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Norway: Selected Issues

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INTERNATIONAL MONETARY FUND

NORWAY

Selected Issues

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Approved by European I Department

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Norway: Basic Data

Social and Demographic Indicators	
Area	323,900 square kilometers
Population (end-1996)	4.39 millions
Population growth (1995-96)	0.5 percent
GDP per capita (1996)	US$ 35930
Population Characteristics and Health (most recent estimates as of 1997)	
Life expectancy at birth: Male	75
Female	81
Infant mortality (aged under 1, in percent)	0.2
Population per physician	451
Population per hospital bed	67

	1995	1996	1997	1998 1/	1999 1/
			(Volume changes in percent)		
Private consumption	3.4	4.7	3.4	3.9	2.7
Public consumption	0.3	3.2	3.0	2.4	1.1
Gross fixed investment	3.4	9.6	12.6	5.9	-6.6
Export of goods and services	4.3	9.8	5.8	2.4	6.6
Of which: Oil and gas	8.2	12.6	3.4	-1.4	10.5
Import of goods and services	5.6	8.3	12.3	7.1	0.5
GDP	3.8	5.5	3.4	2.5	2.6
Mainland GDP 2/	3.1	4.1	3.7	3.0	1.3
			(In percent of labor force)		
Unemployment 3/	4.9	4.8	4.1	3.2	3.2
			(Percentage changes)		
Consumer prices	2.5	1.3	2.6	2.3	3.5
Hourly labor cost in manufacturing	5.0	4.5	4.3	5.0	6.0
Effective exchange rate					
Nominal	2.5	-0.3	0.6	-0.5 4/	...
Relative normalized unit labor costs	6.2	2.3	4.4	-0.2 4/	...
			(Twelve-month percent change, end of period)		
Domestic credit	6.3	9.2	6.1	8.9 5/	...
Broad money	5.1	6.0	4.5	4.5 5/	...
			(In percent)		
Three-month Interbank rate	5.5	4.9	3.7	7.8 6/	...
Ten-year government bond yield	7.4	6.8	5.9	5.5 6/	...
			(In percent of GDP)		
State budget, including social security					
Revenues	41.2	42.4	44.1	42.5	43.7
Expenditures	40.8	37.8	37.9	39.7	39.2
Overall balance	0.4	4.6	6.2	2.7	4.5
General government financial balance	3.5	6.5	7.5	4.5	6.0
Current account balance	3.3	6.7	5.2	0.1	2.8
International reserves (in months of imports of goods and services)	5.8	6.3	5.6	5.1 5/	...

Sources: Ministry of Finance; Norges Bank; Statistics Norway; IMF, *International Financial Statistics*; and staff estimates.

1/ Official estimates and projections as of October 1998.
2/ Excludes items related to petroleum exploitation and ocean shipping.
3/ From 1996, definitional changes result in a half percentage point increase in the reported unemployment rate.
4/ End-August 1998
5/ End-September 1998
6/ End-October 1998

I. The Social Insurance System[1]

1. The National Insurance Scheme (NIS) and the Family Allowance Scheme (FAS) form an integral part of the Norwegian welfare and redistribution system. All persons residing or working in Norway are insured under the NIS and the system is financed on a pay-as-you-go basis through contributions and from general tax revenue. Benefits include old-age, survivors' and disability pensions, disability, rehabilitation, and occupational injury benefits, medical and unemployment benefits and funeral grants. This chapter reviews the main elements of the NIS and FAS and provides projections of future pension expenditures. The paper demonstrates that indexing pensions to wages, in line with recent practice, would result in a large net liability by the year 2050 which could be reduced by indexing pensions instead to consumer prices. This could help make it possible for Norway to achieve a sustainable long-term fiscal position.

A. NIS Benefits

Pensions

2. Old-age pensions consist of a basic pension, a supplementary pension, and/or a special supplement, and special supplements for children and domestic spouses (means-tested). The retirement age is 67 with partial deferment until the age of 70. If the insured person maintains an earned income which exceeds the basic amount, the pension is reduced by 40 percent of the income in excess of the basic amount.

3. Any person who has contributed to the NIS for at least three years between the age of 16 and 66 is entitled to the basic pension. The basic pension is independent of previous income or contributions paid. However, a full basic pension requires an insurance period of 40 years, with the pension reduced proportionally in the case of a shorter period. For a single pensioner, the full basic pension is equal to the basic amount for that year (Nkr 42,500 through April 30, 1998 and Nkr 45,370 thereafter). For a couple who are both pensioners, the full basic pension is 75 percent of the basic amount for each. A pensioner supporting a spouse who is not a pensioner is entitled to a 50 percent supplement of his basic pension and a pensioner supporting children is entitled to a 30 percent supplement for each child.

4. The supplementary pension scheme was introduced in 1967 and is provided for individuals whose annual income exceeds the average basic amount in any three years after 1966. The amount of the supplementary pension depends on the number of pension earning years and the yearly pension points. A full supplementary pension requires 40 pension-earning years, with a proportional reduction in the case of fewer pension years. Pension points are given for pensionable incomes up to six times the basic amount, incomes between six and twelve times the basic amount receive one-third credit with no credit for higher incomes.

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[1]Prepared by Alun Thomas.

Pensionable income is the average income for the person's twenty best income years in current prices. Pension points are computed for each calender year by dividing the pensionable income (up to six times the basic amount) less the basic amount with the basic amount. The maximum number of pension points is currently seven.

5. Given that the supplementary pension scheme was introduced only in 1967, older age groups have had no possibility to earn full entitlement. For these age groups special transitional provisions have been introduced that supplement their entitlement. In addition, an additional special supplement was introduced in 1969 for those who had no, or only a small, supplementary pension. This supplement was initially fixed at 7.5 percent of the basic amount, but has subsequently risen to 79.3 percent of the basic amount.

6. The full minimum pension is provided for anyone who has lived in Norway for over 40 years and to refugees with asylum status. The minimum pension consists of the basic amount and the special supplement. Prior to the new adjustments enacted earlier this year the minimum pension was Nkr 69,360.

7. When the new central coalition government came into office in the fall of 1997, it vowed to increase minimum pensions significantly to raise the standard of living for those people on the lower end of the income scale. In a bill that was passed in June 1998, the minimum pension was raised by Nkr 12,000 to Nkr 81,360 for single pensioners (about $10,800) by raising the basic amount by 6¾ percent to Nkr 45,370 and increasing the special supplement to 79.3 percent of the basic amount. These changes were backdated to May 1.

8. The relative improvement in the value of the minimum pension in 1998 has reinforced the distributional motive for offering pensions evident in recent years. Between 1991 and 1998 the ratio of the minimum pension to the maximum allowable pension under the system rose by 12 percent to 46 percent. Correcting for taxes the lack of differentiation between the minimum and maximum pension entitlement is even more stark with the minimum pension currently above 70 percent of the maximum pension. Moreover, the new minimum pension has resulted in a sizeable increase in the break-even point between receiving a pension based on 40 years work and the minimum pension, thereby transferring a number of people who were previously receiving pensions based on their own working incomes into the minimum pension scheme. The new break-even point is about Nkr 130,000 and up to 70,000 individuals are expected to transfer to the minimum pension scheme following this year's adjustment.

Early retirement pension

9. An early retirement pension scheme (the avtalefestet pensjon-AFP) was introduced in 1989 allowing employees to retire at 64 years of age with benefits comparable to disability benefits. In the wage settlement for 1997 the social partners agreed to further reductions in the retirement age to 62 years effective from March 1998. Government workers and individuals associated with companies which have wage agreements with an early retirement pension provision are eligible for an early retirement pension. To receive an early retirement

pension an individual must have earned at least 10 pension points between the ages of 50 and 62 and must be earning at least Nkr 85,000 each year. In addition, the early retirement pension cannot exceed 70 percent of the individual's income during the three highest paying years between the ages of 56 and 60 and cannot be granted in conjunction with other special pensions such as the disability or widow/widower pension.

Occupational Pensions in the Government Sector

10. Pensions for government employees are calculated as the difference between two-thirds of the final pay level and the social security pension and are granted to those with 30 years of public service.

Disability pensions

11. An insured person between 18 and 67 whose working capacity is permanently reduced by at least 50 percent due to illness, injury or defect, is entitled to a disability pension if he has contributed to the NIS for at least three years up to the contingency. The insurance condition is waived if the person has been a resident of Norway for at least 20 years. The structure of disability pensions is similar to that of old-age pensions; they consist of a basic pension and a supplementary pension. Special provisions apply to those born disabled or who become disabled before the age of 26—these persons are guaranteed an income slightly above four times the basic amount.

Benefits

12. The NIS provides a variety of benefits including disability, occupational injury, rehabilitation, medical and cash benefits. Disability benefits consist of basic benefits and attendance benefits. Basic benefits are granted if the disability involves significant extra outlays; there are six benefit rates (up to about 70 percent of the basic amount) which are adjusted each year by Parliament. Attendance benefits are granted if the disabled person needs special attention or nursing; there are four benefit rates (up to 150 percent of the basic amount), which are also adjusted by Parliament each year. In the case of sickness, employees are entitled to daily cash benefits equal to 100 percent of pensionable income (up to six times the basic amount) for one year. The employer is responsible for the first 10 working days and the NIS the remainder. When on maternity leave, a woman who has worked six out of the ten months preceding confinement, is entitled to daily cash benefits of 100 percent of earned income up to six times the basic amount for 42 weeks, or 52 weeks at 80 percent of earned income.

Family allowances

13. Family allowances are provided for children residing in Norway under the age of sixteen. Prior to the new child allowance proposal adopted by the government (see below), the allowance for the first child between one and three years of age was Nkr 18,996, falling to

Nkr 11,112 once the child reached three years of age. Slightly higher amounts were provided for each additional child.

14. In May a new child allowance measure was passed providing up to Nkr 36,000 for each child between one and two years of age depending on whether use is made of the government's child care services. Families choosing to decline the government's child care services would receive the complete allowance irrespective of whether the child was looked after at home or through a private agency; the allowance would be pro-rated for families using the government's child care services on a part-time basis. The new measure came into force in August 1998 and would be extended to families with children between the ages of two and three in January 1999. The government also proposed to expand the coverage of government day care services to 75 percent of children aged between one and five years old; the current coverage is about 60 percent, up from 50 percent in 1995. To offset some of the expenditure costs of the new child allowance scheme, the government lowered the basic child allowance for children between one and three years of age to Nkr 11,112 for those participating in the new scheme.

Unemployment benefits

15. Unemployment benefits are provided to all insured persons registered at an unemployment office, able and willing to work, with an annual income of at least 1.25 times the basic amount the preceding calendar year or equal to the basic amount as an average during the three preceding calendar years. The calculation of benefits is based on the highest of the income of the preceding year or the average over the three preceding calendar years with income received from work, employment programs, periods of unemployment sickness and maternity included. The maximal benefit is six times the basic amount and the benefit rate normally gives an annual compensation of 62 percent of the calculation basis, and a delayed payment of an additional 6 percent, raising the replacement rate to 68 percent. The benefit period depends on earlier income from work. Labor income above twice the basic amount gives a benefit period of three years, labor income below twice the basic amount gives a benefit period of one and one-half years. When the initial benefit period has expired, a subsequent benefit period may be granted provided that the requirements concerning previous income are met. Persons over 64 are guaranteed at least three times the basic amount, paid without limitation until the age of 67. This could be considered an alternative form of an early pension provision.

Indexation and taxation of benefits

16. Since the introduction of the current pension system in 1967, the minimum wage has increased much more rapidly than the basic amount. Over the 1967–1990 period the real value of the minimum wage rose by about 80 percent, slightly higher than the increase in the real wage at about 60 percent, and much higher than the increase in the real value of the basic amount at slightly above 10 percent. Since 1990, the basic amount has increased at an average annual rate of about 4 percent, broadly in line with the average growth in wages. The

minimum pension has risen even more rapidly over this period averaging over 5½ percent per annum, consistent with the objective of successive governments in narrowing the dispersion of incomes for retirees.

17. The NIS is a pay-as-you-go system that is financed through employee and employer contributions (70 percent) and from general government tax revenue (30 percent). Benefits from the NIS are taxed as earned income with the exception of family allowances and minimum pensions. Contributions from employees are based on pensionable income above Nkr 17,000. The employee contribution rate is 7.8 percent of gross wage income; the employer contribution rate differs according to the regional zone in which the employees reside (ranging from 14 percent for Oslo to 0 percent for the Northern region). The contribution rate for pensioners is 3 percent.

B. Calculation of Long-Term Pension Expenditures

18. As in many other industrialized countries the aging of the population poses considerable financing challenges to Norway. Between 1995 and 2050 the number of pensioners is expected to increase by 65 percent while concurrently the budgetary contribution of petroleum revenue is expected to fall from a peak of 10 percent of GDP in 2005 to 2 percent of GDP in 2050. In contrast to other countries which have been forced to legislate increases in social security contributions to cover the financing gap between revenues and future pension obligations, under reasonable assumptions Norway could be in a position to use its State Petroleum Fund (SPF) to cover these expenses.[2] The purpose of this section is to describe in detail the assumptions which underlie the rapid projected increase in pension related expenditures over the next 50 years.

19. The calculations are based on annual demographic projections of the number of males and females at each age through 2050 and were provided by Statistics Norway. The figures take 1998 as a starting point and use the average basic and minimum pension amount for that year. The projections assume three categories of recipients of the national pension: supplementary pension earners, minimum pension earners, and individuals on disability pensions.

20. The basic expression for the calculation of the supplementary pension is as follows:

supplementary pension=(basic pension*pension-earning years*0.42)/40

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[2] The SPF was set up in 1990 to insulate the mainland economy from developments in the oil sector by channeling expected budget surpluses associated with the peak in petroleum production into a large net foreign asset buffer available to be drawn on when petroleum production falls to much lower levels. In recent years the government has also noted that the SPF could well become large enough to pay for the rapid rise in pension expenditures associated with long-run demographic trends.

The current average level of pension points for males and females (4.3 and 3.3) is used for all pensioners over 67 years of age. Male retirees in 1998 and beyond receive an increase in their pension points to 5.2; pension points for female retirees in 1998 and beyond are initially raised to 4.2 and gradually approach 5.2 to allow for the assumption about wage convergence over time. The choice of 5.2 for the number of pension points is based on the average number of pension points for individuals ranging from 47–67 years of age in 1995 (this is the most recent labor income survey data that is available).

21. Pension-earning years are assumed to equal 31 in 1998, corresponding to the difference between this year and its introductory year in 1967, and rise to a maximum of 40 in 2007. Since 1992 the value of pension-earning years has declined to 0.42 from 0.45 so that an individual turning 67 in 1998 will receive six years based on a pension value of 0.42 and the remaining 25 years based on the pension value of 0.45.

22. In the projection period the basic amount is indexed to average growth in wages which is projected at 6 percent over the next few years falling to 5 percent in 2003 and beyond. Nominal GDP growth is expected to average 5½ percent over the next few years, settling at 5 percent after 2001. Over the medium term wages and nominal GDP are expected to grow at the same rate because employment is projected to be broadly unchanged and workers are fully compensated for future increases in labor productivity.

23. The total minimum pension is indexed by nominal wage growth but the number of individuals receiving minimum pensions is expected to decline over time. This is because a large fraction of future generations will be eligible for the supplementary pension on account of the rapid increase in participation rates, particularly among females, over the past quarter century. In this analysis we take Fredriksen's estimates of the projected decline in the share of those receiving minimum pensions relative to the total population of pensioners.[3] From a current peak of 14 percent, the share of men on minimum pensions is expected to decline to 4 percent in 2050; for women, the current peak of 54 percent is projected to decline to 7 percent in 2050.

24. Since the mid-1980s the willingness of doctors to diagnose disabilities fairly liberally has resulted in a sizeable increase in the number of individuals on disability pensions and is partly responsible for the lowering of the age of eligibility for early retirement pensions to 62 years of age earlier this year. In this analysis the ratio of those on disability pensions to the population of 50–66 year olds is assumed constant at 35 percent, the projected level for 1999.

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[3] Fredriksen, D. (1998) "Projections of Population, Education, Labor Supply and Public Pension Benefits: Analyses Using the Dynamic Micro Simulation Model MOSART", Social and Economic Studies, Statistics Norway.

25. Putting the various components together indicates that the current ratio of pension expenditures to GDP at roughly 8 percent is projected to increase rapidly to about 17 percent of GDP in 2050 (Figure 1, Panel 1). The staff's projection broadly corresponds with the profile developed by the Ministry of Finance using a much more detailed simulation model. The major differences occur at the beginning of the projection period. The slightly higher expenditure profile of the staff over the 1999–2015 period reflects a higher base level of expenditures and a higher wage growth forecast over the next few years of 6 percent compared to the Ministry's estimate of 5 percent. The Ministry of Finance projection is fairly flat over the next five years because of the influence of the special transitional provisions made for those who were too old to be eligible for the current pension scheme which was set up in 1967.

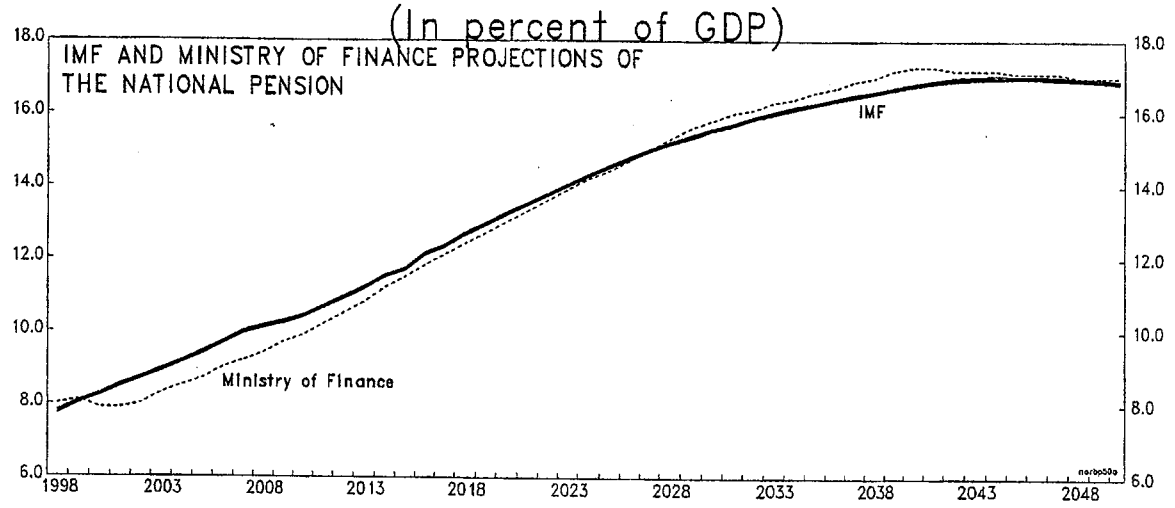
26. In addition to providing pensions for all Norwegians over 67 years of age, the State also finances supplements to government employees if two-thirds of their final salary is higher than the national pension benefit and early retirement pensions (the AFP). Projections of the supplement to government employees are calibrated on the pension distribution of government employees in 1997 assuming that the future profile of pensioners previously employed by the government is comparable to the rest of the population controlling for the more rapid growth in the number of government-employed pensioners. The current differential between the supplement for government employees and the national pension is assumed to be maintained during the forecast horizon. Finally, for those on early retirement schemes, the current ratio of recipients to the stock of 65–66 year olds is maintained over the forecast horizon. The initial pension is based on the weighted average of the early retirement pension of government employees in 1997, which broadly corresponds to a standard national pension with 5.2 pension points.

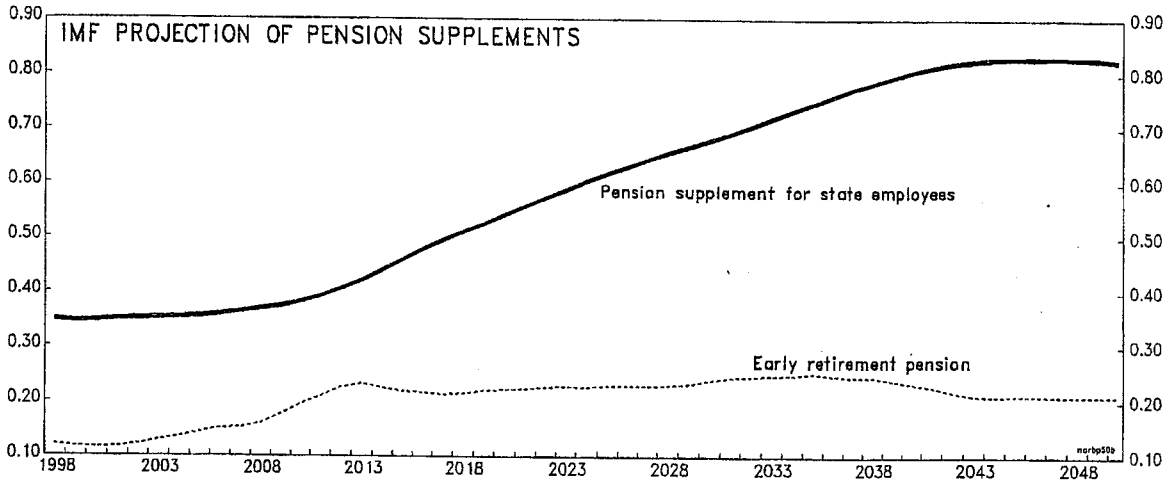
27. Figure 1, Panel 2 indicates that the pension supplement for government employees rises over time to level out at slightly above 0.8 percent of GDP. In contrast, the early retirement pension peaks at about 0.2 percent of GDP in 2010 and remains at this level for the duration of the projection period. A major factor explaining the different profiles is that the ratio of 65 and 66 year olds stabilizes after 2010 and no increase in pension points is factored into the projection for early retirement recipients because they already receive maximum pension points. Combining the profiles for the standard national pension, the supplement for government employees and the early retirement pension reveals an increase in pension expenditures over the next 50 years of about 10 percent to 18 percent of GDP in 2050 (Figure 1, Panel 3).

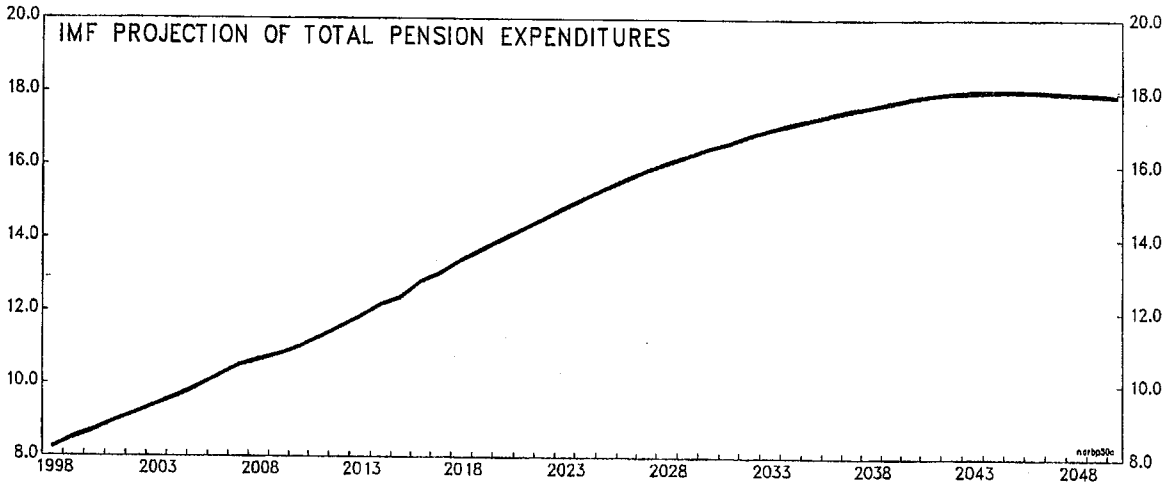
28. Chapter II discusses the prospects for fiscal sustainability over the long term by assessing the speed at which requirements associated with the deficit on the non-oil budget operations, including pensions, will draw down assets accumulated in the State Petroleum Fund, under various assumptions. The paper demonstrates that the baseline pension expenditure scenario presented above is not sustainable over the long-term because the SPF is exhausted by 2038. As one way to help address this issue, the staff has suggested making the

FIGURE 1
NORWAY

BASELINE PENSION PROJECTIONS
(In percent of GDP)







Sources: Ministry of Finance, and staff calculations.

pension system less generous by indexing pensions to CPI inflation instead of to average wage growth. This form of indexing is currently operative in many countries and was broadly followed for the basic amount over the 1967–1990 period in Norway. Figure 2 indicates that indexing future pensions to price inflation lowers the ratio of pension expenditures to GDP by about 5½ percentage points to about 12¼ percent of GDP in 2050. This modification to the system would help to ensure fiscal sustainability in Norway (see Chapter II for more details).

C. Recommendations of the Moland Committee on Financing the NIS

29. On July 2, Mr. Moland (the former central bank chief) presented the findings of a committee set up to consider various financing options for the current pension system. In its report the committee presented four financing alternatives but concluded that no system was superior to the others along all dimensions. The four alternatives considered are as follows:

1) maintaining the current system of accumulating assets in the State Petroleum Fund to cover future increases in social expenditures associated with the aging of the population but with no explicit earmarking of revenues for future pension liabilities;

2) setting up an independent pension fund which is fully funded but managed by the government;

3) setting up a private defined benefit pension fund which is fully funded with contribution payments based on the requirement to finance the future government mandated benefit. The fund would be managed by several private fund administrators; and,

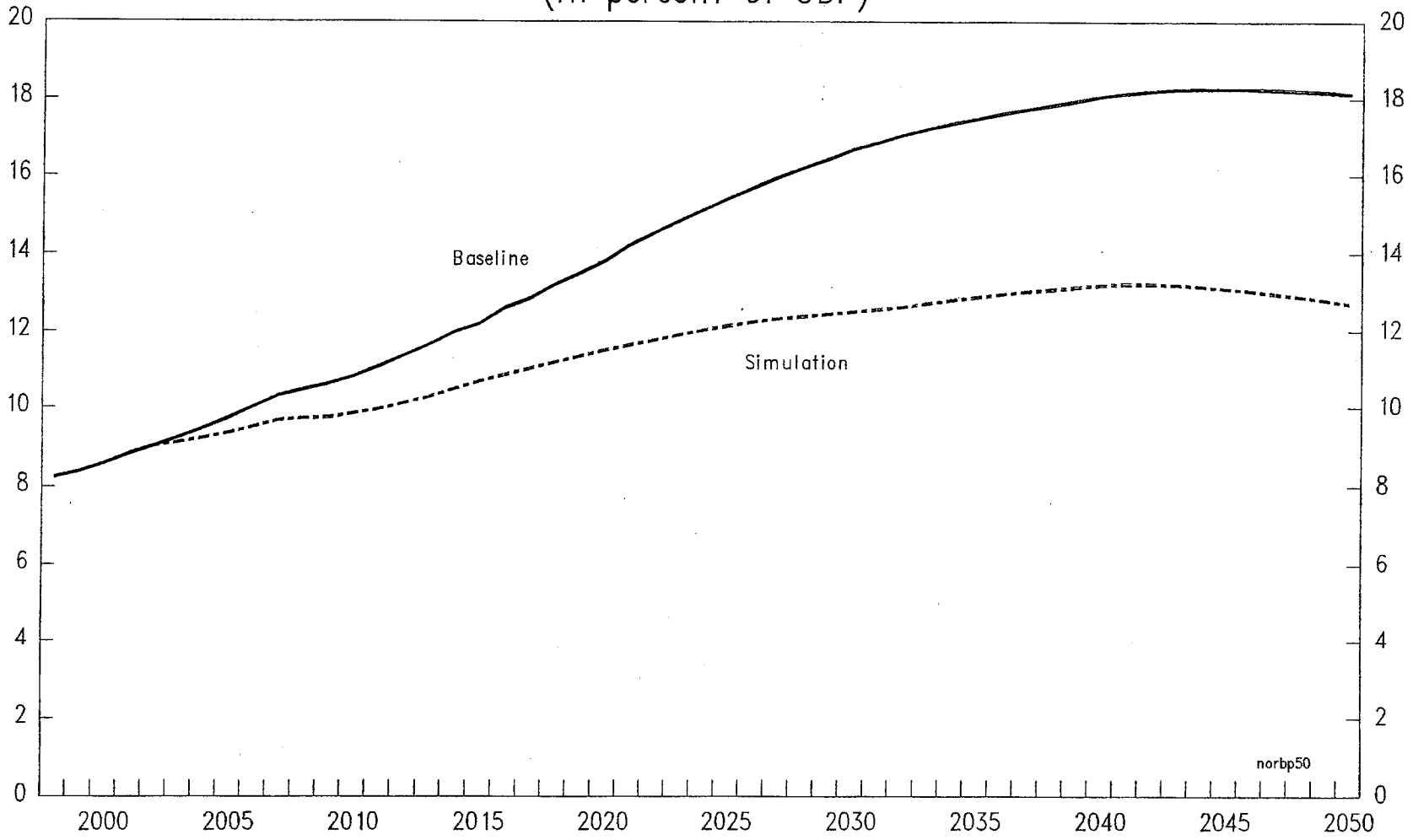
4) setting up a private contribution-based pension fund in which individuals' own contributions would determine their future pension benefit. This fund would also be managed by several private fund administrators.

30. The committee was unanimous on financing the minimum pension through the budget system but there was considerable debate on the relative merits of funding the supplementary pension privately or publicly. Moreover, within the public/private options there was a range of views on the relative merits of a funded system versus the continuation of the current unfunded system and on the merits of a defined benefit pension system versus a contribution-based system.

31. By not earmarking revenues for future pension liabilities, the current system is flexible regarding the financing of future expenditures which are unrelated to pensions and avoids giving the impression to the public that its future pension needs are completely covered, thereby implicitly raising the private saving rate relative to the alternative. On the other hand maintaining the current system could result in lower national savings than under a fully-funded system because without an implicit financing constraint decision makers are less conscious of

FIGURE 2
NORWAY

BASELINE AND SIMULATION PENSION PROJECTIONS
(In percent of GDP)



Source: Ministry of Finance, and staff estimates.

the size of the future unfunded liabilities and therefore could compromise the future sustainability of the pension system by not setting aside sufficient funds now. An important issue in deciding between the current system and a fully funded system is how such a transition would affect Norway's macro economy. One of the major arguments for investing the proceeds of the State Petroleum Fund overseas is that it moderates the effect of the current build-up of petroleum production on the Norwegian economy. If however, a fully-funded pension system is introduced, it is likely that there will be considerable demands for a large fraction of the fund to be invested in Norwegian securities because its obligations are in Norwegian kroner. This is a concern because the ability of the Norwegian authorities to neutralize the economic effects of a sudden increase in the demand for Norwegian securities is uncertain. A number of committee members recommend increasing the size of a fully-funded system gradually over time in order to minimize the potential for these effects.

32. The choice of a private versus public pension system involves comparing the benefit of higher expected returns through increased freedom of investment options against the increased administrative costs of private provision because of the absence of scale effects and the need for a long transition period. This is especially true of the contribution-based option because the availability of individualized investment plans will require offering each client the facility to monitor his own account. Moreover, in a contribution-based system, the size of the benefit withdrawal is highly uncertain because it depends on the success of the individual's investment strategy during his working life. Therefore, if implemented, this system could only apply to new retirees, thereby lengthening the transition period. In a defined benefit system the size of the contribution needed to pay for the defined benefit in future is uncertain and depends on future wage growth and on the average annual return.

33. Norway's pension regime has complex rules which only provide a weak link between contributions and payments because of the emphasis placed on distributional motives. The system could be simplified considerably by narrowing its focus to a basic pension funded through the budget system as recommended by the pension committee. A pension supplement based explicitly on contributions could then be added to the existing system which would allow individuals to choose their work pattens to influence their financial rewards in retirement. Provided that the basic pension was sufficiently generous, the variation between individuals in the size of the private pension supplement would not compromise the distributional objectives of the government. Moreover, the added administrative complexity of a contribution-based system would be partially offset by the paring down of the current system.

II. Recent Developments and Long-Term Prospects of the State Petroleum Fund[4]

A. Introduction

34. This note examines the implications of recent domestic and external developments for short- and long-run positions of the State Petroleum Fund (SPF). The SPF was established in 1990 as a means to promote a sustainable long-run fiscal position and to help maintain the competitiveness of the non-oil ("mainland") economy in the face of significant oil export revenues.[5] Since 1996 the Norwegian authorities have been transferring oil-related fiscal surpluses, averaging about 5 percent of GDP annually, to the SPF for investment in foreign assets. By end 1998 the value of SPF assets is expected to reach 15 percent of GDP. The rate of accumulation of assets in the SPF depends on the level of fiscal surpluses, the timing of transfers to the SPF, and the rate of return on investment. Beginning from 1998 the investment strategy of the SPF was broadened to include foreign equities in addition to bonds, and by June 1998 about 40 percent of the SPF was invested in equities.

35. The prospects for future accumulation of assets in the SPF were affected by a 40 percent fall in oil prices between the fourth quarter of 1997 and end-November 1998, a reassessment of the profile of oil production and exports, turmoil in global financial markets, and trends in the non-oil fiscal position. Long-term prospects for the non-oil fiscal deficit have deteriorated, owing mainly to recently announced increases in old-age pension benefits and softening of eligibility requirements for early retirement.

36. Section B provides an assessment of the long-run fiscal position based on the approach of the Norwegian Ministry of Finance and on an alternative suggested by staff. Section C reviews recent changes in the investment strategy of the SPF and the impact of the recent global financial turmoil on returns on SPF investments. The process of asset accumulation and investment performance during 1998 are summarized in Section D.

B. Long-Term Prospects for the State Petroleum Fund

37. This section presents the staff's *baseline scenario* and compares it with two alternative scenarios—the *government's budget scenario* and a *staff alternative*. The staff's baseline scenario is based on September 1998 WEO oil price assumptions through 2003 and incorporates the staff's projections about pension expenditures and petroleum production. The price profile entails a partial recovery from recent world oil price levels over the medium term, but subsequently—consistent with the 1999 budget—oil prices are assumed to decline again

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[4] Prepared by Natalia Koliadina.

[5] For additional information on the evolution of the SPF, see the paper issued as background for the 1997 Article IV consultation (SM/98/39, February 9, 1998, pp. 5–17).

to NKr 100 per barrel in 1999 kroner (about US$13.50) during 2004–2010 as a result of taxes or other measures adopted to implement the international agreement on carbon dioxide emissions. The tabulation below summarizes the assumptions and outlines the results for the staff's *baseline* and *alternative* scenarios:

Future SPF Assets: Underlying Assumptions and Results

	Baseline	Alternative
	(In percent)	
Assumptions		
Inflation 1999–2050	3.5	3.5
Real cumulative GDP growth in 1999–2003	11.0	11.0
Real rate of return	4.0	4.0
Oil prices in 1999 kroner:	(In Norwegian kroner)	
1997	137	137
1998	101	101
2002	130	130
2010	100	100
Annual real growth rate of underlying expenditure:[6]		
2000–2002	1.0 percent	1.0 percent
Pension expenditure in 2050:	18.1	12.4
Results in 2050:	(In percent)	
Non-pension expenditure-GDP ratio	27.8	27.8
SPF assets as a percent of GDP	-154	55

Sources: Ministry of Finance; and staff estimates.

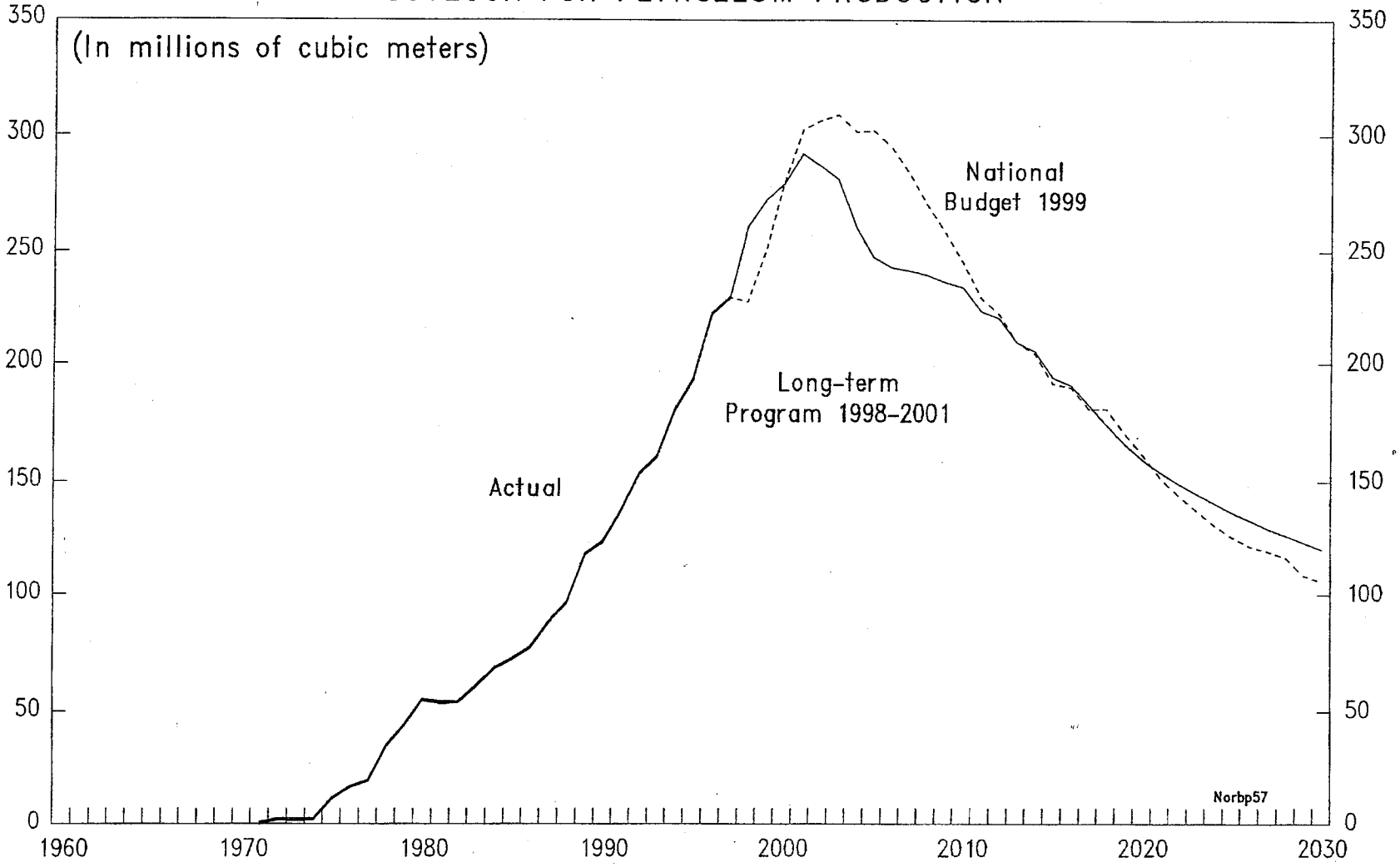
38. Oil revenues in both scenarios were based on the petroleum production profile of the Ministry of Finance (Figure 3). In line with recent government and operating company decisions, the oil production profile is now more back-loaded than had been assumed in 1996–97, thereby postponing some output into future years when oil prices are assumed to recover partially from current levels.

39. The projections for the non-oil fiscal position assume that the economy reaches its steady state in the long run, with revenues and expenditures constant as a share of GDP in 2003–2050. In line with the Ministry's medium-term assumptions, as announced in the 1999 budget, the revenue/GDP ratio is also kept roughly constant in 2000–2002, but the growth of

[6] Underlying expenditure is equal to total fiscal expenditure minus spending on petroleum activities, unemployment benefits, interest payments, support to shipyards, and refugees. The excluded categories presently account for about 12 percent of fiscal expenditure.

FIGURE 3
NORWAY

OUTLOOK FOR PETROLEUM PRODUCTION



Source: The Norwegian National Budget for 1999.

underlying expenditures is held to 1 percent per annum in real terms—about 1.3 percentage points less than the growth rate of real GDP.

40. The distinguishing feature between the staff's *baseline* and *alternative* scenarios is the share of pensions in GDP, which effectively determines whether Norway could face a robust long-term fiscal position or a large fiscal imbalance. In the baseline scenario, reflecting government decisions to raise pension benefits and ease early retirement provisions—assuming that pension benefits would be indexed to wages in the long run—pension expenditures are projected to rise from the current level of 8.2 percent of GDP to 18.1 percent of GDP in 2050. While such a policy toward future increases in pension benefits would be consistent with decisions taken in recent years, it does not represent some immutable custom in Norway—until 1990, pension benefits had increased at a rate below the increase in wages. The *alternative scenario* illustrates a long-term fiscal outcome that might prevail if pensions were indexed instead to consumer prices, with the result that the pension expenditure/GDP ratio would only reach about 12.4 percent in 2050.

41. In the *baseline scenario* the overall fiscal surplus is projected to peak in 2003, and to turn into deficit in 2014 (Figure 4, Panel 1). The SPF assets would continue to rise until 2016, when they reach a peak of 105 percent of GDP, and decline thereafter until the depletion of the funds in 2038. Lower pension expenditures in the staff's *alternative scenario* would permit a sustainable long-run fiscal position, allowing the SPF to grow to a maximum of 123 percent in 2022 and then to decline gradually to just over 50 percent of GDP by 2050.

42. The *government's* 1999 budget scenario assumes that additional fiscal adjustment will be carried out throughout the period, leaving the SPF with asset holdings of about 15 percent of GDP in 2050. The adjustments include the moderation of underlying expenditure growth in 2000–2002, as described above, and limitation of the growth of public sector employment to 0.5 percent per annum through 2030 (well below the annual average growth of 2½ percent over the last two decades). In addition to these adjustments, a combination of further expenditure and revenue measures are assumed to yield additional fiscal savings of about 3½ percent of GDP by 2050. Finally, the authorities' estimate for pension expenditures is about 1 percent of GDP lower than the staff scenario over the long term.[7]

43. Apart from the SPF there are other net financial assets held by the public sector, totaling about 23 percent of GDP in 1995. These include net assets from a defunct government pension fund, assets held in the state banks and the valuation at cost of public enterprises. Earnings on these assets are another possible offset to the potential long-run deficit on other fiscal operations. Adding these to the SPF, the staff's baseline scenario would still show a net liability of 90 percent of GDP in 2050. Under the government's 1999 budget scenario, the result would be a net asset position of about 70 percent of GDP (Figure 4, Panel 2). Net financial assets would be maintained at over 110 percent of GDP in the staff's alternative scenario, ensuring long-run fiscal sustainability.

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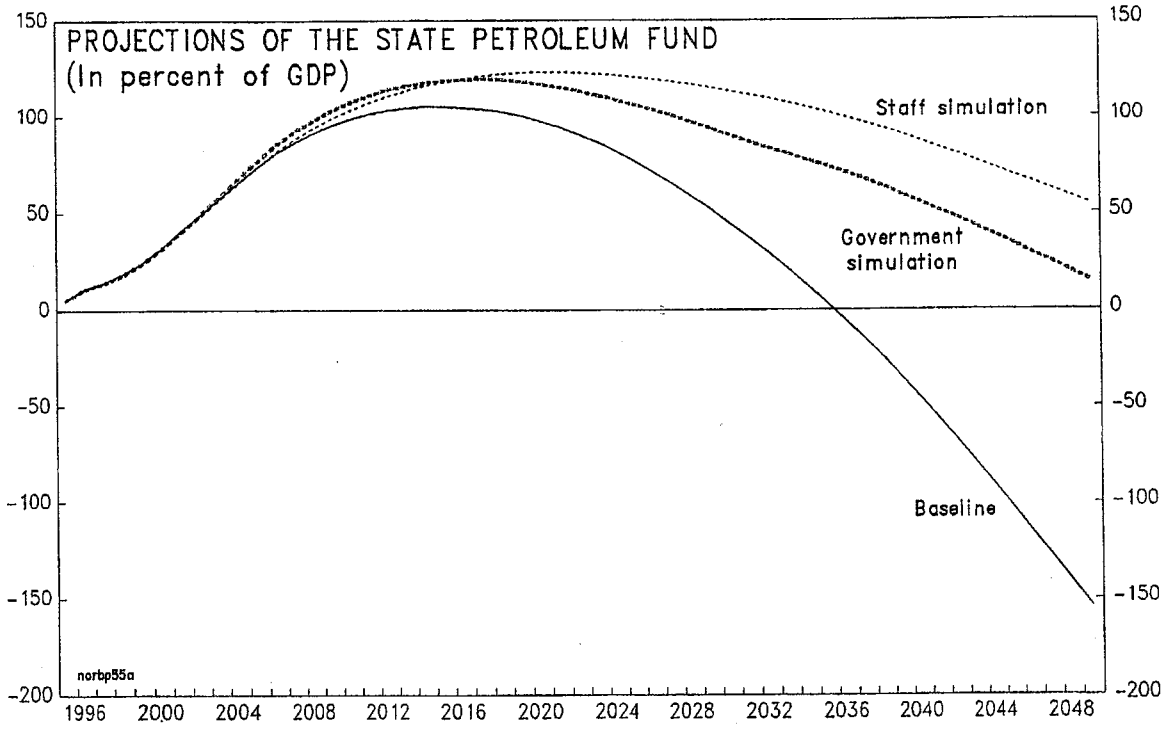
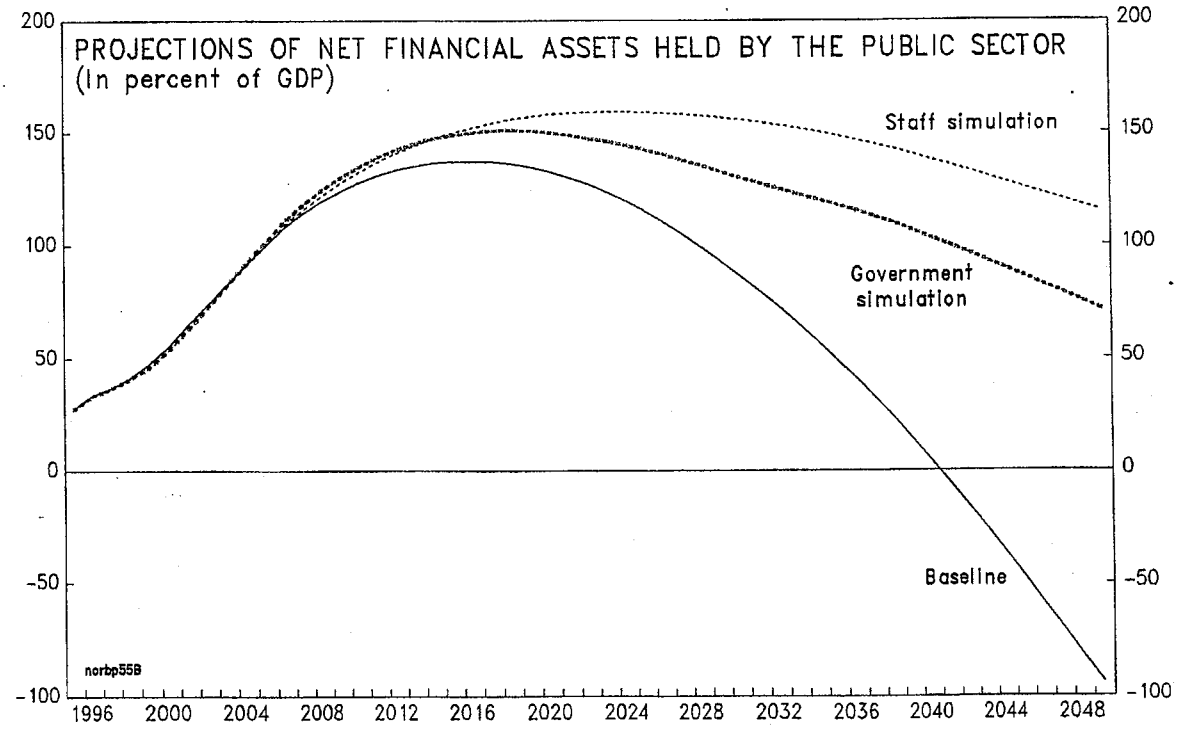
[7] For details, see the background paper on "The Social Insurance System."

FIGURE 4
NORWAY

LONG-TERM PERSPECTIVES ON FISCAL POLICY





Sources: Ministry of Finance, The Norwegian Budget for 1999, and staff estimates.

C. Investment Strategy and Management of the SPF

44. Before 1998 all the assets of the SPF were invested in low-risk, interest-bearing financial instruments, such as bonds and bills, issued by foreign governments or highly rated international institutions. The currency composition of the SPF investment portfolio was defined by Norway's import weights—about 75 percent of the Fund was invested in Europe, with one-third placed in Swedish and Danish assets.

45. In 1997 the authorities reviewed the guidelines for management, investment strategy, and currency distribution of the SPF's investment portfolio. The government decided to diversify the currency composition, range of instruments, and geographical allocation of SPF assets. In the process the SPF was instructed to reduce its exposure to Europe from 75 percent to 50 percent, and to place 30–50 percent of its assets in "developed equity markets." The latter decision was supported by evidence that the long-run rate of return on a portfolio containing both equities and fixed-income instruments is, on average, higher than the return on a fixed-income portfolio. The long-term investment horizon—the authorities do not expect to draw on the SPF until well after 2010—reduces risks associated with equity markets being more volatile than bond markets. The SPF investment in equities is limited to portfolio investment, with investments in individual companies not exceeding 1 percent of their share capital.

46. The intensified volatility of global financial markets in 1998 did not affect the decision of the authorities to invest part of the SPF in equities, and by June 1, 1998 the equity share had reached 40 percent of the total portfolio. The tabulation below presents the composition of the SPF portfolio as of June 1, 1998:

The State Petroleum Fund: Country Composition of Investment by Asset Class

Country	All Assets	Bonds	Equities
U.S.A.	28.3	16.7	11.6
Europe,	50.0	30.0	20.0
Of which			
United Kingdom	10.7	3.9	6.8
Germany	10.6	7.8	2.8
France	7.5	5.1	2.4
Italy	5.4	4.1	1.4
Asia and Oceania	20.0	12.0	8.0
Of which			
Japan	17.5	11.1	6.4
Australia	1.7	0.9	0.8
Hong Kong, China	0.7	0.0	0.7
Total SPF	100.0	60.0	40.0

Source: Ministry of Finance.

47. The SPF had only limited exposure to the financial crisis in Southeast Asia, and none in Russia or Latin America. Investment performance has been affected mainly by financial market developments in advanced economies, including Japan.

48. Norges Bank is responsible for management of the SPF on behalf of the Ministry of Finance. The Ministry has formulated both the overall investment guidelines and the benchmark portfolio against which the performance of the actual portfolio is measured. The new benchmark portfolio, which was phased in during January–May 1998, is composed of specified equities and bonds in 21 countries, with the equity share of 40 percent of the total portfolio. The upper limit for market risk in the actual portfolio in relation to the benchmark portfolio is set at 150 basis points *expected tracking error*, based on daily computation.[8]

49. Part of the SPF is managed by external managers, closely monitored by Norges Bank. Most of the bond portfolio is managed by Norges Bank, with somewhat less than 1 percent (about NKr 750 million) managed externally by ABN AMRO Asset Management in London. The equity capital is being managed entirely by external managers—Bankers Trust Company,

[8] The Ministry of Finance uses the risk measure *expected tracking error* to manage the market risk of the SPF investment. The tracking error is calculated as an expected value of the standard deviation of the difference between the return on actual investment and the return on the benchmark portfolio.

Barclays Global Investors Limited, Gartmore Investment Limited, and State Street United Kingdom Limited—which follow an indexing strategy. A small portion of the equity portfolio is to be placed under active management in the near future; the process of selecting external managers for this portion is to be completed by end-1998.

50. All externally managed portfolios are monitored by Norges Bank on a daily basis, using information received electronically from Chase Manhattan Bank—the global custodian for SPF equity investments. Internally managed portfolios are monitored in a similar fashion on the basis of Norges Bank settlement and accounting data. The risk management system (BARRA) evaluates the deviation of the entire portfolio from the benchmark.

D. Asset Accumulation and Investment Returns

51. Transfers to the SPF from the budget are derived from surplus oil revenues, after deducting the portion necessary to finance the non-oil budget deficit. Accumulated assets in the SPF at end-1997 totaled 10.8 percent of GDP, including 10.4 percent of GDP in transfers from the budget during 1996–97 and 0.4 percent of GDP in investment income. The value of the SPF is estimated to be close to 15 percent of GDP by end-1998, and would increase to almost 19 percent of GDP by end-1999. The tabulation below summarizes accumulation of assets in the SPF:

Asset Accumulation in the State Petroleum Fund
In percent of GDP

	1996	1997	1998 (Proj.)	1999 (Proj.)
Oil revenues	8.6	9.9	6.8	7.0
Amount used to finance non-oil budget deficit	2.5	2.1	1.7	0.5
Net transfers to the SPF	4.5	5.9	2.6	4.5
Dividends and interest on the SPF	0.1	0.3	0.5	0.5
Total SPF assets end-year	4.6	10.8	13.9	18.9

Sources: National Budget 1998 and 1999; and staff estimates.

52. In the first nine months of 1998, the rate of return on the SPF investment was 2.09 percent measured in terms of the SPF currency basket, of which 8.94 percent was the return on the bond portfolio and -3.75 percent on the equity portfolio (see tabulation below). The rate of return in domestic currency terms was higher, reflecting the depreciation of the kroner.

53. The return on SPF assets was much higher in the first half of 1998, but turned negative in the third quarter owing to the downturn in world equity markets. The combination of under-performance of the bond portfolio and higher actual equity holdings, compared with those of the benchmark portfolio, resulted in the actual return being 0.23 percentage point lower than the return on the benchmark portfolio.

Evolution of Return on the SPF Investment in 1998
(In percent)

	Actual	Benchmark	Difference
Benchmark currency basket:			
January-June 1998	5.88	5.43	0.45
July-September 1998	-3.58	-3.35	-0.23
January-September 1998	2.30	2.08	0.22
In Norwegian Kroner:			
January-June 1998	9.25	8.78	0.47
July-September 1998	-3.76	-3.53	-0.23
January-September 1998	5.49	5.25	0.24

Source: Ministry of Finance.

III. The Choice of a Nominal Anchor for Norway[9]

54. Norway has traditionally used an exchange rate target as a nominal anchor, to help guide inflation expectations. An alternative nominal anchor used in a number of other resource-based industrial countries is an explicit inflation target. Because both nominal anchors have advantages and disadvantages, there continues to be an active policy debate in Norway over the choice of the monetary policy framework. This paper examines the pros and cons of these regimes in a Norwegian context.

A. Exchange Rate Targeting

55. Norway has a long history of exchange rate targeting which goes back to the silver standard in the mid-1800s, when the monetary unit was linked to silver at par value.[10] In the 1870s a gold standard was established, under which Norges Bank exchanged krone for gold at a fixed rate. Following a short period with a floating exchange rate, the gold standard was abandoned by Norway in 1931 and the currency was pegged to the U.S. dollar and pound sterling. After World War II, Norway participated in the Bretton Woods agreement and, following its collapse, the European currency "snake." When the European Exchange Rate Mechanism was established in 1978, Norway chose to remain on the sidelines and link the krone to a trade-weighted basket of currencies (later to the ECU).

56. Since December 1992 Norway has operated a managed float exchange rate regime, in which Norges Bank seeks to maintain a stable krone exchange rate. Although the explicit wording of the monetary policy guidelines relates to currency stability against "European currencies," Norges Bank has generally behaved as if it was targeting the krone/ECU exchange rate with an implicit target range of 103–105 on the inverted ECU index.[11] In May 1998, the government announced that Norges Bank would continue maintaining a stable krone exchange rate against European currencies when the euro is introduced on January 1, 1999. It is expected that the euro will replace the ECU as the implicit target. This

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[9] Prepared by Alun Thomas.

[10] This section is based on J. Qvigstad, "Norwegian traditions and international trends," in A. Christiansen and J. Qvigstad eds. *Choosing a monetary policy target, Scandinavian University Press, Oslo* 1997

[11] The monetary policy guidelines announced in a Royal Decree in May, 1994 indicated that monetary policy was to be aimed at maintaining a stable exchange rate of the krone against European currencies, based on the range of the exchange rate maintained since the krone was floated on December 10, 1992. These guidelines are still in effect.

will simplify the transition process because these two composite currencies will be equivalent on the final trading day in 1998.[12]

57. Exchange rate targeting has several advantages, including linking the inflation rate for internationally traded goods and inflation expectations to the inflation rate in the anchor country. It also avoids the time inconsistency problem, which can arise when a monetary authority pursues short-run growth and employment gains at the expense of higher inflation and lower growth in the long run. However, exchange rate targeting is not without its drawbacks. These include the loss of an independent monetary policy and the quick transmission of shocks from other countries (particularly terms of trade shocks), which can adversely affect the domestic economy. Moreover, by providing advance information on the policy reaction function, exchange rate targets can make countries more vulnerable to speculative attacks on their currencies, such as the European exchange rate crisis of September 1992.

58. Between December 1992 and August 1998, interest rate movements in Norway were largely determined by interest rate movements in Germany. With interest rates in Germany set in accordance with its own economic conditions (which often differ considerably from those in Norway), the Norwegian economy until recently has been faced with interest rates which are incompatible with its cyclical position. This became most apparent during 1997, when Norwegian interest rates were lowered significantly even though the economy was experiencing excess demand pressures. This situation changed dramatically in August 1998, when the Norwegian krone came under strong downward pressure in the exchange market and Norwegian short-term interest rates were raised by 425 basis points.

59. The problems raised by the procyclicality of monetary policy in Norway in the recent past led to a number of proposals for altering the monetary framework. One proposal that would have maintained a considerable degree of continuity in the monetary strategy was to adopt a broader exchange rate indicator, based on a weighted average of the currencies of all of Norway's major trading partners. Historically, the difference between the movements of the ECU and a trade-weighted index has been small and the corresponding short-term interest rates have also moved closely together (Figure 5, Panels 1 and 2). In fact, in recent years the ECU short-term interest rate has been above the trade-weighted interest rate, because the very low interest rates prevailing in Japan have more than offset higher interest rates in the United States. Therefore, it is unclear that shifting to a broader exchange rate index would have much effect on Norwegian monetary policy.

60. A case for abandoning the exchange rate target completely has been made by those who believe that the strong commodity base of Norway's trade (including the dependence on

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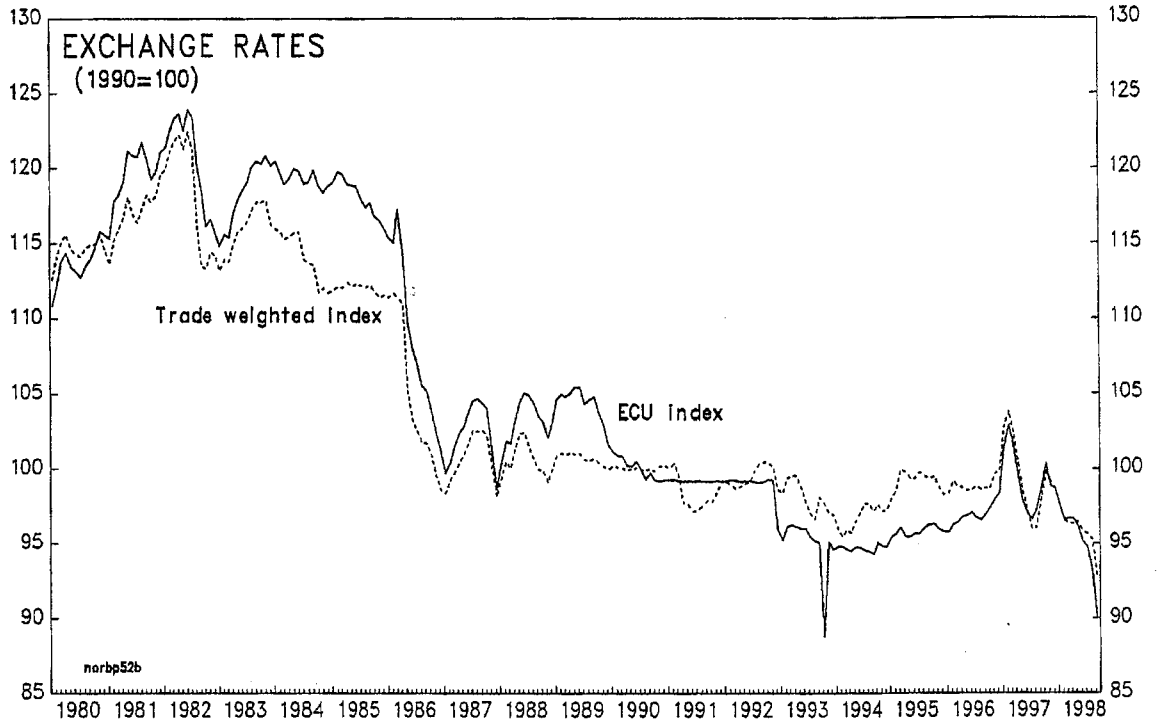
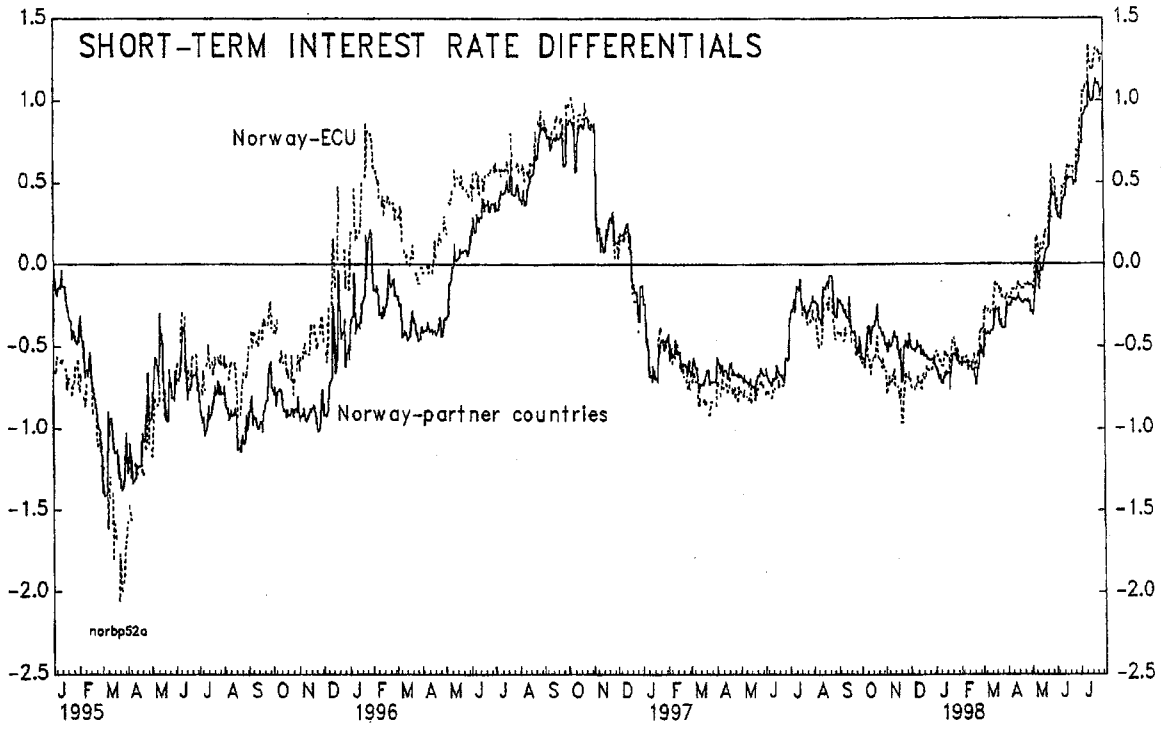
[12] The euro differs from the ECU in excluding the Danish and Swedish kroner and UK pound from its basket of currencies.

FIGURE 5
NORWAY

INTEREST RATE AND EXCHANGE RATE DEVELOPMENTS





Sources: IMF, International Financial Statistics.

oil exports) makes the exchange rate highly sensitive to movements in the terms of trade, and therefore difficult to control. Among industrial countries, Canada, Norway, and Australia have the highest ratios of raw material exports relative to total exports, at 31, 37, and 58 percent respectively. Substantial falls in world market prices for raw materials, as experienced in 1998, result in large real income declines in these countries. Under these circumstances, insufficient immediate adjustment in the demand for goods and services would lead to a sizeable deterioration in the current account balances of these countries, which eventually results in a fall in demand for their currencies. These currency depreciations ultimately help to restore external balance by lowering the demand for imports.

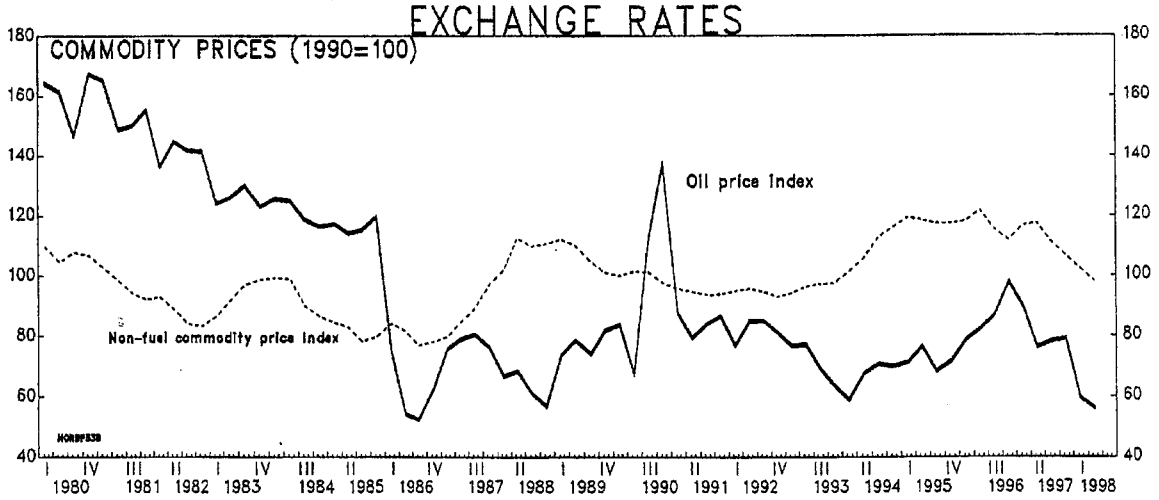
61. The empirical link between changes in the terms of trade and movements in the real exchange rate is well documented in the literature. For example, Amano and Van Norden (1995) find that the ratio of the price of commodity exports to manufactured imports explains most of the variation in the real exchange rate in Canada and Gruen and Wilkinson (1994) find similar results for the Australian dollar using the deflators for goods and services as the measure of the terms of trade. More recently, Hansen (1997) has found similar results for the New Zealand dollar. Concerning Norway, one of the background papers for last year's consultation found that the present value of petroleum wealth had significant explanatory power for movements in the Norwegian krone exchange rate. In particular, the paper suggested that a 1 percent increase in the present value of petroleum wealth in relation to GDP (comparable to the effect of a 1 percent increase in oil prices) was associated with a 1½ percent appreciation of the real exchange rate.

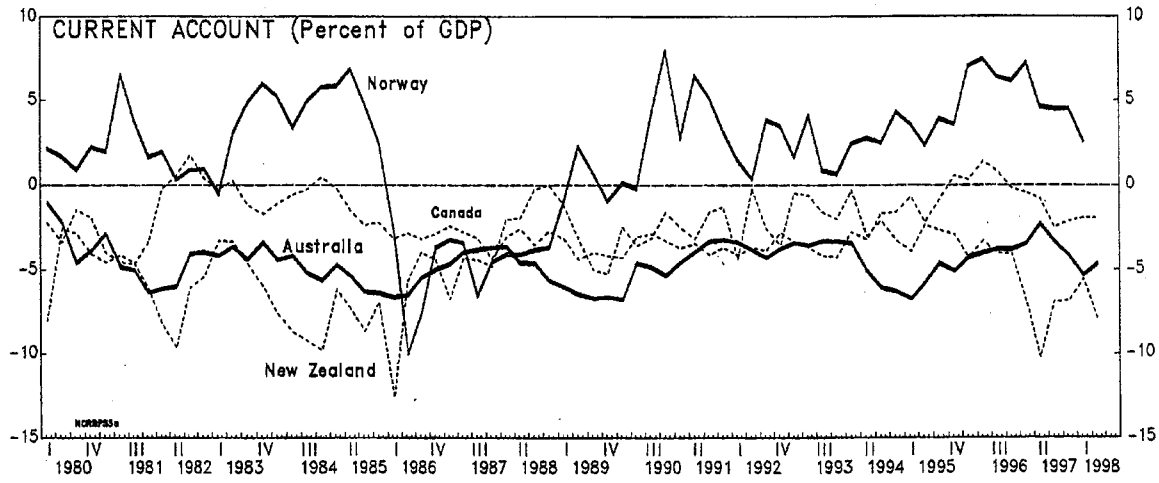
62. Owing to the large decline in oil and non-oil commodity prices which began in the second quarter of 1997, the current account balances of the major industrial commodity exporters have deteriorated considerably, with Canada and Australia projected to record deteriorations in their current account positions of ½ and 2 percent of GDP respectively in 1998 (Figure 6, Panels 1 and 2). Although New Zealand's current account position is projected to improve slightly in 1998, it has deteriorated by 3 percent of GDP since 1996. Norway's current account surplus declined by an estimated 5 percent of GDP in 1998. In response to the sharp declines in commodity prices and the deterioration in current account positions, the exchange rates of the commodity exporters have also depreciated. In particular, the Australian and New Zealand currencies fell by 15–20 percent between the second quarter of 1997 and the second quarter of 1998, while the Canadian dollar and the Norwegian krone have each depreciated by about 10 percent against the U.S. dollar and ECU respectively since the beginning of 1998 (Figure 6, Panel 3).

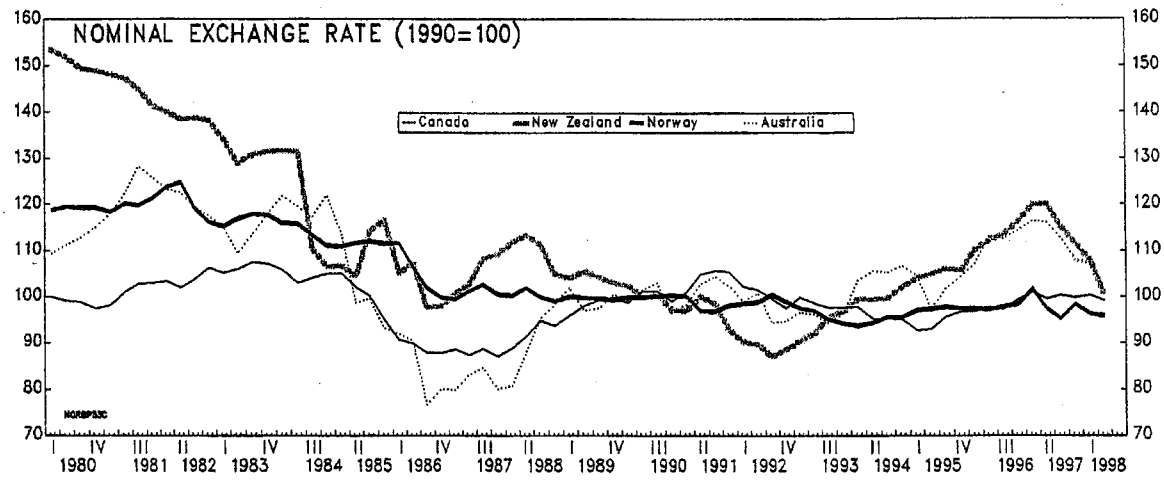
63. The imminent onset of the third stage of EMU, at the beginning of 1999, is widely considered to have become a source of increased currency volatility for Norway, because of its small size and close links to the economies of EMU participants. This event, combined with continued uncertainties regarding the outlook for petroleum and other commodity prices, makes it difficult for Norway to maintain the present exchange rate targeting framework.

FIGURE 6
NORWAY

COMMODITY PRICES, CURRENT ACCOUNTS AND EXCHANGE RATES







Sources: IMF, International Financial Statistics; and OECD.

64. There has been considerable public debate in recent months about the possibility that Norway could increase the credibility and sustainability of its exchange rate target by adopting an explicit target band in terms of the euro, under a formal arrangement involving the potential for liquidity support from the European Central Bank. For better or worse, such a policy would accentuate the rigidities in interest rate policy experienced under the current regime. In particular, since Norway's terms of trade and cyclical position frequently diverge from those of the countries participating in the EMU, interest rate policy could be expected to be constrained on many occasions from responding to domestic economic conditions.[13] In any event, it appears unlikely that the ECB would be willing to provide liquidity to Norway to assist in defending the krone/euro exchange rate, unless Norway became a member of the European Union. With limited political interest in this proposition at present, this possibility could only become operative over the medium term.

B. Inflation Targeting

65. In contrast to Norway, some other resource-based industrial countries have adopted inflation targeting as their anchor for monetary policy (Canada, Australia, New Zealand; nonresource-based advanced economies with an inflation target include Sweden and the United Kingdom). The policy of inflation targeting involves several elements: (1) an institutional commitment to price stability as the primary long-run goal of monetary policy; (2) official announcements of a quantitative medium-term target for inflation; (3) increased transparency of the monetary policy strategy through communication with the public; and (4) sufficient operational independence for the central bank to give credibility that the inflation target will guide monetary policy even when the short-term costs for real activity are apparent; and (4) accountability of the central bank for attaining the inflation objective.[14]

66. Inflation targeting, like exchange rate targeting, has the advantages that it is highly transparent and easily understood by the public; and that the increased accountability of the central bank helps to avoid the time inconsistency trap of pursuing an overly expansionary monetary policy at the expense of a deterioration of long-term economic prospects. In contrast with an exchange rate target, inflation targeting enables monetary policy to focus on domestic considerations and to respond to shocks to the domestic economy.[15]

67. A potential drawback of inflation targeting for Norway is that the initial effects of a tightening of monetary policy may be felt more strongly through a strengthening of the exchange rate, tending to depress non-oil net exports, than through changes in domestic

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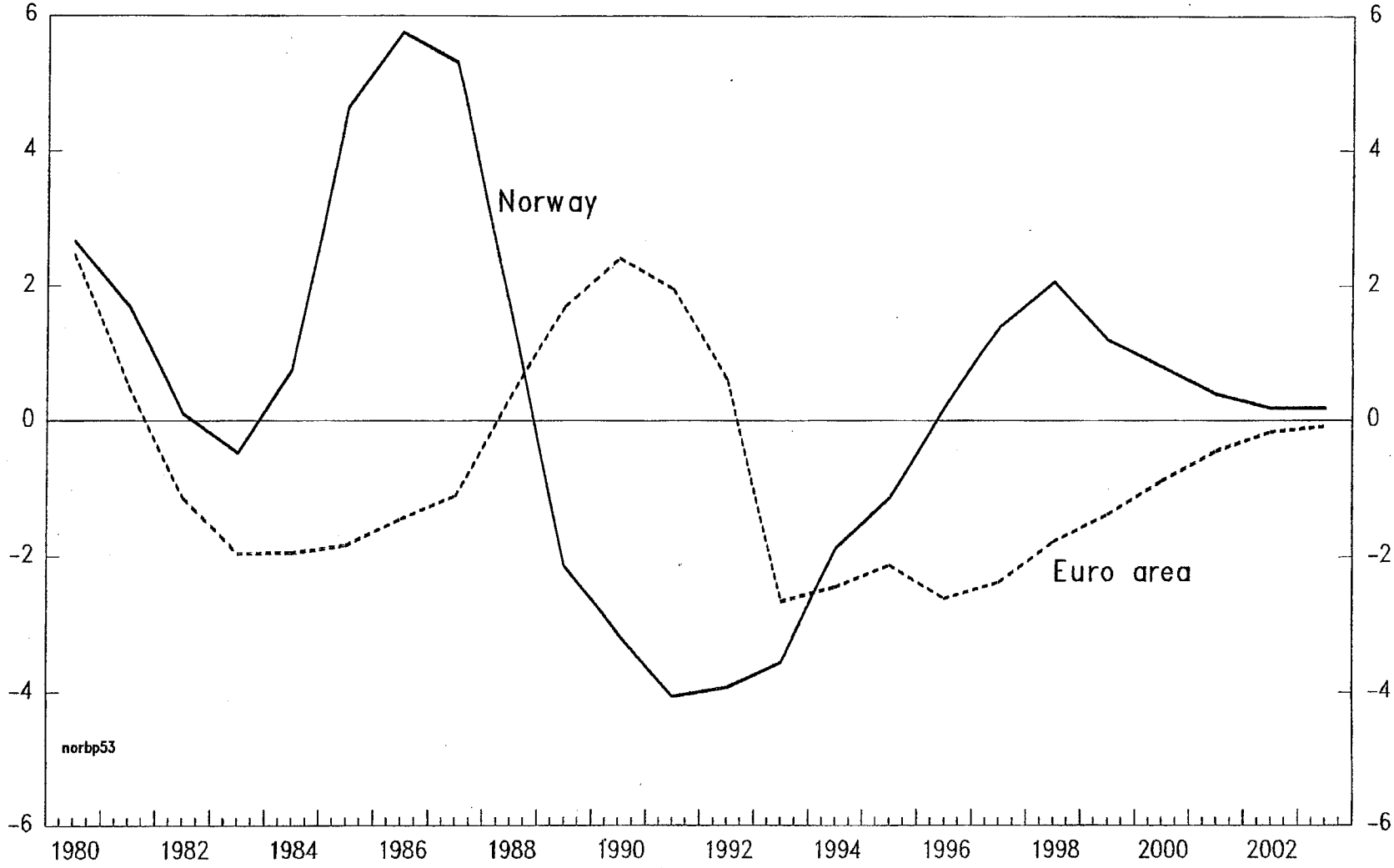
[13] Over the past two decades the cyclical position in Norway has diverged from the cyclical position in the euro zone, due in part to the importance of Norway's oil sector (Figure 7).

[14] These issues are discussed in more detail in Mishkin (1998) and Svensson (1997/1998).

[15] In addition, in contrast with targeting a monetary aggregate, it is able to deal with sudden changes in velocity because it does not rely on a stable money-inflation relationship.

FIGURE 7
NORWAY

OUTPUT GAP



Source: Staff estimates.

demand. Given the importance of oil in the Norwegian economy and the need to maintain the competitiveness of the non-oil sector, the potential of exacerbating exchange rate movements through a more active use of monetary policy has been described as a serious drawback of inflation targeting. Researchers at Statistics Norway have calculated that an appreciated exchange rate provides the initial contractionary effect of a tighter monetary policy stance by dampening net exports and that the effects of higher interest rates on domestic demand occur more gradually over time. They estimate that a 2 percentage point increase in interest rates and a 4 percentage point appreciation of the exchange rate over two years would result in a cumulative output loss of over 2 percent of GDP, comparable to the output loss in other countries in response to a tightening of monetary policy.[16] An appreciated exchange rate would lead to an output contraction of ½ percentage point in the first two years with higher interest rates contracting output by an additional ½ percentage point in the second and third years. It could be argued, however, that a counter-cyclical tightening of monetary conditions would not compromise the competitiveness of the non-oil sector over the long-run, because a relaxation of monetary policy in a downswing would have the opposite effects and cancel out over the cycle. This would be the case if the effects of monetary policy on the economy were symmetrical.

68. Some analysts argue, however, that the effects of exchange rate movements are not symmetrical because investments in a country incur fixed costs. According to the option argument of Dixit (1989), firms enter and invest in a country when its real exchange rate is undervalued and develop valuable intangible assets specific to the location. If the exchange rate should subsequently appreciate, foreign firms will not exit at the same exchange rate at which they entered because of the presence of large fixed costs. Expectations of future pressures for appreciation which, in the Norwegian context, could be associated with the future build up of net foreign assets, could therefore deter foreign investment for long periods.

69. Another concern in transferring the responsibility of controlling cyclical fluctuations to monetary policy is that it could reduce the incentives of the government to maintain a firm hold on fiscal policy. Since late 1993 the Norwegian authorities have relied upon an economic strategy called the Solidarity Alternative, in an attempt to preserve the competitiveness of the mainland economy in the face of a large surge in oil revenues. Under this strategy, the unions have consented to moderate wage settlements, in return for the government's commitment to orient monetary policy toward stabilizing the exchange rate, while fiscal policy is used for demand management. Over much of the period since 1993, fiscal policy was used actively to moderate the cyclical upswing in the economy against a backdrop of rising fiscal surpluses, although the fiscal effort has weakened in 1997–98. Some Norwegian commentators believe that without the constraint of moderating cyclical imbalances, pressures for a more expansionary fiscal policy would heighten with adverse consequences for the competitiveness and sustainability of the non-oil sector over the medium term (Dutch disease effects).

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[16] See in particular, "The monetary transmission mechanism in Sweden" Selected Issues Sweden 1997.

70. One way of transferring the responsibility of moderating cyclical imbalances to monetary policy while maintaining fiscal discipline would be to change the focus of fiscal policy from the immediate cyclical situation to a more long-term horizon. The Ministry of Finance has made efforts in this direction in recent years by emphasizing the need to set aside resources to finance rising pension and health obligations that will arise in the future, owing to demographic changes, at a time when oil reserves are expected to be greatly diminished.

71. Even after a decision to adopt an inflation target, exchange rate movements would need to be taken into account prominently in assessing inflation prospects, because the import weight in the CPI is about 40 percent, compared to a weight of about 25 percent in the other resource-based industrial countries. Therefore, if the exchange rate depreciated sharply, Norges Bank might choose to raise interest rates in order to moderate the future effects of exchange rate movements on inflation. Central banks following an inflation target generally accommodate modest, temporary fluctuations in the exchange rate and only change interest rates if the exchange rate movements are expected to lead to permanent effects on the inflation rate, through expectations or wage developments. However, some resource-based countries that rely on inflation targeting make explicit allowance for significant exchange rate depreciation in the event of terms of trade shocks. According to the models developed at Norges Bank and Statistics Norway, a 10 percent depreciation would result in a 2–2½ percent increase in the CPI within one year, rising to 4 percent after three years.

72. Although targeting the aggregate inflation rate is generally understood by the public, deviations from inflation targets are often allowed in inflation targeting regimes in response to supply shocks such as changes in food and energy prices, indirect tax changes, and imputed rental costs. Indeed, cross-country experience suggests that, if and when Norway decided to switch to an inflation target, it would be prudent to consider an inflation target which excluded the effects of temporary supply shocks. In New Zealand the Reserve Bank has identified one-off shocks to prices arising from supply-side developments to which it does not have to react in pursuing the inflation target. These include exceptional movements in commodity prices, changes in indirect taxes, and other government policy changes that directly affect prices. In Canada, the inflation target excludes food and energy prices and the contribution of indirect taxes, and in the United Kingdom, mortgage interest payments are excluded from the inflation target. Although the Swedish Riksbank targets the aggregate CPI, the large effects on the CPI of indirect tax changes and sharp reductions in interest rates in recent years has led to increased emphasis in its inflation reports on the evolution of inflation excluding mortgage interest costs and indirect tax and subsidies.[17] Norges Bank periodically reports inflation excluding volatile electricity prices and indirect taxes and work by Bjørnland (1998) indicates that excluding oil prices from the determinants of core inflation (on the basis that it affects long-run output) leads to a smoother inflation series.

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[17] Partly in response to criticism that the actual inflation rate has come below the desired inflation target band in recent months, Statistics Sweden has begun publishing this measure of the underlying inflation rate and is in the process of refining it.

73. Finally, an issue which is central to the successful implementation of inflation targeting is central bank independence.[18] This is generally understood to mean instrument or operational independence for the central bank to pursue its monetary policy goal free of short-term political pressure from the government; the goal itself is generally set by the government. An important condition for allowing the central bank to carry out its policies independently is that it is held accountable for its actions. This requires a transparent reporting system for the central bank's policy actions through publications and appearances in parliament.

74. The legal framework in the United Kingdom and in New Zealand provide a flavor of the type of measures that have been implemented to secure central bank independence in these countries. The instrument independence granted to the Bank of England in 1998 provides it with full freedom to achieve the inflation target of 2½ percent but, if the actual inflation rate deviates more than 1 percent either side of the 2½ percent target, the Governor of the Bank of England is expected to write an open letter to the Chancellor explaining the reasons for the divergence from target. The Chancellor can also override the Bank's decisions on the use of monetary instruments *in extremis*, but only in an open way. The Reserve Bank of New Zealand has been granted instrument independence since 1989 and its accountability is achieved through a periodic review of monetary policy by the Bank's Board of Directors who report to the Treasurer. An unfavorable review can lead to the dismissal of the Governor.

75. In Norway the central bank has *de jure* instrument independence because the government has no legal authority to instruct Norges Bank about interest rate decisions, unless the issue is brought before the King in Council. This has never been tried because of the potential for adverse publicity and damaging asset price fluctuations in the money markets. However, the ability of the government to invoke a meeting of the King in Council is generally seen as providing a means to limit the *de facto* instrument independence of Norges Bank. If Norway were to choose to adopt an inflation target, the existing central bank laws would need to be amended and new policy statements issued, establishing the inflation target and allowing complete freedom for Norges Bank to implement this strategy.

C. Conclusion

76. This paper has noted that, as a small open economy, Norway can benefit significantly from the use of a nominal anchor—such as an exchange rate or inflation target—to help guide price expectations. However, it is difficult for a commodity exporting country, such as Norway, to keep its exchange rate stable in the face of large terms of trade shocks. Moreover, Norway has been facing the potential for increased exchange rate volatility in the runup to the third phase of EMU, owing to the small size of its market in relation to the combined financial markets of the EMU participants, with whom it has close economic ties. These considerations

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[18] This section draws heavily on L. Svensson, "Exchange rate target or inflation target for Norway," in *Choosing a monetary policy target* ed. Christiansen and Qvigstad Oslo 1997.

suggest that Norway should consider either the adoption of a more formal link to the euro, or a shift to inflation targeting.

77. Adopting a fixed rate against the euro, in connection with formal arrangements that would provide for liquidity support from the ECB, would reduce the problem of speculative attacks. However, in order to receive adequate liquidity support from the ECB to help defend the krone/euro parity, it is likely that Norway would have to join the European Union, a policy which has little political support at present in Norway.

78. The adoption of an exchange rate target implies that interest rate policy is guided primarily by exchange market developments, rather than domestic economic conditions. In Norway this can lead to relatively frequent policy dilemmas, as terms-of-trade shocks affect Norway differently from most of its European trading partners and the Norwegian cyclical position is frequently out of line with the rest of Europe. While fiscal policy can, in principle, be used actively to resolve this dilemma, the experience has been that there are limits. Therefore, the possibility of shifting to an inflation target has received considerable public attention in Norway in recent years.

79. If a decision were taken to base monetary policy on an explicit inflation target, Norges Bank would have to continue monitoring the exchange rate closely because of the large weight of imported goods in the CPI basket in Norway. Moreover, adequate support from fiscal policy would have to be maintained so that policy-induced movements in interest rates would not be too sharp. Norges Bank is well placed to take on the added responsibilities of an inflation target because it already issues quarterly inflation reports and has a fairly well developed macroeconomic model of the economy which could be used for inflation forecasting. However, steps would need to be taken to increase the operational independence of Norges Bank, in order to buttress the credibility of the inflation target. The experience of the Swedish Riksbank—which has a similar institutional set-up—in establishing an inflation target indicates that the Norges Bank could also adopt an inflation target successfully within a fairly short time, provided that it received adequate support from fiscal policy and was given instrument independence which was operative.

References

R. Amano and S. Van Norden, (1995) "Terms of Trade and Real Exchange Rates: The Canadian Evidence", Journal of International Money and Finance Vol. 14, No. 1.

Bjørnland, H. (1997) "Estimating Core Inflation," Statistics Norway Research Department Working Paper, August.

C. Bean, (1998) "The New UK Monetary Arrangements: A View from the Literature"CEPR, London and H.M. Treasury.

S. Cecchetti, (1995) "Inflation Indicators and Inflation Policy" NBER Working Paper No. 5161

G. Debelle (1997), "Inflation Targeting in Practice", IMF Working Paper No. 97/35.

A. Dixit, (1989) "Hysteresis, Import Penetration, and Exchange Rate Pass-Through," Quarterly Journal of Economics 104.

D. Gruen and J. Wilkinson (1994) "Australia's Real Exchange Rate—Is It Explained by the Terms of Trade or by Real Interest Differentials?" The Economic Record Vol. 70, No. 209.

Haldane, A. (1997) "Some Issues in Inflation Targeting," Mimeo, Bank of England.

E. Hansen, (1997) "Exchange Rates, Non-Traded Goods, and the Terms of Trade: An Empirical Application for New Zealand," Oxford Bulletin of Economics and Statistics No. 59

International Monetary Fund, (1996) "The Rise and Fall of Inflation—Lessons from the Postwar Experience," World Economic Outlook, October 1996.

Lane, T. and S. Van der Heuvel,(1998) "The United Kingdom's Experience with Inflation Targeting," IMF Working Paper No. 98/87.

Lowe, P. "Monetary Policy and Inflation Targeting: Proceedings of a Conference," Reserve Bank of Australia 1997

Mishkin, F. (1998) "International Experiences with Different Monetary Policy Regimes," Sveriges Riksbank

K. Moum and T. Eika (1998) "Pengepolitikk som virkemiddel I dagens konjunktursituasjon," Økonomiske Analyser 2/98, Statistics Norway.

J. Qvigstad, "Norwegian Traditions and International Trends," in A. Christiansen and J. Qvigstad eds. *Choosing a Monetary Policy Target, Scandinavian University Press, Oslo* 1997

Samiei, H. 1998 "Determinants of the Real Exchange Rate in Norway: Does Policy Matter" in Norway-Selected Issues SM/98/39.

L. Svensson, "Exchange Rate Target or Inflation Target," in A. Christiansen and J. Qvigstad eds. *Choosing a Monetary Policy Target, Scandinavian University Press, Oslo* 1997

L. Svensson, (1998) "Inflation Targeting as a Monetary Policy Tulle," Mimeo, Sveriges Riksbank.

Syrstad, H (1998) "Mål og virkemidler I pengepolitikken-hva kan sentralbanken bestemme?" in Norsk jurudisk tidsskrift number 8.

Thomas, A. 1997 "The Monetary Transmission Mechanism in Sweden," in Sweden-Selected Issues SM/97/205.

IV. A Forecasting Model of Norway's Non-Oil Current Account Balance[19]

A. Introduction

80. This note discusses a model for projecting the medium-term trends of the non-oil current account balance in Norway. The forecast is based on the September 1998 WEO growth and inflation projections for Norway and its partner countries, and assumes a constant nominal effective exchange rate (in terms of the ECU/euro) at the average level of 105 for 1998 through 2002. The model results suggest that with the economy moving back to a more neutral point in the cycle and with global demand strengthening in the medium term, the non-oil current account balance will improve by more than 3 percentage points of GDP, with the deficit declining from 9.8 percent of GDP in 1998 to 6.5 percent of GDP in 2002. This level of the non-oil current account deficit is sustainable in the long run: given an estimated net present value of oil wealth of 170 percent of GDP and assuming a 4 percent real rate of return on the State Petroleum Fund, Norway can finance a non-oil current account deficit of about 7 percent of GDP indefinitely.[20]

81. The medium-term projection of the non-oil trade balance is based primarily on estimated equations for trade in non-oil goods and services. The uncertainty about the changes in the other components of the non-oil current account balance (investment and other factor income and net transfers) adds uncertainty to the medium-term current account projections. Owing to the lack of information on the determinants of these flows, as well as their small size and lack of historical volatility, the staff has relied upon the projections of the Norwegian Ministry of Finance for these items.

82. The note is organized in the following way: Section B describes the staff's model and discusses the estimation results; Section C summarizes the assumptions and compares the projections of the staff and of the authorities; and Section D presents the conclusions.

B. Determinants of Trade in Non-oil Goods and Services

83. The staff's model was designed to estimate the non-oil exports and imports of goods and services (hereafter referred to as exports and imports). The data base was extracted from

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[19] Prepared by Natalia Koliadina.

[20] At current levels of oil production, a sustained 10 percent decline in oil prices would reduce the overall current account surplus by 1 percentage point of GDP. For the longer run, official calculations of the net present value of oil wealth were adjusted downward by about 10 percent in response to the decline in oil prices that took place in the first eight months of 1998, because the authorities considered that much of the previous increase in oil prices and some of the subsequent decline were temporary, and also because some oil production and exports was postponed to future years.

the Norwegian annual national accounts for 1978–97, with the non-oil trade flows comprising primarily exports and imports of goods and services produced by the mainland economy.

84. Non-oil trade flows were calculated as the difference between total and oil-related trade flows; the latter were defined as including oil and natural gas exports, oil platforms and modules, trade in other goods and services directly related to oil activities, pipeline transportation services, and oil drilling. In line with the classification of the Ministry of Finance, refined petroleum products were included in non-oil exports, making the non-oil current account somewhat dependent on petroleum production.[21]

85. The staff's model comprises export and import price and volume equations. All variables are expressed in logarithms. The tabulation below summarizes the names of the variables:

Variables of the model:

erw	real effective exchange rate based on wages
er	nominal U.S. dollar-NKr exchange rate
gdp	Norway's real GDP
gdptp	real GDP of the trading partners
nmpi	non-oil import price index for Norway (in domestic currency)
nmr	non-oil real imports of goods and services
nxpi	non-oil export price index for Norway
nxr	non-oil real exports of goods and services
pdom	final consumption deflator
pgdp	GDP deflator
xdfe	export-weighted average foreign trade price [22]
xdfi	import-weighted average foreign trade price

86. Table 1 presents unit root tests for original variables in logarithms and for their changes. The null hypothesis of the unit root cannot be rejected for any of the original variables, but can be rejected at the 10 percent level for all the changes of the variables, with the exception of real effective exchange rates, import prices, foreign and domestic prices. The test on cointegration indicates the existence of a long-run relationship between the variables entering export and import price equations, and the import volume equation, which makes it possible to express these equations in the log-linear form. The equation for export volume is expressed in a similar form, although the cointegration test suggests no significant long-run relationship between the variables. The method of ordinary least squares (OLS) is used to estimate the model.

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[21] Exports of refined petroleum products constituted almost 2 percent of GDP in 1997, and were found to be highly correlated with oil and natural gas production.

[22] Average foreign trade prices are based on countries' 1987–89 composition of trade in manufactured goods and commodities, using world price indicators.

Table 1. Norway: Unit Root Tests [1]

Variable	Weighted-Symmetric τ Test	
er-er*	-2.39	[0.366]
Δer-Δer*	-2.83*	[0.135]
erw-erw*	-2.18	[0.518]
Δerw-Δerw*	-1.60	[0.858]
gdp-gdp*	-1.28	[0.941]
Δ gdp-Δ gdp*	-3.22*	[0.046]
gdptp-gdptp*	-1.25	[0.945]
Δgdptp -Δgdptp*	-2.96*	[0.094]
nmpi-nmpi*	0.32	[0.999]
Δnmpi- Δnmpi*	-2.64	[0.216]
nmr-nmr*	-2.08	[0.588]
Δnmr- Δnmr*	-2.86*	[0.124]
nxpi-nxpi*	-1.02	[0.972]
Δnxpi- Δnxpi*	-3.95*	[0.005]
nxr -nxr*	-3.17*	[0.053]
Δnxr - Δnxr*	-6.36*	[0.000]
pdom -pdom*	0.93	[0.999]
Δpdom - Δpdom*	-2.60	[0.236]
pgdp-pgdp*	0.33	[0.996]
Δpgdp- Δpgdp*	-2.82*	[0.138]
xdfe -xdfe*	-2.50	[0.292]
Δxdfe - Δxdfe*	-2.81*	[0.141]
xdfi - xdfi*	-2.25	[0.464]
Δxdfi - Δxdfi*	-2.63	[0.219]

[1] See text for data definitions. An asterisk denoted a test statistic that is significant at the 10 percent level. The Weighted Symmetric τ test involves a weighted double-length regression in which the dependent variable is regressed on leads and lags of its own changes. P-values are shown in brackets.

87. The estimation results suggest that **export prices** are dependent on their own lagged values, domestic prices, and on foreign prices of exported goods denominated in domestic currency;[23] *t*-statistics are reported in parentheses (Figure 8, Panel 1):

Equation 1:

$$nxpi = \underset{(0.035)}{0.030} + \underset{(3.858)}{0.674}*nxpi_{t-1} + \underset{(2.829)}{1.437}*pdom_t - \underset{(-2.789)}{1.051}*pdom_{t-1} + \underset{(3.958)}{1.422}*(xdfe_t - er_t) - \underset{(-3.953)}{1.481}*(xdfe_{t-1} - er_{t-1})$$

$R^2 = 0.982$ $DW = 1.66$

All explanatory variables are found to be significant. The equation suggests that in the long run, Norwegian exporters are price setters. In the short run, however, the response of export prices to changes in domestic costs and foreign prices is almost equally strong.

88. **Import prices** are also found to be dependent on their own lagged values and on foreign prices, denominated in Norwegian kroner (Figure 8, Panel 2):[24]

Equation 2:

$$nmpi = \underset{(0.489)}{0.175} + \underset{(6.034)}{0.679}*nmpi_{t-1} + \underset{(1.476)}{0.321}*(xdfi_t - er_t) - \underset{(-0.603)}{0.119}*(xdfi_{t-1} - er_{t-1})$$

$R^2 = 0.991$ $DW = 2.22$

The equation suggests that Norwegian import prices are surprisingly insensitive to changes in foreign prices. The long-run effect of changes in foreign prices would not fully pass through to Norwegian import prices.

89. The estimation of Norwegian **non-oil exports** is based on a standard trade equation of the form (Figure 9, Panel 1):

Equation 3:

$$nxr = \underset{(3.226)}{7.444} + \underset{(1.565)}{0.414}*nxr_{t-1} - \underset{(-1.560)}{0.307}*nxr_{t-2} - \underset{(-1.463)}{0.416}*erw_t - \underset{(-1.109)}{0.361}*erw_{t-1} + \underset{(2.125)}{1.322}*gdptp_t + \underset{(0.241)}{0.193}*gdptp_{t-1}$$

$R^2 = 0.989$ $DW = 2.06$

The estimated equation indicates a price elasticity of Norwegian non-oil exports that is below unity, but has greater sensitivity to contemporaneous partners' income.

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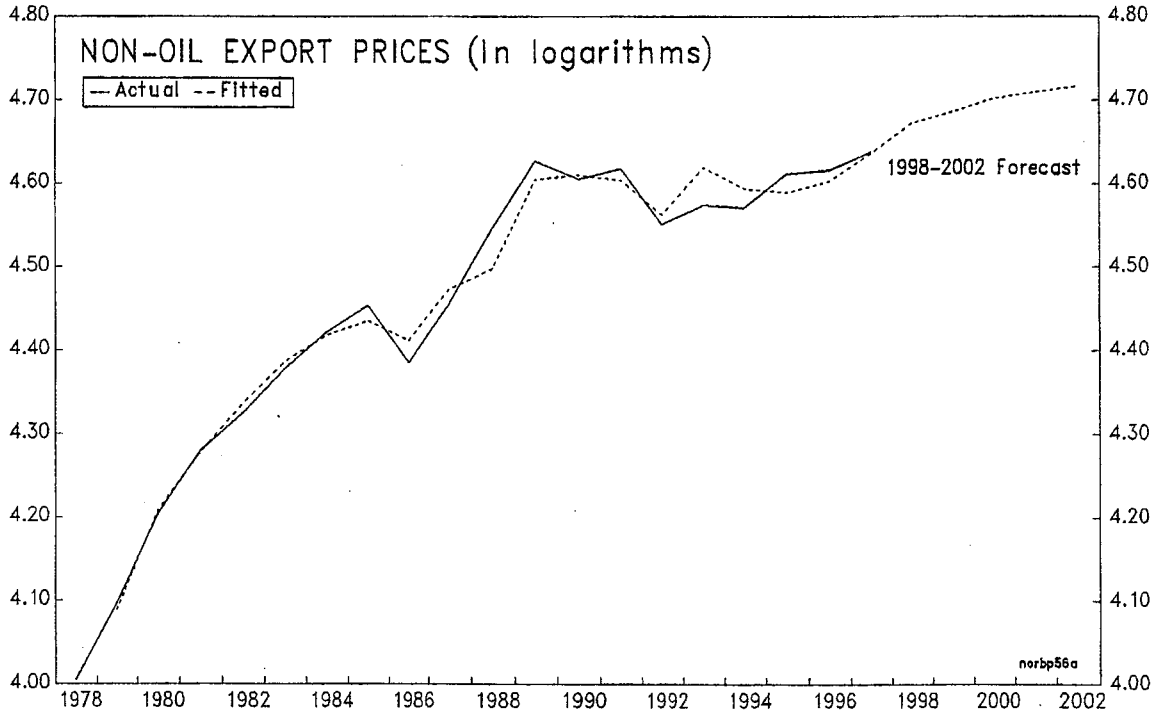
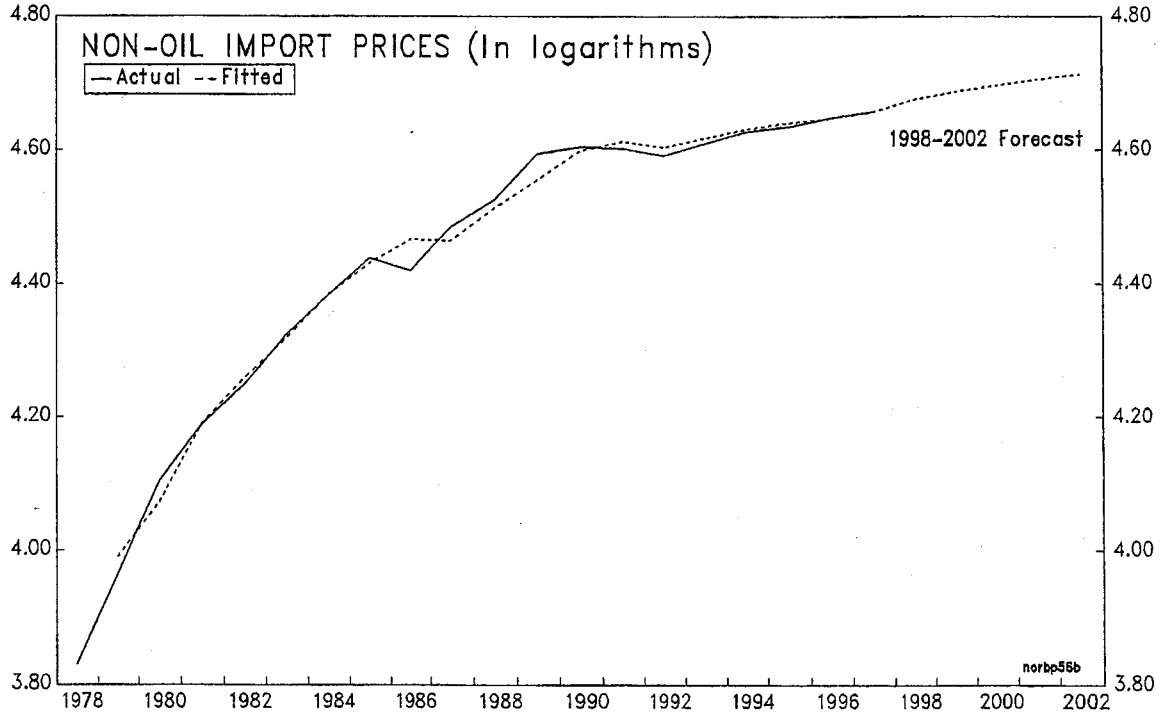
[23] The result of the *F*-test shows that the null hypothesis of the same coefficient on foreign prices and dollar-kroner exchange rates cannot be rejected.

[24] The null hypothesis of foreign prices and the exchange rate having the same coefficient cannot be rejected at the 5 percent level.

FIGURE 8
NORWAY

NON-OIL EXPORTS AND IMPORTS PRICES

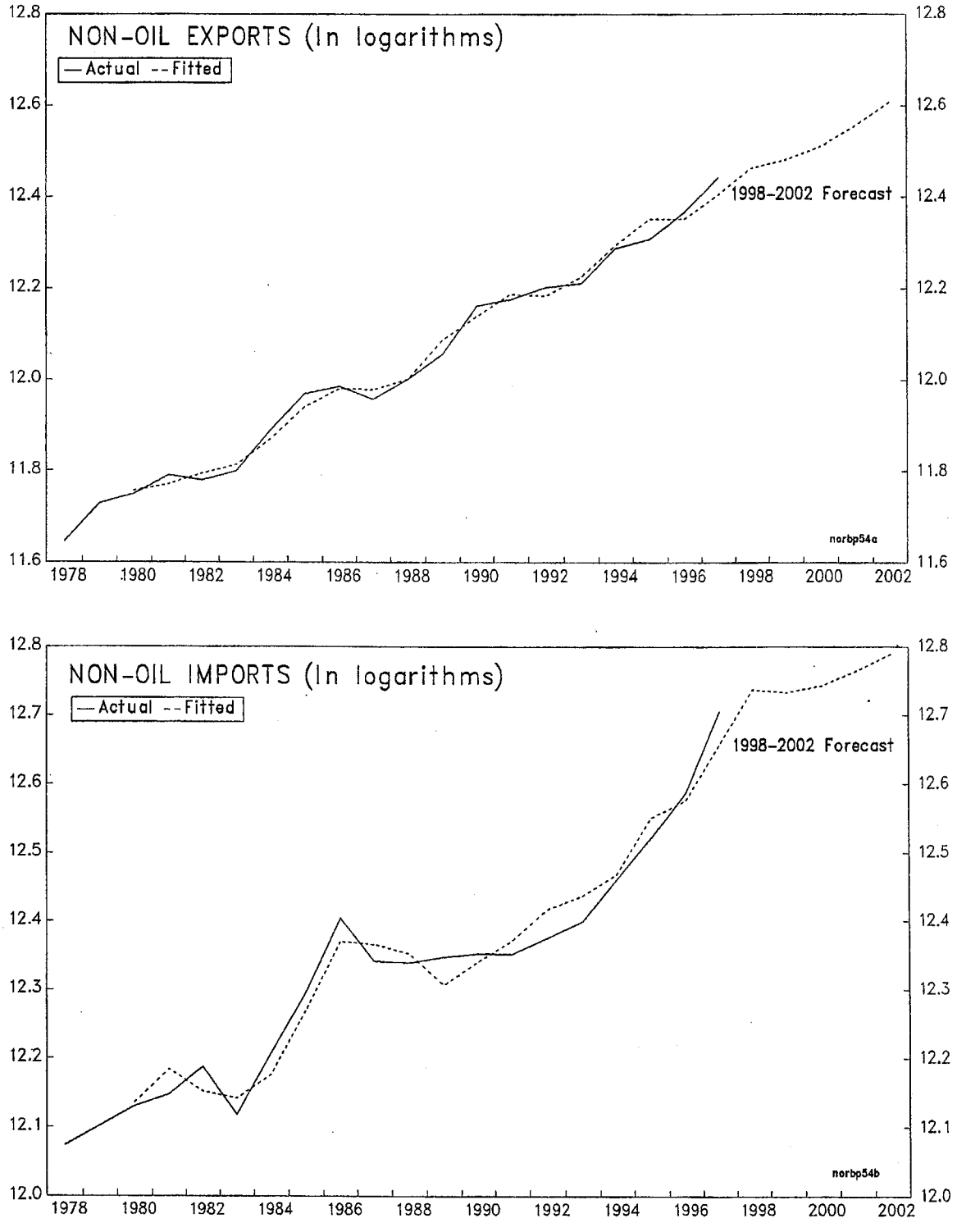




Sources: Staff calculations.

FIGURE 9
NORWAY

NON-OIL EXPORTS AND IMPORTS



Sources: Staff calculations.

90. The equation for **non-oil imports** has the following specification (Figure 9, Panel 2):

Equation 4:

$$nmr = \underset{(2.281)}{5.481} + \underset{(0.973)}{0.302*nmr_{t-1}} + \underset{(3.086)}{1.857*gdp_{t-1}} - \underset{(-1.249)}{0.949*gdp_{t-2}} - \underset{(-0.500)}{0.324*nmpi_t} +$$

$$\underset{(-0.449)}{0.313*nmpi_t} - \underset{(-0469)}{0.379*pgdp_{t-1}} + \underset{(0.237)}{0.165*pgdp_{t-2}}$$

$R^2 = 0.964$ $DW = 1.69$

The estimated equation suggests that Norwegian non-oil import volumes have a very weak import price elasticity but respond strongly to domestic output. This is in line with the authorities' claim that imports constitute a significant share of inputs for production of certain goods, thus making imports fairly insensitive to changes in their prices. In the long run import volumes appear to be driven by movements in domestic output.

C. Medium-Term Forecasting of the Non-oil Current Account

91. The staff's forecast is based on the medium-term WEO assumptions, outlined in the tabulation below:

Underlying Assumptions
(Change in percent, unless otherwise specified)

	1998	1999	2000	2001	2002
Real GDP	2.2	2.2	2.2	2.2	2.2
GDP deflator	0.0	3.5	3.5	3.5	3.5
REER based on wages (index)[25]	95.0	97.8	98.8	98.8	98.8
Nominal ECU/NKr exchange rate index [26]	105	105	105	105	105
Nominal U.S. dollar/NKr exchange rate (index)[27]	0.132	0.132	0.132	0.132	0.132
Partners' real GDP	2.8	2.6	2.9	2.9	2.7
Export-price deflator (U.S. dollars)	-4.0	1.1	1.3	0.5	0.4
Import-price deflator (U.S. dollars)	-3.2	1.2	1.1	1.0	1.1

[25] The projections of the real effective exchange rate based on relative wages assume a constant nominal exchange rate on an inverted ECU index, and slightly faster wage growth in Norway than in trading partners over the next two years.

[26] Based on an inverted ECU index.

[27] The dollar-NKr nominal exchange rate is fixed for 1999–2002 to avoid the effects of its changes on the Norway's current account balance, since trade with the United States is not significant—less than 7 percent on both export and import sides.

92. The forecasting is complicated by the two interrelated exogenous factors—the abrupt weakening of international demand for Norwegian exports, and the fall in oil prices. The projections of the Ministry of Finance suggest that the non-oil current account deficit would widen in 1998 to 9.3 percent of GDP—a 1.4 percentage point of GDP deterioration from 1997. The weakening of global demand and of international export prices is expected to have a stronger effect on exports than an estimated 7 percent nominal depreciation of the krone against the U.S. dollar in 1998. Cyclical factors—the economy has been operating above potential for the past two years—also have a strong impact on import growth.

93. While the staff's model predicted a deterioration in the non-oil current account in 1998, it did not capture the full impact of the shocks on the trade balance. Accordingly, the forecast for 1998 was replaced with the authorities' projections of the non-oil current account balance, and the forecasting period set to start in 1999. The tabulation below summarizes the forecast:

Forecast of the Medium-Term Non-oil Current Account
(In percent of GDP)

	1997	1998	1999	2000	2001	2002
Exports	25.4	24.6	24.1	23.9	23.8	23.9
Imports	-32.4	-33.1	-31.5	-30.4	-29.6	-28.9
Investment and other factor income and transfers[28]	-0.9	-1.3	-1.4	-1.4	-1.5	-1.4
Current account balance	-7.9	-9.8	-8.8	-8.0	-7.3	-6.5
Memorandum item:						
Ministry of Finance projection of the current account,	-7.9	-9.3	-8.4	-7.0	-6.3	-4.9
Of which						
Trade balance	-7.0	-8.5	- 7.5	-6.3	-5.8	-4.7
Investment and other factor income and transfers	-0.9	-0.8	-0.9	-0.7	-0.5	-0.2

94. As suggested by the tabulation, the non-oil current account deficit is projected to narrow by 3.3 percentage points of GDP in 1998–2002, which is a smaller improvement than projected by the Ministry. The discrepancy between these two projections is due to at least two factors:

- The Ministry included the projected returns on the State Petroleum Fund in non-oil investment income, reducing the non-oil current account deficit, whereas the staff netted out these returns in order to be able to compare the results transparently to the income stream from Norway's oil wealth; and

[28] This component includes non-oil investment income net of returns on the State Petroleum Fund, current transfers and net wages.

- The authorities' forecast incorporates some factors that are not captured by the staff's model, such as capacity constraints faced by industries dependent on hydroelectric power, that are expected to depress exports in 1999–2002.

- Adjusting for the difference in treatment of SPF income, the Ministry and staff projections are roughly the same for 2001–2002.

95. The improvement of the non-oil current account in the medium term is expected to be brought about primarily by the slowdown of the domestic economy, which would have a dampening effect on imports, and by the assumed recovery in global demand, which would positively affect exports. A loss of competitiveness is projected to depress export performance in 1999–2000, but competitiveness would stabilize thereafter. This forecast, however, is subject to a large margin of error owing to the uncertainty of international economic developments, the evolution of oil prices, and the ability of the government to moderate the excess demand pressures in the domestic economy. The tabulation below shows the changes in non-oil exports and imports over time:

Evolution of the Non-Oil Current Account

(Change in percent)

	1998	1999	2000	2001	2002
Nominal non-oil exports	0.1	3.3	4.5	5.5	6.0
Nominal imports	5.1	0.7	2.0	3.0	3.3
Changes in prices:					
Exports	-2.0	1.4	1.6	0.8	0.7
Imports	1.8	1.1	1.0	0.9	0.8
Changes in volume:					
Exports	2.1	1.9	2.9	4.7	5.3
Imports	3.2	-0.4	1.0	2.1	2.5

D. Conclusion

96. The staff's medium-term current account forecast shows a reduction in the non-oil current account deficit from 9.8 percent of GDP in 1998 to 6.5 percent of GDP in 2002. The staff's projections for 2001–2002 suggest that Norway would achieve a sustainable non-oil current account balance, assessed in relation to the permanent income stream on its oil wealth.

V. Recent Developments in the Norwegian Financial System[29]

A. Introduction and Summary

97. In conjunction with the 1997 Article IV consultation, the Fund staff prepared an overview of the Norwegian banking crisis of 1988–93, the subsequent recovery, and challenges facing banks and their supervisors at the end of 1997.[30] This note provides an update on the health of the banking system, structural changes in the financial system, and regulatory initiatives taken during the past year.

98. Last year's report noted that timely intervention and effective coordination among the responsible public agencies during and after the last banking crisis, in ways that minimized moral hazard, helped to contain the costs to society as a whole and enabled Norwegian banks to resume playing an active role in financial intermediation early in the subsequent economic recovery. Nevertheless, recent trends in lending practices, profit margins and capitalization had underscored the importance of effective surveillance by the supervisory authorities. In addition, the report noted that it would be important to ensure that mechanisms were in place to encourage further efficiency gains, such as the elimination of the government's remaining ownership stake in Norway's largest commercial banks. Finally, macroeconomic policy had an essential role to play in protecting the stability of the banking system, by helping to avoid an unduly rapid expansion of credit. Developments during 1998 have not resulted in any significant modification of these conclusions. The structure of the banking system has not changed significantly. Meanwhile, squeeze on banks' profit margins and capitalization has continued (albeit from a reasonably comfortable base) and, given the recent downturn in oil prices and maturation of the recovery, it seems clear that the banks will need to restore their profit margins in order to make room for the inevitable increase in loan loss provisions. Further consolidation in the Norwegian banking sector is likely to be a part of this process.

B. Overview of the Norwegian Financial System

99. The Norwegian financial system is relatively small and competitive. At end-1997 the Norwegian banking system comprised Norges Bank (the central bank), 14 commercial banks (one foreign-owned), 133 savings banks, the postal savings bank, and 6 Norwegian branches of foreign banks; there were also 12 overseas branches of Norwegian banks. Other financial institutions included 37 finance companies, 8 mortgage companies, 2 loan intermediaries, and 12 Norwegian branches of foreign finance and mortgage companies.

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[29] Prepared by Scott Brown. This note reflects information provided by Norges Bank (the Norwegian central bank); Kredittilsynet (the banking, insurance, and securities regulatory commission); the Ministry of Finance and Customs; the Bankers' Association; and the Savings Bank Association.

[30] "The Norwegian Banking System—From Crisis to Healthy Competition," February 1998.

100. The two largest commercial banks (Den Norske Bank and Christiania Bank (Kreditkassen)) became almost entirely government-owned during the response to the banking crisis, and the government's ownership stake remains slightly above 50 percent. The fourth largest bank is the publicly-owned Postal Savings Bank. These three institutions accounted for about 45 percent of the total assets of Norwegian commercial and savings banks at end-June 1998.

101. In recent years the Norwegian banking and insurance markets have become dominated by integrated financial groups and conglomerates, with about two-thirds of domestic financial services accounted for by the eight largest conglomerates at end-1997. Kredittilsynet (Norway's banking, insurance, and securities commission), was established in 1986 through the merger of pre-existing institutions, as a comprehensive supervisory authority for banks, insurance companies, securities firms, real estate agents, accounting and auditing companies. In 1988 its jurisdiction was extended to other non-bank financial institutions and financial groups. Kredittilsynet cooperates closely with Norges Bank and the Ministry of Finance.

C. Financial Developments During 1998

102. Developments in the Norwegian banking sector during the first half of 1998 were mainly driven by the continued cyclical upturn in the domestic economy. Total domestic credit continued to expand at an annual rate of about 10 percent, about the same as in 1997 and well above the growth rate of nominal GDP (see tabulation below). Bank credit to the private sector rose at annual rates in excess of 15 percent in 1997 and the first half of 1998, reflecting a very rapid expansion of bank credit to enterprises and continued strong demand for housing loans. Owing to a much smaller increase in the base of customer deposits, the increase in bank credit has been funded mainly from short-term external loans and deposits. Data for subsequent months suggest that there has been a slowing of credit growth, due to expectations of a slowing of economic activity, the decline in oil prices, and the near-doubling of short-term interest rates since end-June 1998.[31]

Norway: Growth of Domestic Credit
(percent change over 12 months)

	Dec. 1995	Dec. 1996	Dec. 1997	June 1998	Oct 1998
Total credit	4.9	6.2	10.1	10.1	8.8
Bank credit to the private sector	9.6	11.9	16.8	15.5	12.8

Source: Norges Bank

[31] Oil prices declined from US$19 per barrel in 1997 to US$11 per barrel at end-November 1998, with much of the decline occurring by March 1998. In response to sharp downward pressure on the exchange rate of the Norwegian krone, Norges Bank increased short-term interest rates in several steps by a cumulative 450 basis points in July-August 1998.

103. In parallel with the strong increase in lending, Norwegian banks have experienced a further decline in profit margins and capital/asset ratios during 1997–98 (Tables 2 and 3). The decline in profits has been attributed mainly to pressures on lending spreads in response to increased domestic and foreign competition. Profit margins remained broadly in line with historical experience, while capital/asset ratios were in excess of the prescribed minima. However, the supervisory authorities expressed concern that the recent high rates of credit expansion had set the stage for an increase in loan losses in the coming years. As Norwegian banks would continue to face strong competition from abroad, while economic growth was expected to moderate, there would be further pressure on lending spreads. Under these circumstances, the natural tendency would be for capital adequacy ratios to decline. This was not, however, expected to pose a significant danger of another banking crisis, as Norwegian banks were much better capitalized than they had been at the onset of the 1988 crisis and both households and enterprises had significantly stronger balance sheets and debt servicing capacity. Sensitivity analyses suggested that this would continue to be the case even if the current high level of domestic interest rates were to persist for some time. In view of its rapid recovery from banking crisis and more adequate level of capitalization since 1993, in recent years the Norwegian banking sector has been rated favorably by agencies such as Moody's and Standard & Poor. Ratings services have not downgraded the major Norwegian banks in the face of weaker profit performance in the latest quarters.

104. Norwegian banks have little direct exposure to emerging markets. Total foreign lending by Norwegian banks amounted to Nkr 40 billion at end-1997 (equivalent to about US$5.5 billion), compared with total bank assets of Nkr 983 billion. However, most of this lending was to industrial countries in Europe and North America. According to BIS data, Norwegian bank lending to countries in Eastern and Central Europe amounted to only US$157 million at end-1997, while lending to other developing countries (mainly in Asia) totaled only US$319 million.

105. The banks also have relatively little exposure to equity markets. As of mid-1998, the major Norwegian commercial banks held only 0.6 percent of their assets in shares and 5.3 percent in bonds; the comparable figures for the largest savings banks were 0.8 percent and 3.2 percent. However, as noted above, the Norwegian financial sector is dominated by financial groups (conglomerates) which typically involve both banking and insurance companies. At mid-1998 life insurance companies held 21.9 percent of their assets in shares and 36.1 percent in bonds, while the comparable figures for the five largest non-life insurance companies were 14.5 percent and 27.7 percent. Not surprisingly, insurance company profits were sharply reduced in the first half of 1998. Between June 30 and September 30, 1998, the Oslo total share index fell by a further 31 percent. In an analysis prepared before financial results for the third quarter were available, Kredittilsynet studied the likely consequences of the downturn in stock prices and concluded that this would have erased just over half of the

reserves of life insurance companies.[32] There has also been a smaller, but significant, depletion of reserves for non-life insurance companies. However, solvency capital is expected to remain well above the margins required by EU directives.

106. Norwegian commercial and savings banks make considerable use of external financing to fund their lending operations, resulting in a net external liability position equivalent to about 13 percent of their total assets (or 12 percent of GDP) as of June 1998. According to the authorities there are no potential problems with currency mismatches. However, the short-term nature of most of this external financing combined with the generally greater volatility of international capital flows implies the potential for a liquidity squeeze in response to developments in overseas markets, a factor which the authorities are monitoring closely.

D. Supervisory Initiatives and Structural Changes

107. In the wake of the banking crisis, staff and other resources of Kredittilsynet were increased significantly, *inter alia* to permit more frequent on-site examinations of banks and to strengthen its supervision of insurance companies and conglomerates.[33] Kredittilsynet also tightened reporting and disclosure rules and developed a system of indicators for early warning of potential liquidity and solvency problems. A major focus of on-site examinations is the adequacy of banks' internal systems for risk assessment and management. In 1996 the CAD-directive was implemented under which the adequacy of banks' capital is assessed in relation to the risk of loss in their individual portfolios.

108. Building on earlier practices, in 1993 additional guidelines were established for collaboration between Kredittilsynet and Norges Bank in the exchange of information, contacts with financial institutions, development of regulations, economic and financial analysis, and statistical reporting (in cooperation with Statistics Norway). Kredittilsynet and Norges Bank initiated a program of macroeconomic surveillance, intended to supplement supervision of individual institutions with an assessment of threats to the stability of the sector as a whole. Under this program, Kredittilsynet and Norges Bank each report twice a year on economic and financial conditions in the sector, new developments and trends, and scenarios of the future financial strength of supervised institutions.

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[32] Life insurance company reserves (including unrealized gains on securities, supplementary provisions, Tier I capital in excess of 8 percent, and contingency reserves above statutory minima) totaled about Nkr 31 billion at end-June 1998. The reduction in unrealized gains was estimated at about Nkr 15–16 billion.

[33] On-site examinations are now held annually for large banks, and on a 5–6 year cycle for smaller banks. Kredittilsynet also uses indicators of potential problems, such as a high rate of growth of assets, to trigger more frequent examinations.

109. At the request of the Ministry of Finance in late 1997, Kredittilsynet investigated whether an increase in the Tier 1 capital requirement for banks might be warranted in light of recent strong growth in domestic credit and concerns about future capital adequacy. At that time, Norwegian banks were subject to a requirement that total capital be not less than 8 percent of risk-weighted assets, with a minimum of 4 percent of risk-weighted assets to be held in the form of Tier 1 capital.[34] In its conclusions, conveyed to the Ministry in February 1998, Kredittilsynet noted that control of credit growth is primarily the responsibility of macro policies. It further indicated that capital adequacy requirements should be predictable, stable over time, and in line with those of other member countries of the European Economic Area (the European Union plus Iceland, Liechstenstein, and Norway). While it considered that an increase in the minimum Tier 1 capital requirement from 4 percent to 6 percent could be warranted in light of the situation in financial institutions, Kredittilsynet declined to recommend such a change after taking into account the negative effect on the competitive position of domestic financial institutions and on the credit market. However, it did propose two other changes in prudential regulations: (a) an increase, from 50 percent to 100 percent, in the risk weighting attached to mortgage loans for 60–80 percent of prudent valuation of the underlying property; and (b) a tightening of the conditions for use of subordinated loan capital, to encourage greater use of own funds, under which new subordinated loan capital with a fixed maturity would not normally be approved if Tier 1 capital was below 7 percent of risk-weighted assets.

110. The government decided in May 1998 to adopt these proposals. In August Kredittilsynet issued guidelines specifying that Norwegian banks would not be allowed to include new subordinated debt in their capital base if the Tier 1 capital ratio was below 7 percent. However, as an exception, Kredittilsynet could approve such capital for an institution that had a Tier 1 capital ratio between 6½ and 7 percent, provided that the institution had a low-risk loan portfolio or a particularly good risk management system. These guidelines do not apply to subordinated loans that replace existing subordinated loans in the capital base.

111. While the competitive environment facing Norwegian banks suggests that there will be a trend toward consolidation, there are legal impediments to bank mergers and acquisitions. These include provisions that no investor may acquire more than a 10 percent ownership stake in a financial institution (waived temporarily for the government's takeover of major commercial banks during the banking crisis); that purchase of a bank requires approval by at least 90 percent of its shareholders; and that a one-third vote of shareholders is sufficient to block a change in corporate statutes (e.g., merger, change in share capital, or relocation of the corporate headquarters). A commission appointed by the government to revise the banking

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[34]Under the Basle Accord of 1988, Tier 1 capital consists of issued and paid-up share capital, non-cumulative preferred stock, and disclosed reserves from pretax earnings. The remainder (Tier 2 capital) includes a range of other items, such as undisclosed reserves, general loan loss reserves, and subordinated debt.

law has suggested relaxing the 10 percent ownership limit in the case of acquisitions by foreign banks, in order to facilitate strategic alliances within the region. This proposal is currently under consideration at the Ministry of Finance. Meanwhile, however, there has been relatively little merger activity in Norway in recent years, in contrast with other Scandinavian countries, as a number of proposals have been blocked by shareholders (in some cases, by the government). A bid from Den Danske Bank for Fokus Bank has got acceptance from 90 percent of the shareholders. They are now expected to apply for approval from the authorities.

112. As noted above, the government is majority owner of Norway's two largest commercial banks. In late 1997 the government announced its intention to reduce its ownership stake in these banks to 33 percent. This intention was not carried out during 1998 as a result of changes in the management of the affected institutions and a sharp decline in the market value of the government's shareholding, and has been reasserted as a policy intention for the coming year. More broadly, the government has indicated that it intends to maintain a controlling interest in these banks indefinitely in order to secure a substantial element of national ownership of the Norwegian banking sector.

113. Norges Bank has developed a real-time gross settlements system for large-value transactions (described in last year's report), which went into operation in June 1998. With the imminent completion of the third stage of European Monetary Union, the euro is expected to become an increasingly important currency for trade and financial transactions involving Norwegian firms, and Norwegian banks would be at a significant disadvantage if they were unable to offer competitively-priced euro services. The Norwegian authorities have thus engaged in discussions with the European Central Bank on possible means for providing access for Norwegian banks to the TARGET system for interbank settlements in euros. Norges Bank has indicated its willingness to act as an intermediary in such settlements; in addition, some large Norwegian banks will be able to access the TARGET system directly through their offices in EMU member countries.

Table 2. Norway: Bank Profitability, 1980–1998 1/

(In percent of average total assets)

	Commercial Banks			Savings Banks 2/		
	Net interest income	Loan losses	After-tax profits	Net interest income	Loan losses	After-tax profits
1980	3.17	0.13	0.75	3.92	0.04	1.02
1981	3.06	0.07	0.87	4.52	0.06	1.54
1982	3.03	0.17	0.70	4.60	0.07	2.11
1983	3.39	0.20	1.03	4.64	0.13	1.19
1984	3.10	0.24	1.03	4.44	0.15	1.09
1985	2.77	0.35	0.79	3.87	0.18	0.79
1986	2.78	0.50	0.83	3.70	0.27	0.88
1987	2.76	0.99	-0.35	3.49	0.81	0.23
1988	2.78	1.45	-0.24	3.58	1.54	-0.44
1989	2.98	1.60	0.04	4.14	2.24	-0.30
1990	2.55	1.96	-1.17	3.85	2.05	-0.77
1991	2.45	4.28	-4.29	3.79	2.11	-1.21
1992	2.78	2.25	-1.25	4.34	1.83	0.04
1993	3.07	1.40	0.58	4.73	1.17	2.01
1994	2.85	0.14	1.19	4.10	0.36	1.31
1995	2.41	-0.32	1.36	3.64	0.14	1.31
1996	2.23	-0.17	1.18	3.24	0.07	1.05
1997	1.94	-0.07	0.93	2.89	0.07	0.94
1998 (9 mos)	1.94	0.24	0.59	2.65	0.08	0.81

Source: Norges Bank.

1/ Due to changes in definitions, data for 1980–86 are not fully comparable with those for later years.
2/ Data for the 24 largest savings banks until 1992, and the 30 largest savings banks thereafter.

Table 3. Norway: Bank Capitalization, 1981–1998

(In percent of applicable asset base)

	Commercial Banks 1/		Savings Banks 2/	
	Pre-1991 standard	Post-1991 standard	Pre-1991 standard	Post-1991 standard
Average, 1981-85	7.0	...	7.0	...
Average, 1986-90	8.1	...	5.7	...
1991	10.8	7.1	7.0	8.1
1992	9.0	8.6	8.0	11.0
1993	12.0	12.0	10.8	14.4
1994	...	12.4	...	14.9
1995	...	11.9	...	14.2
1996	...	11.5	...	13.9
1997	...	10.8	...	13.3
1998 (Jan-Sept)	...	10.4	...	12.4

Sources: Norges Bank and OECD.

1/ Commercial bank data are for parent banks.
2/ Data for the 24 largest savings banks until 1992, and the 30 largest savings banks thereafter.

Table A1. Norway: Demand and Supply

	1996 In billions of Nkr	1992	1993	1994	1995	1996	1997
		(Volume changes in percent)					
Private consumption	486.7	2.2	2.2	4.0	3.4	4.7	3.4
Public consumption	206.9	5.3	2.2	1.4	0.3	3.2	3.0
Gross fixed investment	216.5	-3.1	4.3	4.5	3.4	9.6	12.6
Stock changes 1/	22.2	-0.0	0.5	0.6	1.4	-0.6	0.2
Total domestic demand	932.3	1.7	3.1	4.0	4.2	4.6	5.5
Exports of goods and services	414.3	5.2	3.2	8.7	4.3	9.8	5.8
Oil and gas	156.7	11.3	5.9	11.9	9.2	15.6	2.3
Other	257.6	2.5	1.8	7.2	1.7	6.9	7.9
Imports of goods and services	326.5	0.7	4.4	4.9	5.6	8.3	12.3
Gross domestic product	1,020.1	3.3	2.7	5.5	3.8	5.5	3.4
Mainland GDP 2/	834.8	2.2	2.8	4.1	2.9	4.1	3.7

Source: Statistics Norway.

1/ Changes in percent of previous year's GDP.
2/ Excludes items related to petroleum exploitation and ocean shipping.

Table A2. Norway: Final Consumption Expenditure of Households

	1996 In billions of Nkr	1992	1993	1994	1995	1996	1997
		(Volume changes in percent)					
Total consumption	462.6	2.2	2.3	4.0	3.6	4.9	3.6
Food, beverages and tobacco	94.8	0.5	2.0	3.0	1.5	1.9	0.9
Clothing and footwear	27.8	-0.7	1.6	1.7	0.8	6.4	4.7
Housing, light and fuels	104.2	0.5	1.3	1.4	1.2	1.4	0.9
Furniture and household appliances	29.4	5.8	1.0	9.2	5.0	3.3	7.2
Health services	12.1	-1.9	-1.0	2.1	2.5	4.2	6.3
Transportation and communication services	79.1	4.2	2.6	8.7	3.7	14.5	3.1
Education	2.1	-4.8	-9.7	-3.0	2.3	-0.2	5.2
Leisure, entertainment, culture	43.7	6.1	1.8	6.7	7.2	5.0	6.1
Hotels and restaurants	26.8	6.6	4.6	6.7	7.8	4.3	5.6
Other domestic goods and services	38.5	0.6	9.7	2.6	6.9	3.1	5.4
Expenditures by Norwegians abroad	19.5	11.3	2.0	8.5	0.7	4.7	10.0
Expenditures by foreigners in Norway	-15.2	-7.6	-6.7	-13.4	6.9	-0.1	-0.9
Household disposable income	517.8	4.0	3.2	3.0	2.4	4.5	4.0
		(In percent of disposable income)					
Household saving	31.1	5.9	6.8	5.9	5.7	6.0	6.5

Source: Statistics Norway.

Table A3. Norway: Household Income and Saving

	1993 In billions of Nkr	1994	1995	1996	1997
		(Volume changes in percent) 1/			
Gross income	567.9	3.2	3.5	5.4	4.6
Wages	331.3	3.6	3.4	5.9	5.4
Profits	88.3	0.6	0.5	1.9	0.5
Interest earnings	-16.9	27.5	36.2	19.7	17.2
Income transfers from government	139.5	0.5	1.0	4.1	1.4
Other income	25.7	1.1	8.8	9.0	16.9
Direct taxes	128.0	5.8	4.7	6.9	6.1
Household disposable income	441.9	2.9	3.2	5.0	4.0
Of which:					
Correction for saving in pension fund	2.0	112.5	13.6	12.4	-4.1
Private consumption	411.6	4.0	3.4	4.7	3.4
Gross saving	30.3	-11.5	-0.1	10.8	13.1
		(In percent of disposable income)			
Saving rate	6.8	5.9	5.7	6.0	6.5

Source: Statistics Norway; and Ministry of Finance.

1/ Deflated by the private consumption deflator.

Table A4. Norway: Gross Fixed Investment

	1996 In billions of Nkr	1992	1993	1994	1995	1996	1997
		(Volume changes in percent)					
Total investment	216.5	-3.1	4.3	4.5	3.4	9.6	12.6
Private investment	184.8	-4.7	7.6	5.4	3.3	10.8	12.7
Housing	26.9	-10.5	-3.7	24.6	9.1	-1.2	9.0
Agriculture, forestry and fishing	7.1	3.0	-1.3	12.2	18.7	-2.7	2.9
Petroleum exploitation	44.3	12.6	10.8	-13.7	-9.9	2.3	13.4
Manufacturing and mining	17.4	-1.4	-22.7	12.8	34.8	9.4	6.4
Electricity generation	4.8	-9.7	0.7	-11.6	6.1	-6.7	-2.3
Construction	1.0	48.2	-26.6	7.9	23.3	3.4	13.8
Trade and commerce	23.2	0.2	7.7	20.1	13.4	13.2	7.2
Transportation	31.5	299.6	45.7	15.7	-10.9	48.0	28.1
Financial services	5.6	-20.7	-11.1	62.6	30.4	21.2	10.6
Other	18.6	-16.0	0.3	34.5	21.1	76.1	15.7
Public investment	31.7	4.4	-9.6	-0.1	3.5	3.7	12.1
Central government	14.9	7.4	-15.9	-4.6	0.6	4.4	-0.3
Local government	16.8	1.0	-2.3	4.4	6.2	3.2	23.1
Memorandum item:							
Mainland investment 1/	160.0	-2.2	-3.1	13.5	12.3	11.0	9.7

Source: Statistics Norway.

1/ Excludes items related to petroleum exploitation and ocean shipping.

Table A5. Norway: Real GDP by Sector

	1996 In billions of Nkr	1992	1993	1994	1995	1996	1997
		(Volume changes in percent)					
Total economy	1,020.1	3.3	2.7	5.5	3.8	5.5	3.4
Business sector	862.9	3.2	3.0	6.2	4.4	5.8	3.6
Agriculture, forestry and fishing	22.2	-6.4	15.1	0.6	8.8	2.5	-0.7
Petroleum exploitation	154.4	11.0	3.8	14.3	9.1	14.4	1.1
Manufacturing and mining	115.4	1.8	2.3	4.3	2.1	2.3	3.0
Electricity generation	21.0	5.7	2.3	-4.7	9.4	-14.9	6.6
Construction	35.8	0.3	-7.2	4.5	3.7	5.6	8.5
Trade and commerce	103.4	1.4	-1.3	10.5	1.7	6.5	4.9
Transportation	74.4	-0.6	4.9	6.0	9.2	8.6	5.7
Housing	64.8	1.1	1.1	-0.2	1.5	1.0	1.0
Financial services	37.5	-2.1	-2.5	-6.2	-2.3	-3.0	-2.3
Other	311.8	4.6	5.4	7.0	5.7	7.5	5.0
Public sector	157.9	3.8	1.5	1.7	0.7	3.7	2.5
Central government	46.7	4.3	0.0	0.8	-0.1	2.8	1.9
Local government	111.2	3.6	2.2	2.2	1.0	4.1	2.7
Memorandum item:							
Mainland economy 1/	834.8	2.2	2.8	4.1	2.9	4.1	3.7

Source: Statistics Norway.

1/ Excludes items related to petroleum exploitation and ocean shipping.

Table A6. Norway: Indicators of Petroleum Activities

	1991	1992	1993	1994	1995	1996	1997
				(In billions of kroner)			
Export value	96.7	97.2	104.1	106.4	113.2	156.7	163.7
Accrued taxes and royalties	28.6	27.8	26.4	28.4	29.3	42.4	38.5
Paid taxes and royalties	32.1	24.7	26.6	24.5	27.6	33.1	44.9
Net cash flow	39.5	28.6	2.8	25.6	38.5	69.9	86.8
				(In millions of ton oil equivalent)			
Production of crude oil and gas	122	136	143	155	163	222	229
Crude oil	94	107	114	126	133	185	187
Natural gas	27	29	29	29	30	37	43
				(In percent)			
Petroleum exports as a share of total exports	31.4	32.4	32.9	31.9	32.0	38.0	36.6
Petroleum exports as a share of total GDP	12.7	12.4	12.6	12.3	12.2	15.4	15.1
				(In kroner per barrel)			
Price of Norwegian crude oil	133	120	123	111	108	134	136
Memorandum item:							
Price of Norwegian crude oil (in US dollars per barrel)	20.5	19.3	17.4	15.7	17.0	20.8	19.2

Sources: Statistics Norway; and Ministry of Finance, *Nasjonalbudsjettet.*

Table A7. Norway: Indicators of International Competitiveness and Trade Performance

(Annual percentage change)

	1992	1993	1994	1995	1996	1997
Terms of trade						
All goods	-6.5	-1.3	-5.0	1.5	7.5	1.4
Traditional goods	-4.5	-0.6	-0.4	5.7	-1.5	1.7
Nominal effective exchange rate	1.1	-1.4	-1.3	2.5	-0.3	0.6
Relative unit labor costs	-0.1	-1.2	0.5	6.6	2.9	4.6
Exports of traditional goods						
In real terms	5.7	3.2	12.5	4.5	10.0	8.0
Export markets	3.7	0.8	9.9	8.5	6.2	8.0
Export market share	1.9	2.4	2.9	-4.1	2.9	-2.1
Imports of traditional goods						
In real terms	3.7	1.4	12.9	8.9	9.9	8.6

Sources: Statistics Norway; and IMF Research Department.

Table A8. Norway: Exports of Goods and Services

	1996 In billions of Nkr	1992	1993	1994	1995	1996	1997
		(Volume changes in percent)					
Total exports	414.3	5.2	3.2	8.7	4.3	9.8	5.8
Goods	321.7	8.3	3.4	11.0	6.3	11.3	5.6
Crude oil and gas	156.7	11.3	5.9	11.9	9.2	15.6	2.3
Ships, new	4.3	31.7	-60.2	44.8	-10.5	2.0	22.8
Ships, old	3.8	-3.8	7.0	-23.1	14.0	-39.5	-3.6
Oil platforms, new	0.1	56.2	1,574.0	-98.7	463.6	-8.1	270.2
Oil platforms, old	1.0	-86.2	2,134.8	-21.7	-44.0	94.7	5.2
Other oil related exports	0.1	59.2	-40.7	-14.9	54.4	23.9	-3.7
Traditional exports	155.9	5.7	3.2	12.5	4.5	10.0	8.0
Of which:							
Industrial products	145.5	4.9	3.2	13.2	3.6	10.5	8.4
Services	92.6	-2.6	2.4	2.7	-1.3	5.2	6.3
Freight earnings	46.6	-5.6	-2.7	4.5	3.9	1.7	4.2
Oil drilling	0.7	-24.4	75.0	-24.3	-12.2	20.9	1.4
Other oil related service exports	1.5	15.8	-8.5	1.4	-23.3	2.3	7.5
Pipeline services	3.4	-2.7	-4.2	31.6	20.1	49.1	19.1
Travel	15.2	7.6	6.7	13.4	-6.9	0.1	0.9
Other services	25.0	-1.5	9.4	-8.0	-7.8	11.1	11.9

Source: Statistics Norway.

Table A9. Norway: Imports of Goods and Services

	1996 In billions of Nkr	1992	1993	1994	1995	1996	1997
		(Volume changes in percent)					
Total imports	326.5	0.7	4.4	4.9	5.6	8.3	12.3
Goods	242.5	-1.2	4.9	7.9	8.8	11.2	10.6
Ships, new and old	6.3	-41.0	34.9	-27.0	-13.2	-5.5	101.7
Oil platforms, new and old	3.6	-84.5	316.0	-87.3	58.8	892.3	-43.8
Other oil related imports	7.7	-17.7	64.3	-30.5	42.2	19.8	22.1
Traditional imports	224.9	3.7	1.4	12.9	8.9	9.9	8.6
Of which:							
Industrial products	209.1	4.0	1.5	12.4	9.3	9.1	9.8
Services	84.0	5.3	3.4	-1.7	-2.0	0.6	17.5
Shipping	20.0	-1.4	-9.7	6.5	8.1	1.7	4.2
Oil drilling	1.2	10.3	18.5	-41.2	-30.4	86.0	27.0
Other oil related service imports	4.1	-10.2	23.6	28.7	-41.7	1.5	32.7
Travel	29.1	10.4	2.1	7.2	1.8	4.7	10.0
Other services	29.5	8.6	9.1	-15.2	-2.0	-5.5	31.1

Source: Statistics Norway.

Table A10. Norway: Balance of Payments

(Billions of U.S. dollars, unless otherwise indicated)

	1992	1993	1994	1995	1996	1997
Goods and services						
Exports	48.3	44.5	47.2	55.7	64.2	63.3
Goods	35.4	32.2	34.8	42.1	49.9	48.6
Oil and gas	15.6	14.7	15.1	17.9	24.3	23.2
Other	19.8	17.5	19.7	24.3	25.6	25.5
Non-factor services	12.9	12.4	12.4	13.6	14.4	14.7
Imports	39.6	36.9	39.5	47.0	50.6	52.5
Goods	27.1	25.3	28.0	34.2	37.6	37.8
Non-factor services	12.4	11.6	11.5	12.7	13.0	14.7
Trade balance	8.3	6.9	6.8	7.9	12.3	10.8
Services balance	0.5	0.8	0.9	0.9	1.3	0.0
Balance of goods and services	8.7	7.7	7.6	8.8	13.6	10.8
Balance of factor payments	-4	-3.8	-3.9	-3.9	-3.0	-2.8
Factor payments from abroad	4.2	3.7	4.7	5.8	6.2	6.5
Factor payments to abroad	8.2	7.5	8.6	9.7	9.2	9.3
Current account balance	4.5	3.5	3.7	4.9	10.6	8.0
(In percent of GDP)	3.5	3.0	3.0	3.3	6.7	5.2
Valuation effects	-0.5	-1.6	1.2	2.2	-0.8	-2.1
Net capital transfers	-0.2	-0.03	-0.2	-0.2	-0.1	-0.2
Net capital outflows	3.8	1.9	4.8	6.9	9.7	5.7

Sources: Statistics Norway.

Table A11. Norway: Net External Debt

(In billions of U.S. dollars, at end of period)

	1992	1993	1994	1995	1996	1997
Net external debt						
Private sector	10.9	15.2	13.6	10.1	17.1	20.2
Oil and shipping	7.3	8.8	8.3	7.6	5.2	...
Private financial institutions	-1.8	1.9	0.9	-1.6	5.3	11.4
Other	5.4	4.5	4.4	4.1	6.6	...
Public sector	-0.8	-7.3	-10.1	-10.4	-23.0	-30.9
Central government	7.5	9.1	9.3	10.2	8.3	6.1
State banks and Norges Bank	-9.5	-17.4	-20.2	-21.6	-31.8	-37.3
Local governments	1.3	1.0	0.8	1.0	0.6	0.3
Total	10.1	7.8	3.5	-0.3	-5.9	-10.7
Memorandum item:						
Net external debt (in percent of GDP)	8.9	7.1	2.7	-0.2	-3.7	-7.2

Sources: Ministry of Finance, *NasjonalBudsjettet*; and Norges Bank, *Economic Bulletin.*

Table A12. Norway: Labor Market Indicators

	1992	1993	1994	1995	1996	1997
	(Period averages in thousands)					
Survey data						
Labor force	2,130	2,131	2,151	2,186	2,246	2,285
Employment	2,004	2,004	2,035	2,079	2,137	2,192
Unemployment	126	127	116	107	109	93
Data based on information from employment agencies						
Registered unemployment	114	118	110	102	91	74
Unfilled vacancies	6	7	8	9	10	--
Persons affected by labor market programs	63	72	73	63	57	42
	(In percent of labor force)					
Survey unemployment	5.9	6.0	5.4	4.9	4.9	4.1
Registered unemployment	5.4	5.5	5.1	4.7	4.2	3.3
Unfilled vacancies	0.3	0.3	0.4	0.4	0.4	--
Persons affected by labor market measures	2.9	3.4	3.4	2.9	2.5	1.9

Source: Statistics Norway, Monthly Bulletin of Statistics.

Table A13. Norway: Wages and Prices

(Annual percentage changes)

	1992	1993	1994	1995	1996	1997
Hourly wage costs						
Total economy	3.1	3.6	3.9	4.7	4.7	5.0
Mainland	3.4	1.8	3.9	4.7	4.7	4.9
Mainland GDP deflator	1.5	1.8	1.8	4.7	1.0	3.0
Manufacturing labor costs						
Hourly labor costs	2.2	1.5	2.8	5.0	4.5	4.3
Productivity	2.6	0.6	0.8	0.4	2.0	1.8
Unit labor costs	-0.4	0.9	2.0	4.6	2.5	2.5
Consumer prices	2.7	2.1	1.2	2.3	1.3	2.5
Food, beverages and tobacco	3.7	0.1	1.9	2.3	1.9	4.3
Clothing and footwear	1.5	3.0	1.3	0.1	-3.4	-0.3
Housing, light and fuels	3.2	2.5	0.9	2.2	2.6	3.1
Furniture and household appliances	0.9	2.0	0.8	1.1	1.0	0.6
Health services	5.9	4.1	2.3	5.0	3.8	2.1
Transportation and communication services	3.4	3.0	2.2	4.1	-0.0	3.4
Education and recreation	2.2	2.5	1.2	1.5	0.3	1.7
Hotels and restaurants	3.8	3.9	1.1	2.4	2.1	2.5
Other domestic goods and services	-0.5	1.5	-2.6	3.0	2.0	0.9

Source: Statistics Norway.

Table A14. Norway: General Government Revenue and Expenditures

(In millions of Norwegian Kroner)

	1993	1994	1995	1996	1997	1998 Prel.
Total revenue	408,867	437,152	475,239	528,729	562,337	560,413
Social Security	83,134	87,235	91,455	97,996	104,263	105,961
Interest and dividends	48,062	43,154	42,955	41,169	43,802	45,647
Total expenditure	420,693	433,852	442,991	462,580	481,427	511,239
Social Security						
Interest	27,556	26,841	26,229	25,379	23,364	24,930
Financial balance	-11,826	3,300	32,248	66,149	80,910	49,174

Source: Ministry of Finance.

Table A15. Norway: Interest Rates

(In percent)

	Discount rates 1/			3-month Interbank rates 2/			Government bond yields 2/			Stock market indices (1990=100)	
	Norway	Germany	Differential	Norway	Germany	Differential	Norway	Germany	Differential	Norway	Germany
1991	10.0	8.0	2.0	10.6	9.2	1.4	10.1	8.5	1.5	93.1	91.5
1992	11.0	8.2	2.8	11.8	9.5	2.4	9.9	7.8	2.1	86.7	87.3
1993	7.0	5.8	1.2	7.3	7.2	0.0	6.9	6.5	0.5	111.4	93.6
1994	6.8	4.5	2.2	5.9	5.3	0.5	7.5	6.8	0.7	142.5	106.1
1995	6.8	3.0	3.8	5.5	4.5	1.0	7.4	6.8	0.6	151.8	103.3
1996	6.0	2.5	3.5	4.9	3.3	1.6	6.8	6.2	0.5	182.3	117.9
1997	5.5	2.5	3.0	3.7	3.3	0.4	5.9	5.7	0.2	258.3	161.5
1996											
Jan.	6.8	3.0	3.8	5.5	3.6	1.9	6.4	5.9	0.5	166.2	114.8
Feb.	6.8	3.0	3.8	5.3	3.3	2.0	6.8	6.2	0.6	166.9	114.2
Mar.	6.5	3.0	3.5	4.9	3.3	1.6	6.8	6.5	0.3	171.5	114.0
Apr.	6.5	2.5	4.0	4.7	3.3	1.4	6.7	6.4	0.3	180.1	113.9
May	6.5	2.5	4.0	4.8	3.3	1.5	6.9	6.5	0.4	183.7	115.3
June	6.5	2.5	4.0	4.9	3.3	1.6	7.0	6.6	0.4	187.2	117.8
July	6.5	2.5	4.0	5.0	3.3	1.6	7.0	6.5	0.5	181.6	113.6
Aug.	6.5	2.5	4.0	5.0	3.3	1.8	7.0	6.3	0.7	177.2	116.5
Sep.	6.5	2.5	4.0	5.1	3.1	2.0	7.0	6.2	0.8	181.0	120.4
Oct.	6.5	2.5	4.0	5.1	3.1	2.0	6.7	6.0	0.7	188.8	120.3
Nov.	6.0	2.5	3.5	4.4	3.2	1.2	6.5	5.9	0.6	197.0	126.2
Dec.	6.0	2.5	3.5	4.1	3.2	0.9	6.3	5.8	0.5	206.6	128.1
1997											
Jan.	5.2	2.5	2.8	3.5	3.1	0.4	6.0	5.8	0.2	227.5	134.9
Feb.	5.2	2.5	2.8	3.5	3.2	0.4	5.7	5.6	0.1	241.3	143.5
Mar.	5.2	2.5	2.8	3.5	3.2	0.3	5.9	5.8	0.1	238.4	150.6
Apr.	5.2	2.5	2.8	3.5	3.2	0.3	6.2	5.9	0.3	234.4	151.1
May	5.2	2.5	2.8	3.5	3.1	0.3	6.0	5.8	0.2	247.8	155.7
June	5.2	2.5	2.8	3.5	3.1	0.4	6.0	5.8	0.2	256.7	164.4
July	5.5	2.5	3.0	4.0	3.1	0.9	6.0	5.6	0.4	271.1	187.0
Aug.	5.5	2.5	3.0	4.0	3.2	0.8	6.1	5.7	0.4	276.7	167.9
Sep.	5.5	2.5	3.0	3.9	3.3	0.7	5.9	5.6	0.3	278.0	176.9
Oct.	5.5	2.5	3.0	4.0	3.5	0.4	5.8	5.6	0.2	287.9	160.8
Nov.	5.5	2.5	3.0	3.9	3.7	0.3	5.7	5.6	0.2	271.7	167.8
Dec.	5.5	2.5	3.0	3.9	3.7	0.2	5.5	5.3	0.2	268.4	177.5
1998											
Jan.	5.5	2.5	3.0	3.8	3.6	0.3	5.3	5.1	0.2	261.9	185.2
Feb.	5.5	2.5	3.0	3.8	3.5	0.3	5.2	5.0	0.2	268.3	196.5
Mar.	5.8	2.5	3.2	4.1	3.5	0.6	5.2	4.9	0.3	286.9	211.3
Apr.	5.8	2.5	3.2	4.1	3.6	0.5	5.3	4.9	0.4	302.2	212.5
May	6.2	2.5	3.8	4.5	3.6	0.9	5.5	5.0	0.5	294.2	227.0
June	6.5	2.5	4.0	4.8	3.5	1.3	5.4	4.8	0.6	277.1	235.6
July	7.0	2.5	4.5	5.3	3.5	1.8	5.4	4.7	0.7	285.6	235.6
Aug.	10.0	2.5	7.5	6.7	3.5	3.3	5.5	4.4	1.1	249.2	197.1
Sep.	10.0	2.5	7.5	8.0	3.5	4.6	5.5	4.1	1.5	209.5	183.2
Oct.	10.0	2.5	7.5	7.9	3.5	4.4	5.5	4.0	1.5	199.7	190.1
Nov.	10.0	2.5	7.5	8.0	3.6	4.3	5.5	4.1	1.4	213.7	202.5

Source: IMF, International Financial Statistics.

1/ End of period.
2/ Period averages.

Table A16. Norway: Exchange Rate Developments

	Krone/ SDR	Krone/ US$	Krone/ ECU	Effective exchange rates (1990=100) Nominal	Effective exchange rates (1990=100) Real 1/	SDR/ Krone	US$/ Krone	ECU/ Krone	Effective exchange rates (1990=100) Nominal	Effective exchange rates (1990=100) Real 1/
	(Period average)					(Percent change from previous period)				
1991	8.9	6.5	8.0	98.4	99.4	4.4	3.6	0.8	-1.6	-0.6
1992	8.8	6.2	8.0	99.4	99.3	-1.3	-4.1	0.3	1.1	-0.1
1993	9.9	7.1	8.4	98.0	98.0	13.2	14.2	3.9	-1.4	-1.2
1994	10.1	7.1	8.4	96.7	98.5	2.0	-0.5	0.3	-1.3	0.5
1995	9.6	6.3	8.3	99.2	105.0	-4.9	-10.2	-1.1	2.5	6.6
1996	9.4	6.4	8.2	98.9	108.1	-2.6	1.8	-1.1	-0.3	2.9
1997	9.7	7.1	8.0	99.4	113.1	4.0	9.7	-2.2	0.6	4.6
1997										
Jan.	9.1	6.4	7.8	102.7	115.0	-1.9	-0.3	-3.0	2.9	3.0
Feb.	9.2	6.6	7.7	103.7	116.4	0.5	2.7	-1.5	1.0	1.3
Mar.	9.4	6.8	7.8	102.3	115.1	2.5	2.9	1.4	-1.3	-1.1
Apr.	9.6	7.0	8.0	100.5	113.3	1.7	2.2	1.9	-1.7	-1.6
May	9.8	7.1	8.1	98.6	111.4	2.4	1.4	1.7	-1.9	-1.7
June	10.0	7.2	8.2	97.2	110.4	2.4	2.0	0.9	-1.4	-0.9
July	10.2	7.4	8.2	96.0	109.7	2.2	3.2	0.3	-1.3	-0.6
Aug.	10.3	7.6	8.2	96.0	110.4	0.9	2.7	-0.5	0.0	0.6
Sep.	10.0	7.3	8.0	98.0	112.7	-3.6	-4.0	-1.5	2.1	2.1
Oct.	9.7	7.1	7.9	99.9	114.7	-2.6	-3.4	-1.6	1.9	1.8
Nov.	9.7	7.1	8.0	99.1	113.9	0.0	-0.3	1.5	-0.8	-0.7
Dec.	9.8	7.3	8.1	98.7	113.8	1.3	2.8	0.2	-0.4	-0.1
1998										
Jan.	10.1	7.5	8.1	97.5	112.6	2.4	3.3	1.1	-1.3	-1.0
Feb.	10.2	7.6	8.2	96.5	111.9	1.4	0.9	0.9	-0.9	-0.7
Mar.	10.2	7.6	8.2	96.3	112.1	-0.1	0.3	-0.1	-0.2	0.2
Apr.	10.1	7.5	8.2	96.3	112.5	-0.8	-0.7	-0.0	-0.0	0.4
May	10.1	7.5	8.3	96.4	113.2	0.0	--	0.5	0.1	0.6
June	10.1	7.6	8.3	95.8	112.9	-0.2	0.6	1.0	-0.7	-0.3
July	10.1	7.6	8.4	95.6	113.1	0.5	0.7	0.4	-0.1	0.2
Aug.	10.2	7.7	8.5	95.2	113.0	0.8	1.2	1.5	-0.4	-0.1
Sep.	10.3	7.6	8.7	92.8	110.6	1.1	-1.7	2.9	-2.6	-2.1
Oct.	10.5	7.4	8.9	91.9	110.1	1.1	-2.0	1.4	-0.9	-0.5
Nov.	10.4	7.5	...	93.5	112.5	-0.8	0.3	...	1.7	2.3

Source: IMF, International Financial Statistics.

1/ Normalized unit labor costs in manufacturing adjusted for exchange rate changes.

Table A17. Norway: International Reserves

(In billions of US dollars, end of period)

	1992	1993	1994	1995	1996	1997
Official reserves	12.00	19.67	19.09	22.58	26.43	23.42
Gold 1/	0.04	0.04	0.04	0.04	0.05	0.04
SDRs	0.19	0.40	0.38	0.46	0.36	0.35
Reserve position in the Fund	0.65	0.59	0.65	0.95	0.88	0.98
Foreign exchange	11.12	18.64	18.02	21.12	25.14	22.05

Source: IMF, International Financial Statistics, Norges Bank, Economic Bulletin.

1/ Gold valued at SDR 35 per fine ounce.