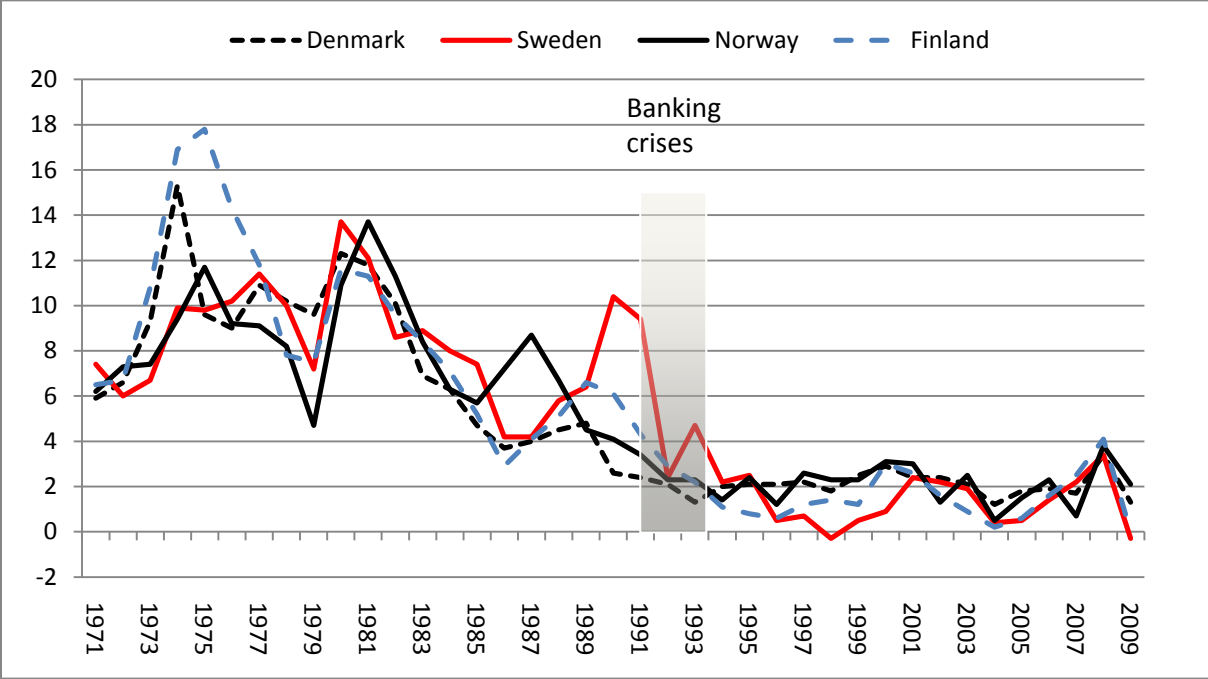
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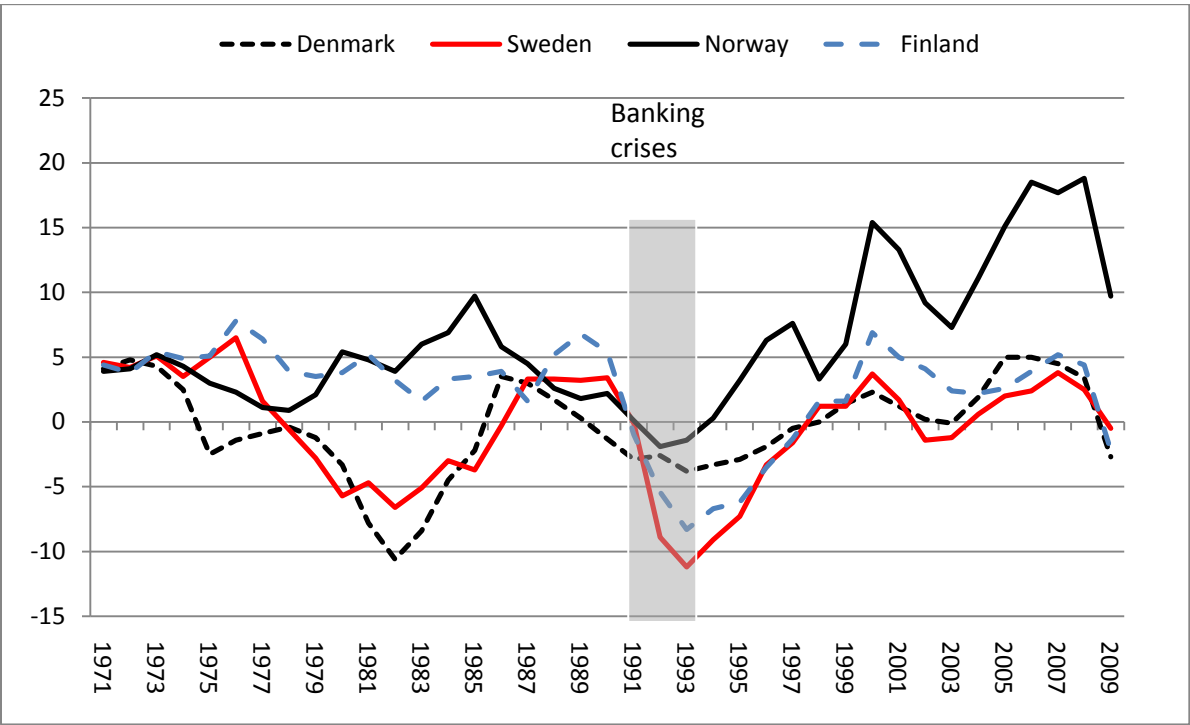
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Chart 1 Consumer price inflation (CPI) in Denmark, Sweden, Norway and Finland, 1971 – 2009.



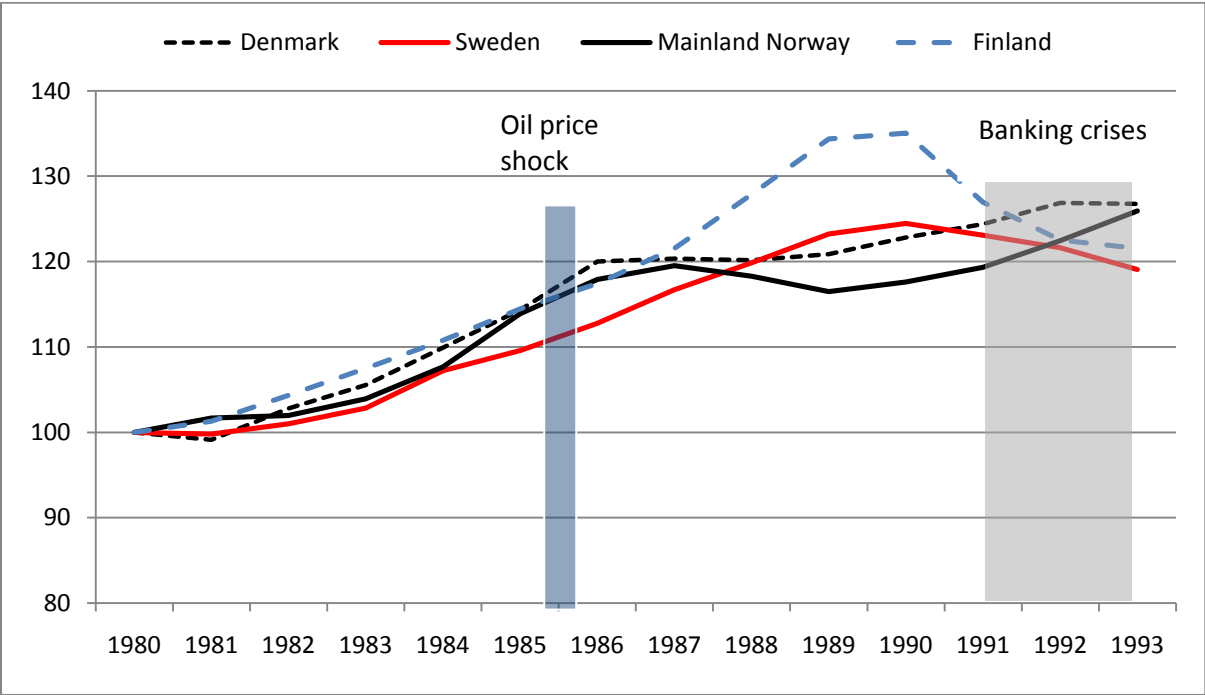
Source: OECD and Statistics Denmark, Sweden, Norway and Finland.

Chart 2 General government net lending in Denmark, Sweden, Norway and Finland, 1971 – 2009.



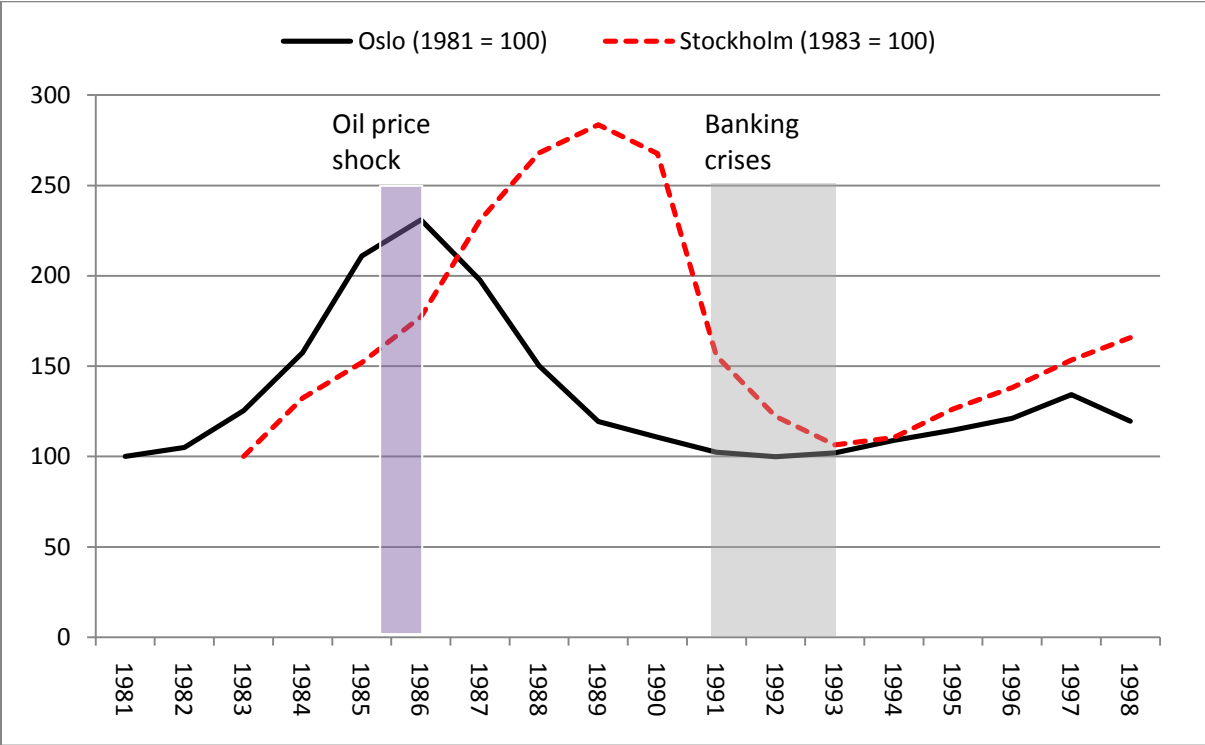
Source: OECD.

Chart 3. Real GDP in Denmark, Sweden, Mainland Norway and Finland, 1980 – 1993. Norway’s business cycle is illustrated by Mainland Norway’s GDP, excluding the petroleum sector and shipping overseas.



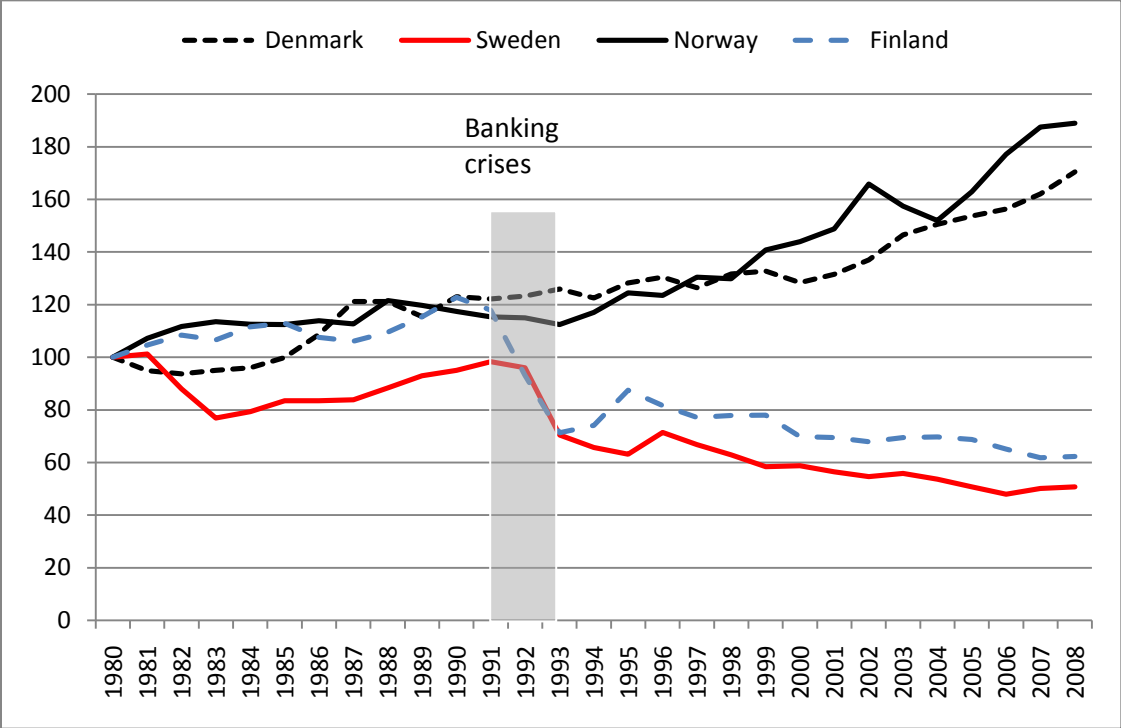
Source: National accounts.

Chart 4 Real prices on commercial property in Oslo (1981 = 100) and Stockholm (1983 = 100), 1981 – 1998. (Nominal price deflated by the CPI.)



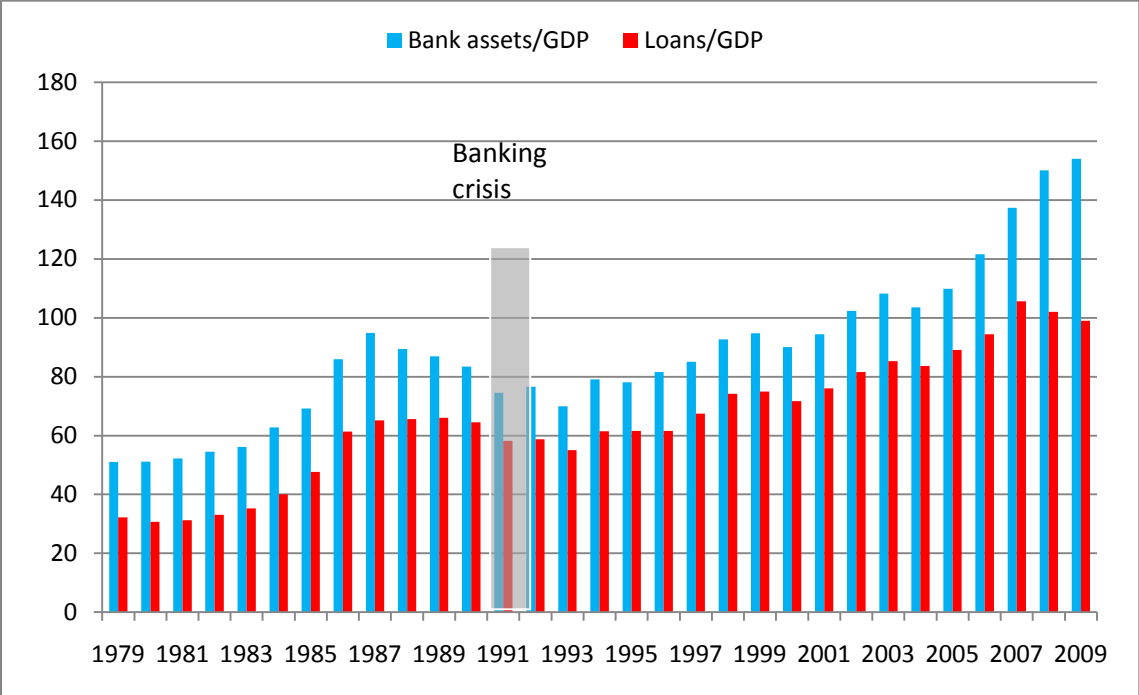
Source: Steigum (2004).

Chart 5 Real, effective exchange rates based on unit costs in manufacturing (1980 = 100), Denmark, Sweden, Norway and Finland, 1980 – 2008.



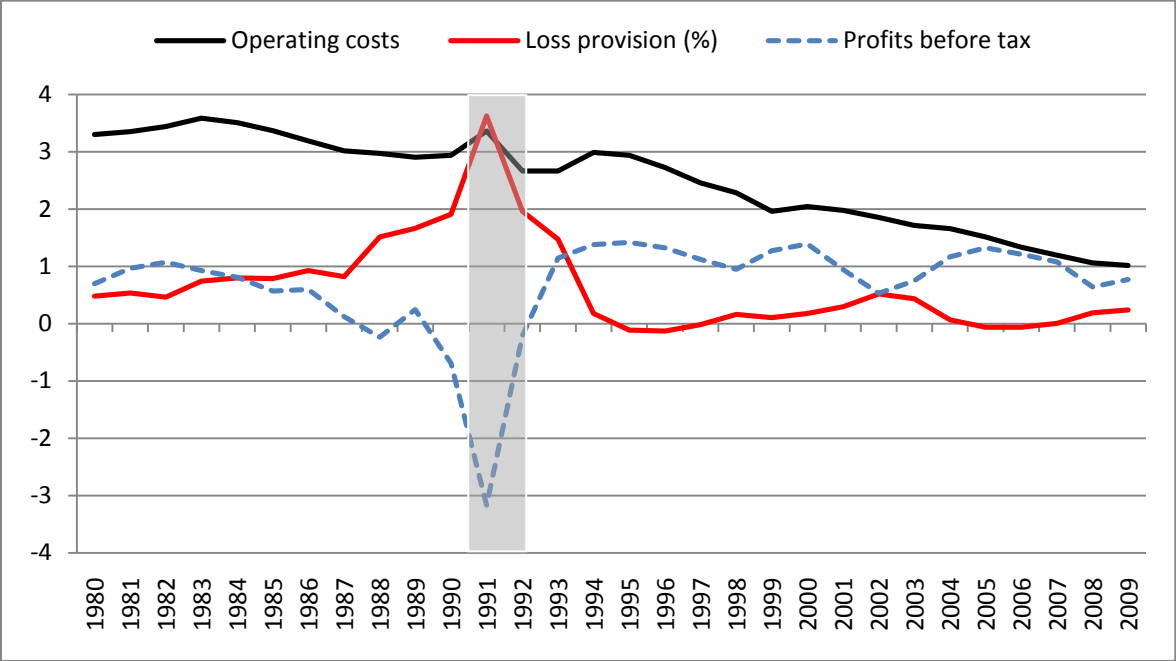
Source: OECD.

Chart 6 Bank assets and bank loans in Norway (per cent of GDP), 1979 – 2009.



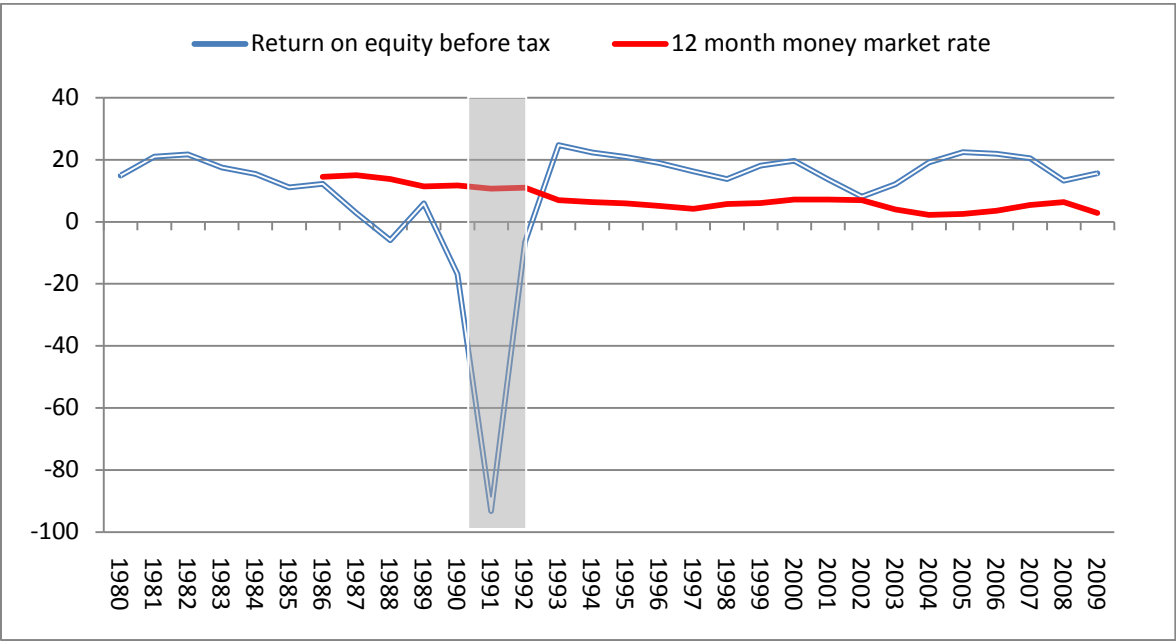
Source: Statistics Norway.

Chart 7 Operating costs, loss provision (net) and profits before tax in Norwegian banks, 1980 – 2009 (per cent of total assets).



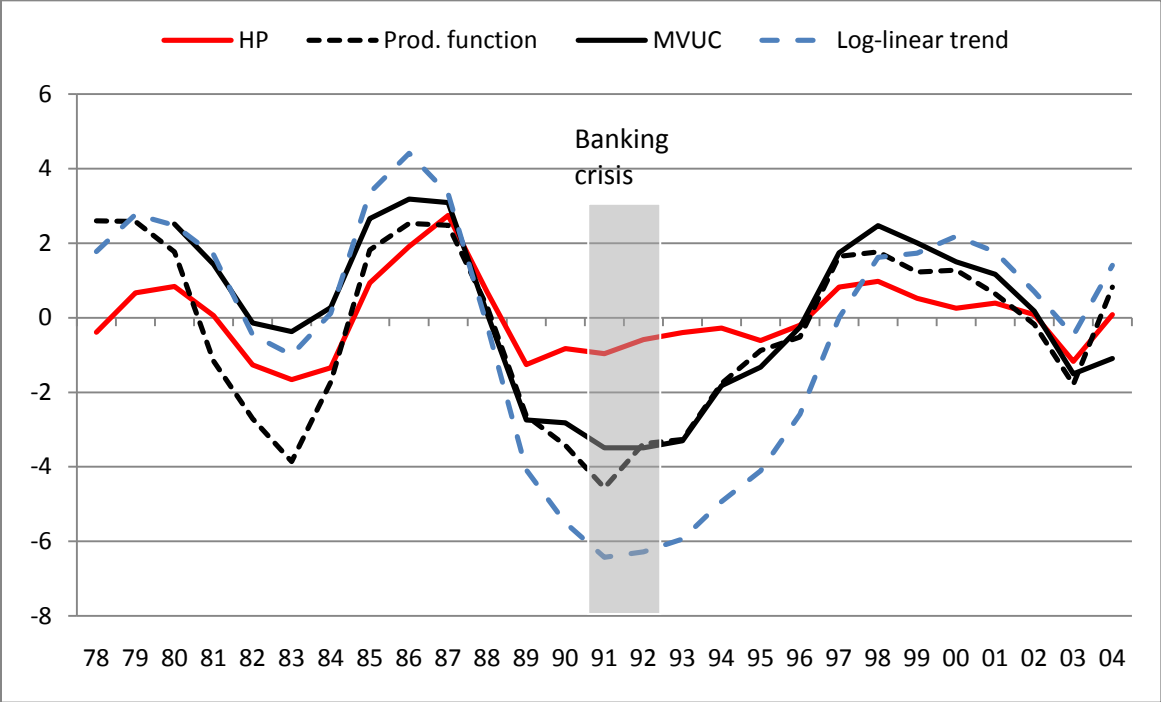
Source: Statistics Norway.

Chart 8 Return on equity and the 12 month effective money market rate, Norwegian banks, 1980 – 2009 (per cent).



Source: Statistics Norway and Norges Bank.

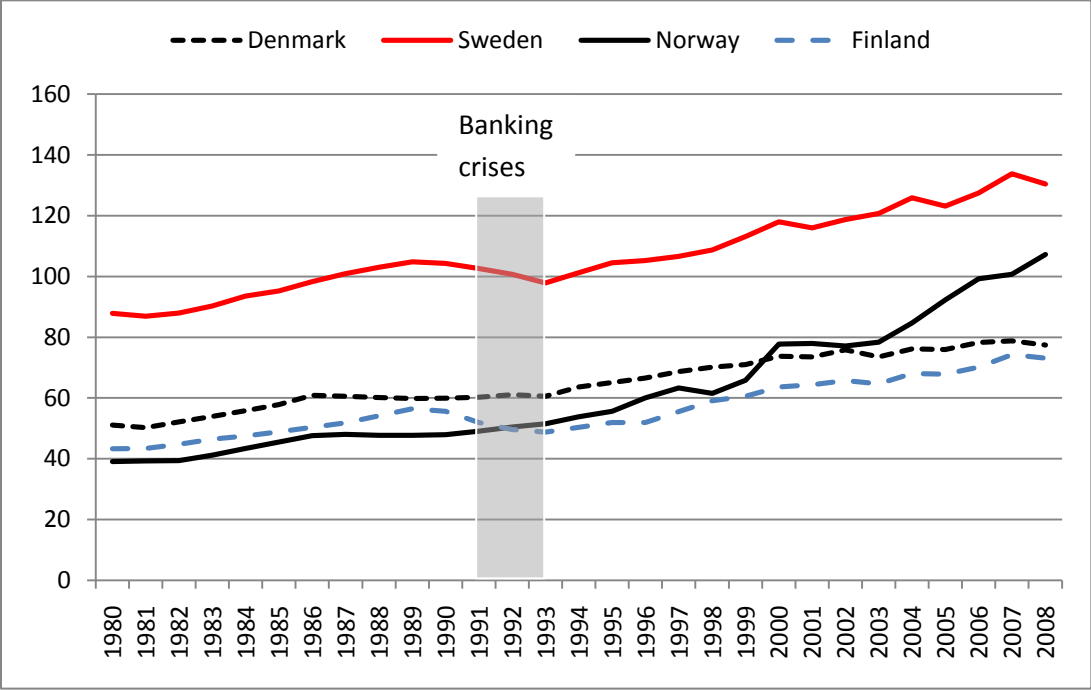
Chart 9 Measurements of output gaps for Mainland Norway, 1978 – 2004. Percentage deviation from normal output.



Source: Bjørnland et al. (2008) and own calculations of the deviations from a log-linear trend.

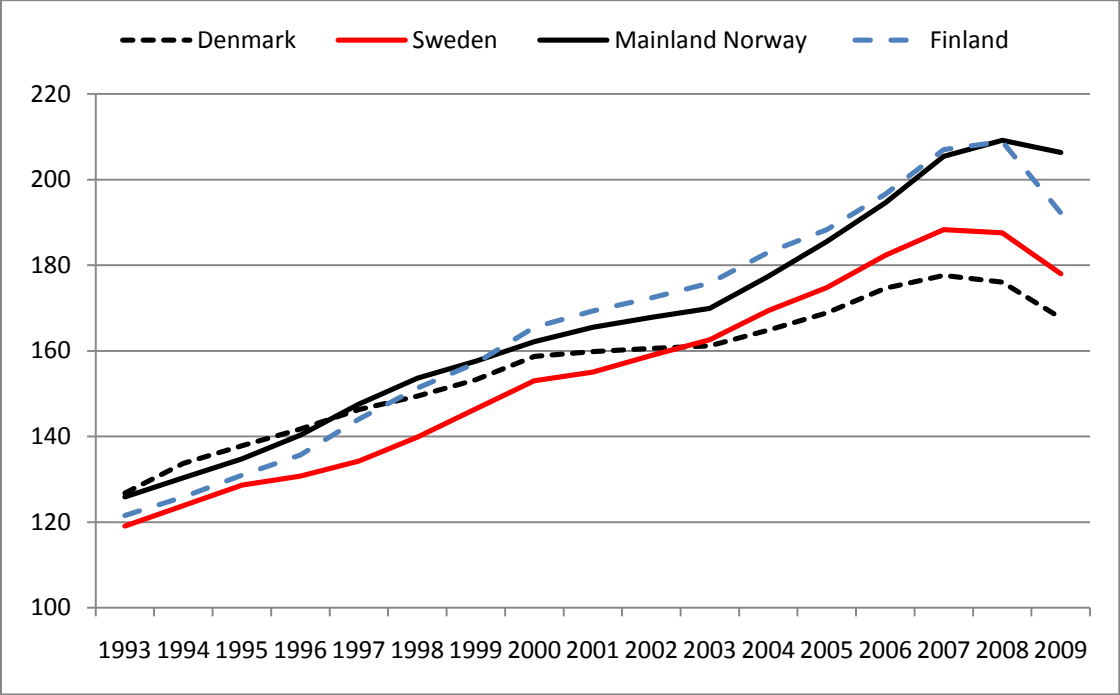
Note: The production function is a linearly homogenous Cobb-Douglas function with hours worked as labor input and the fixed capital stock as the other input. The capital share is 1/3. MVUC stands for the multivariate unobserved component method with output, unemployment and inflation as the observed variables. The log-linear trend starts in 1974 and ends in 1997 with an annual growth rate equal to 2.43 percent.

Chart 10 GDP in Denmark, Sweden, Norway and Finland (PPP-adjusted numbers in billions of current US dollars deflated by the US CPI (1980 = 1), 1980 – 2008.



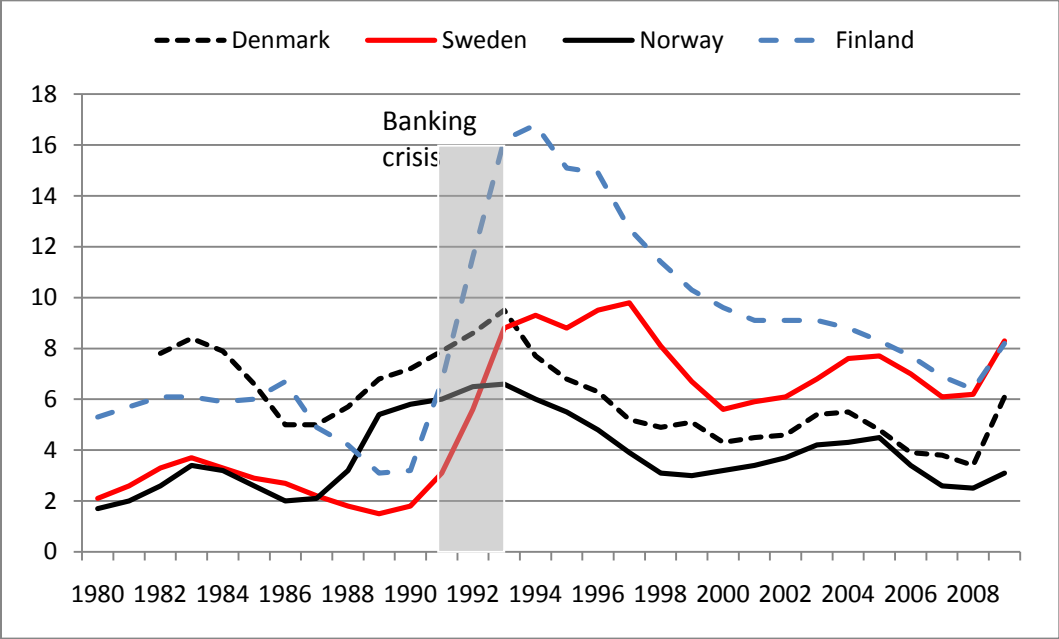
Source: OECD.

Chart 11 Real GDP in Denmark, Sweden, Mainland Norway and Finland, 1993 – 2009 (1980 = 100). See chart 3 for the real GDP developments from 1980 to 1993.



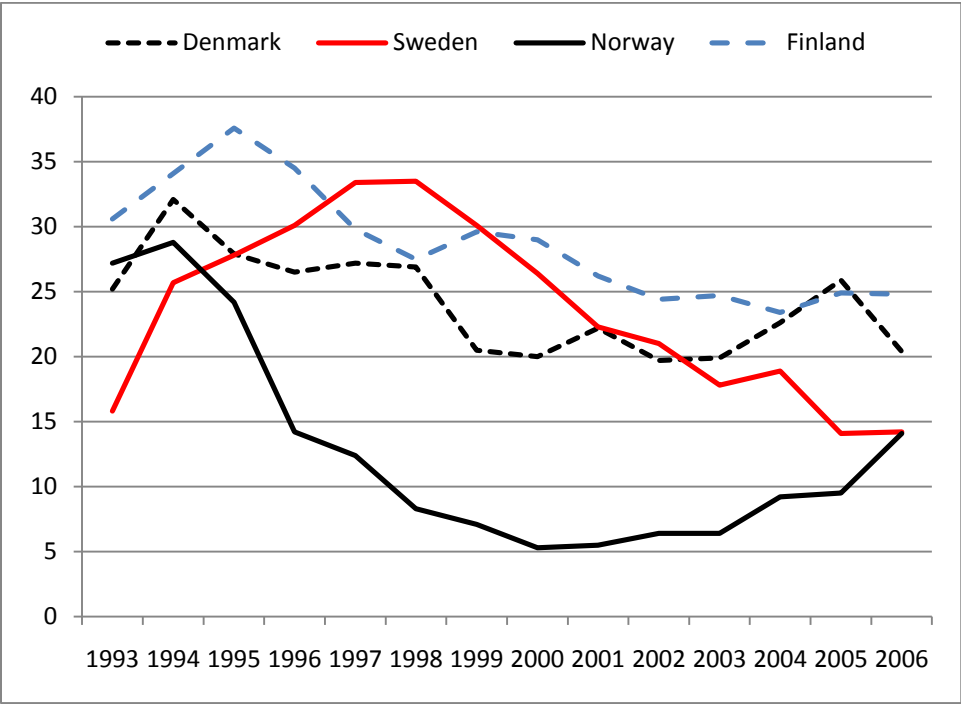
Source: National accounts.

Chart 12 Harmonized unemployment rates in Denmark, Sweden, Norway and Finland, 1980 – 2008 (per cent of labour force)



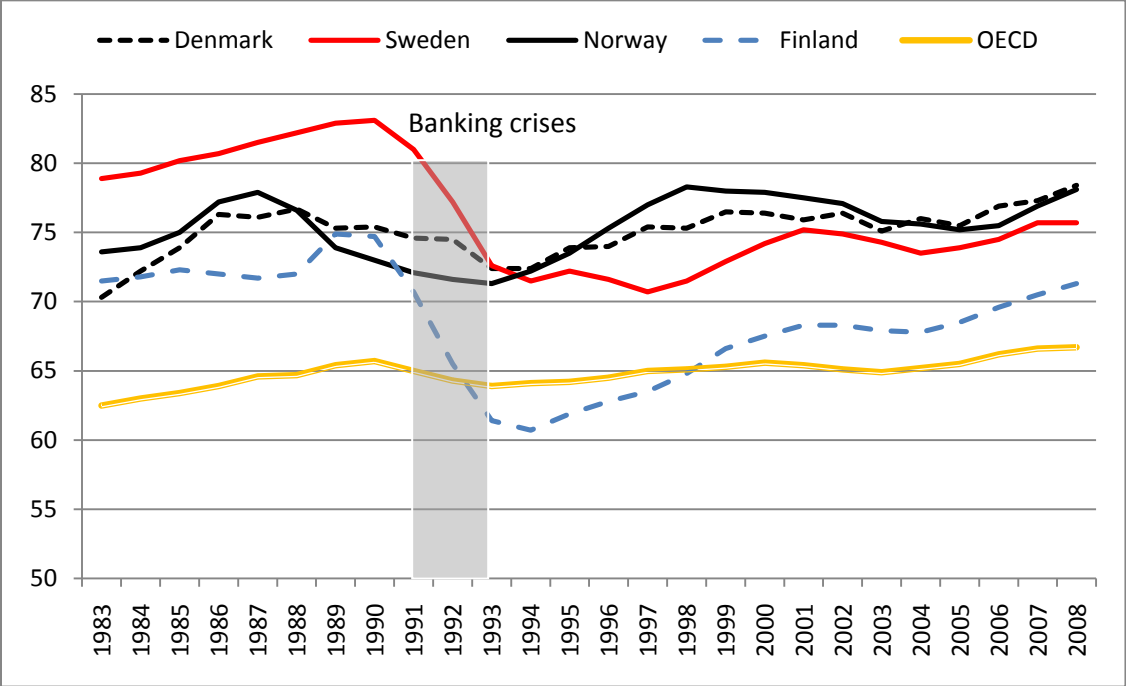
Source:OECD.

Chart 13 Long-term unemployment in Denmark, Sweden, Norway and Finland, 1993 -2006.



Source: OECD.

Chart 14 Employment rates in the Nordic countries and OECD average, 1983 – 2008. Share (percent) of persons of working age (15 to 64 years) in employment.



Source: OECD.