Jarle Bergo: Oil - economic policy challenges

Address by Mr Jarle Bergo, Deputy Governor of Norges Bank (Central Bank of Norway), at the 2003 Southern Norway Conference, Kristiansand, 11 March 2003.

The address is based on the assessments presented at Norges Bank's press conference following the Executive Board's monetary policy meeting on 5 March and on previous speeches. Please note that the text below may differ slightly from the actual presentation.

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Oil is a major component of the Norwegian economy - with all the advantages and disadvantages this entails. Oil gives us an economic base that is not available to many other countries. But it also presents us with considerable challenges. How should we use our petroleum wealth wisely? This question poses a number of economic policy challenges. In my discussion today, I will focus on three points:

First, we must manage our petroleum resources recognising that they are part of our national wealth. When oil is extracted and sold, natural assets are transformed into financial wealth. This is not income in the ordinary sense. Norway's national wealth belongs not only to our generation, but also to future generations. This means that our petroleum wealth must be equitably distributed between generations. The authorities must therefore be disciplined and apply long-term considerations in their spending.

Moreover, the size of the cash flow from petroleum activities varies considerably. If it were to be used as it accrues, this would have an enormous impact on demand impulses in the Norwegian economy, and dramatically amplify cyclical fluctuations.

Third, the use of petroleum revenues will have an impact on competitiveness in Norwegian business and industry. A high level of earnings and substantial fluctuations in the use of petroleum revenues may have a considerable impact on the operating parameters for internationally exposed industries. It is therefore important that we succeed in maintaining an industry structure that promotes learning, innovation and development.

We are now in a phase where petroleum wealth is being converted from natural resources under the seabed to financial assets abroad.

Both types of wealth involve large amounts of capital and are part of our national wealth, which provides the basis for Norway's potential consumption over the long term. Consequently, it is crucial that our national wealth is managed in a sound and prudent manner, so that the return will be high and the risks acceptable.

Petroleum production generates a profit in excess of a normal return, i.e. economic rent. As economic rent accrues to the state, this gives the central government a cash flow from petroleum activities. Thus, the central government is now accumulating substantial capital.

Management of the Petroleum Fund poses challenges. At the same time, there is a demographic challenge to be faced: the working population will decline sharply, and the proportion receiving income from the public sector will rise.

The chart illustrates developments in the labour force and the number of pensioners in the period up to 2050. The blue line shows that the labour force is projected to increase by about 150 000 from 2000 to 2030. Old-age and disability pensioners will increase by some 500 000, shown by the grey line. This means that the number of persons in the labour force relative to the number of pensioners will fall from 2.6 to 1.8. These rough estimates are among other things based on the assumption that labour immigration remains at the present level.

The increase in the number of pensioners will result in a sharp increase in the obligations of old-age and disability pension funds. Expenditure on old-age and disability pensions is expected to more than double as a share of total GDP in the course of the next 30 years. The increase in the number of elderly, especially those over the age of 80, will in time require an increase in resources for nursing and care services. Welfare reforms that have been adopted will also contribute to increasing the need for resources in the public service sector in the years ahead.

With an ageing population and strong growth in expenditure on pensions and nursing and care services, our petroleum wealth will be a welcome source of revenues. This is why it is particularly important that it is managed in a sound manner.

Petroleum activities are a substantial component of the Norwegian economy. In the chart, petroleum investment is shown by the blue line, while the red line shows the central government's net cash flow from petroleum activities. Petroleum investment rose sharply in the 1970s and has subsequently varied between 4 and 8 per cent of GDP. Petroleum investment fluctuates considerably and has a substantial impact on cyclical developments in the Norwegian economy. The authorities can only regulate petroleum investment to a limited extent. It is therefore difficult to prevent the impulses to the Norwegian economy that are generated by these fluctuations. Consequently, it is all the more important to prevent fluctuations in the cash flow to the central government from these activities from having a direct impact on the economy.

Allow me to illustrate the consequences this might have:

Let us suppose that the oil price temporarily increased by NOK 20 per barrel, or a little less than USD 3 per barrel. This is a small change, well within normal variations from one year to the next. The central government's net cash flow from petroleum activities would then increase by around NOK 16 billion the first year and NOK 20-22 billion the next. This corresponds to almost 2 per cent of Norway's annual GDP.

If the increase in the cash flow is taken into the economy through higher expenditure or reduced taxes in the central government budget, aggregate domestic demand will be affected. Higher expenditure requires an increase in the public sector's use of real resources, primarily labour. Two per cent of GDP is then a substantial figure. If the increase in petroleum revenues is used domestically, this would correspond to almost all the annual growth in the mainland economy in a normal year. If the private sector of the economy is also expanding, and the economy is already close to its capacity limit, this policy would swiftly lead to strong pressures on economic resources. This would result in a rise in wages and prices. This policy would also lead to unstable conditions in the foreign exchange market. When oil prices then fell again and central government expenditure dropped, the economy would experience a very strong contraction.

The Government Petroleum Fund was established in 1990 with a view to safeguarding long-term considerations in the use of petroleum revenues. The idea behind the Petroleum Fund is that the cash flow from an increase in the oil price should accrue to the Fund and be invested abroad and that the increase in the oil price should not affect the wider budget. Thus, rather than affecting the domestic economy, the increase in the cash flow would be invested abroad through the Petroleum Fund. Similarly, a fall in the oil price would not affect the domestic economy, but would result in lower accumulation of foreign assets. By building up the Fund, the aim of ensuring that several generations will enjoy the benefits of our petroleum wealth is also taken into account.

In March 2001, the fiscal guideline and new guidelines for monetary policy were introduced. The guideline for fiscal policy implies that the central government budget deficit shall be equivalent over time to the expected real return on the Government Petroleum Fund. The new guidelines for economic policy received broad support in the Storting.

The guideline specifying that only the real return on the Petroleum Fund is to be used means that the capital in the Fund is not depleted. The capital in the Petroleum Fund will increase as long as there is a positive cash flow (to the central government) from petroleum activities. When the conversion from petroleum assets to financial wealth has been completed, the objective will still be to restrict withdrawals so that the real value of the Fund's capital is maintained - in principle, indefinitely.

The guideline thereby provides a long-term anchor for fiscal policy. The guideline provides a stable framework that contributes to curbing fluctuations in the Norwegian economy that are caused by converting petroleum assets into investment at home and abroad. The guideline has been adhered to in the past two years.

As mentioned, the largest conversion of our national wealth in the next thirty years will be from oil as recoverable reserves to oil as financial wealth. The question might, of course, be raised as to whether an alternative option would be to keep our wealth in the form of oil and extract what we needed. Whether this would be profitable or not depends on oil price developments compared with the return on financial assets.

If we look at the period from 1986 and compare developments in nominal oil prices with the return on a fund managed according to the Petroleum Fund's investment strategy - a global portfolio containing bonds and equities in a 60-40 distribution - we see that the fund would have yielded a far higher annual return.

What about the risk? How is it affected by a conversion from oil to financial wealth? History provides us with a clear, if somewhat surprising answer. A conversion from oil to financial wealth increases the return and at the same time reduces the risk. This is because wealth under the seabed (somewhat simplified) only consists of one asset, petroleum, while broadly invested financial wealth is highly diversified in many instruments whose return fluctuates at different rates.

Today the distribution between financial wealth (the Petroleum Fund) and petroleum is about 20-80. If we venture to base our assessment on historical relationships, it is fairly clear that we have, relatively speaking, too much oil in our portfolio and that the current conversion to financial wealth is to our advantage. We have no guarantee, of course, that history will repeat itself, but relying on the opposite requires considerable courage.

The Petroleum Fund can be invested in two main types of instruments; bonds and equities. The international bond market is about the same size as the equity market. Government bonds are a relatively safe investment, but the return is low. Long-term rates in the US and Europe currently stand at around 4 per cent. New investments will thus achieve an annual real rate of return of 1½-2 per cent. By way of comparison, the authorities have based their use of petroleum revenues over the central government budget on the assumption that the Petroleum Fund can generate a long-term real return of 4 per cent. It is unlikely that this rate of return will be achieved if we only invest in bonds.

Buying a bond means lending money to others. Buying equities is the same as investing in real assets. Buying equities gives us direct ownership of the means of production in global business and industry. On the one hand, these ownership rights provide high returns when companies are flourishing. On the other, shareholders are the first to sustain losses when companies fail. Consequently, the return on shares fluctuates far more than the return on bonds, reflecting the higher level of risk. Over the past 75 years, equity returns in the US market have been negative almost every third year.

An investor will only invest in high-risk vehicles if it is reasonable to expect compensation for the risk. The compensation for high risk in the stock market is a far higher average return for equities compared with bonds. Since 1926, the annual return on US equities has on average been 4.8 percentage points higher than the return on bonds. Also in most ten-year periods, investing in US equities has been profitable, with the exception of the depression in the 1930s and the last half of the 1970s. Equity returns have been negative after ten years only in the years between 1928 and 1938, in other words on equity investments made the year before the 1929 stock market crash.

It may also be worth noting that equities purchased during recessions - such as in the mid-1930s and mid-1970s - brought solid returns ten years later. The picture is the same for most other countries.

Since short-term fluctuations in equity prices are difficult to predict, it may be a sound strategy to keep the share of equities constant over time. This means buying a relatively large volume of equities when prices are low, and buying a smaller volume - or selling - when prices are high. This is the strategy applied by the Petroleum Fund.

Let us now revert to the Norwegian economy and Norwegian economic policy. The revision of economic policy in March 2001 can to some extent be said to be a consequence of our oil economy. The new guidelines have also changed the interaction between the different components of economic policy. Fiscal policy will now have an expansionary effect. In order to prevent pressure from becoming too strong, monetary policy has to be tighter than would otherwise have been the case. Monetary policy has therefore been given a clearer role in stabilising economic developments.

A clear monetary policy target is a necessary complement to the fiscal guideline with a view to ensuring reasonable macroeconomic stability. The operational target of monetary policy as defined by the Government is inflation of close to 2.5 per cent over time. The inflation target provides economic agents with an anchor for their decisions concerning saving, investment, budgets and wages. Households, businesses, public entities, employees and employers can base decisions on the assumption that inflation in Norway will be 2½ per cent over time.

The rise in labour costs is an important factor underlying Norges Bank’s assessment of the inflation outlook and interest rate decisions. If wage growth is too high - both in manufacturing industry and other industries - the internationally exposed sector will be affected in two ways. First, high wage

growth will itself reduce earnings and employment. Second, the interest rate will be raised. Normally, this will lead to an appreciation of the krone, with a further reduction in earnings and employment. This will amplify the impact of high wage growth on manufacturing industry. Since the new guidelines on the use of petroleum revenues were introduced in a period when the labour market was tight, the krone was expected to be strong in periods.

The interest rate differential between Norway and trading partners has resulted in a strong krone. The wide interest rate differential is due to the historically low level of interest rates abroad. The slowdown in global growth has been more pronounced and spanned a longer period than we had expected. The Norwegian economy has also felt the effects of this. Norges Bank has therefore lowered the sight deposit rate from 7 to 5.5 per cent since 11 December, most recently on 5 March. The interest rate differential has narrowed. Since mid-January, the krone has depreciated, partly reflecting expectations of lower interest rates. Monetary policy has been relaxed.

There is uncertainty associated with developments in many of the factors that will influence inflation ahead, among others the exchange rate. This implies a gradual approach to the conduct of monetary policy.

Increased spending of petroleum revenues will have implications for Norway's industry structure. High demand for goods and services that require domestic resources, necessitates higher employment in the sheltered sector. This labour has to be recruited from the exposed sector, or through the natural increase in the labour force finding its way to the sheltered sector.

Even if employment and output in Norwegian manufacturing industry fall, developments for Norwegian enterprises may not necessarily be only negative. Some enterprises may be at the cutting edge of technology, and increase their efficiency in pace with the rise in costs in Norway.

Others may relocate labour-intensive activities abroad. The scaling back of manufacturing still involves a risk. It makes the economy more vulnerable; the foundation for learning, innovation and development may be undermined when a smaller share of the business sector is exposed to intense international competition.

Even with a sustained extra currency income in the form of the return on the Petroleum Fund, the main share of Norwegian imports must be financed using revenues deriving from exports of goods and services from mainland Norway. This places demands on profitability in exposed industries. In the long run, cost competitiveness must be adapted to the need for financing imports and securing balance in the external economy.

Imports currently account for more than 30 per cent of GDP in Norway. The return on the Petroleum Fund will range between 4-5 per cent of GDP when the bulk of our oil resources have been extracted and converted into financial wealth. This means that no more than close to 1/5 of imports can be financed on the basis of oil in the long run. In other words, if the share of imports is to remain at the current level, a sizeable internationally exposed sector will be needed to finance imports.

Both our petroleum wealth and financial wealth are sizeable. However, it is the discounted value of our own labour that is our predominant asset. Our livelihood essentially depends, and will continue to depend in the future, on our ability to produce goods and services efficiently through our labour, and to use our creativity and innovation to become ever more efficient.

This can be illustrated by the following example: If a perception that oil has made us so wealthy that we can to some extent relax leads to a reduction in annual productivity growth of a quarter percentage point, i.e. a reduction in trend GDP growth from the current level of about 2 per cent to 1¾ per cent, the income base would be reduced by more than the entire return on petroleum wealth.

Societies that suddenly gain access to wealth deriving from natural resources have a tendency to spend the money and then fall into decline. A very clear example of this can be found in Spain already in the 1660s. The colonisation of South and Central America gave this country access to a wealth of natural resources, and to gold. Spain chose to spend a large portion of the windfalls on luxury and war. The attitude to working that this led to did not make it easy for these countries to get back on their feet again when the gold came to an end.

Many countries have had similar experiences in more recent times. The expression "Dutch disease" comes from the turn of events in the Dutch economy in the 1970s and 1980s after the revenues from the large gas finds in the Groningen field were used to finance strong growth in public spending. When the gas revenues declined, economic growth came to a halt and economy policy had to be tightened.

Several studies of the relationship between long-term economic growth and natural resources show that countries with an abundant suppy of natural resources have tendency to experience lower economic growth. Why? In principle, an abundance of natural resources is an advantage for a country's economy.

One of the main findings of the studies on the relationship between long-term economic growth and the supply of natural resources is illustrated in the chart. The chart was made by Jeffrey Sachs and Andrew Warner, two of the most prominent researchers who have studied the phenomenon that has come to be known as the “resource curse”. They use the size of a country’s exports of natural resources in relation to GDP in 1970 to measure how rich the various countries are in terms of natural resources. There is a negative correlation between the supply of natural resources and economic growth in the period 1970-1989. The group of countries with the highest growth rates includes the Asian tigers, which have had a very limited supply of natural resources. Several of the oil-rich countries around the Persian Gulf fall into the group of countries with the lowest growth. This could suggest that it is not necessarily an advantage to have an abundance of natural resources. There are many factors that influence economic growth. Sachs and Warner only look at one of these factors in their chart. The relationship has proved to be relatively robust, however. It is true that some economists have argued that the negative relationship does not apply when institutional factors in the countries included in the study are taken into account.

Venezuela is one of the poorest performing countries in the Sachs and Warner study. The country has the largest known oil reserves in the world, and also has an abundance of other natural resources. Venezuela has been among the largest oil producers since the 1920s. But as a result of an unsound economic policy, the country has not been able to achieve solid and stable economic growth. After the rise in oil prices in the 1970s, government spending increased sharply. In the 1980s, fiscal policy was also highly expansionary. The result was high inflation and rising unemployment. Close to 85 per cent of the country’s population is living in poverty. Economic growth has been weak. Between 1970 and 2002, GDP per capita has fallen by about 20 per cent.

Why have many countries failed to make good use of windfalls? There may be a number of reasons. In terms of economic policy, an explanation is that the wealth deriving from the resources leads to an extreme focus on acquiring as much of this extra wealth by various groups. The contest for this profit is often referred to as “rent-seeking behaviour”. Countries with an abundance of natural resources may be more vulnerable to extreme “rent-seeking behaviour” than economies with a limited supply of natural resources. The competition between the various factions can lead to an inefficient tapping of natural resources and an unsound use of revenues. The spirit of enterprise, talent and energy in both business and political life are used to acquire a share of this income rather than to foster productive activity in both the public and private sector. For an individual company or a group, this activity may seem rational - a 10 per cent chance to win the jackpot could be better than investing in a business that yields an ordinary return. This may have damaging consequences for a country.

A sociological explanation is that easily acquired wealth weakens the incentive for innovation and work. We feel that we have become rich and want to live the good life. A possible economic explanation is that a large and broad sector that is exposed to international competition fosters learning and development. Without such a sector, the competitive intensity in the economy may decline and the ability and willingness to be innovative may be impaired.

We must be cautious about drawing final conclusions based on historical comparisons. We would prefer to assume that we are managing our wealth better. However, it may be of particular relevance to highlight three critical pre-conditions for succeeding in this. First: Decision-making forms and processes in the political and economic arena must provide effective protection against the acquisition by interest groups of the right to use large shares of the petroleum wealth. Second: It is important for the growth potential in the economy that we maintain a broad sector in the mainland economy that works under intense competition so that we maintain and strengthen the incentive to acquire knowledge and to be innovative. Third: It is important that we bear in mind the issue of distribution across generations and that we manage the wealth as an asset.

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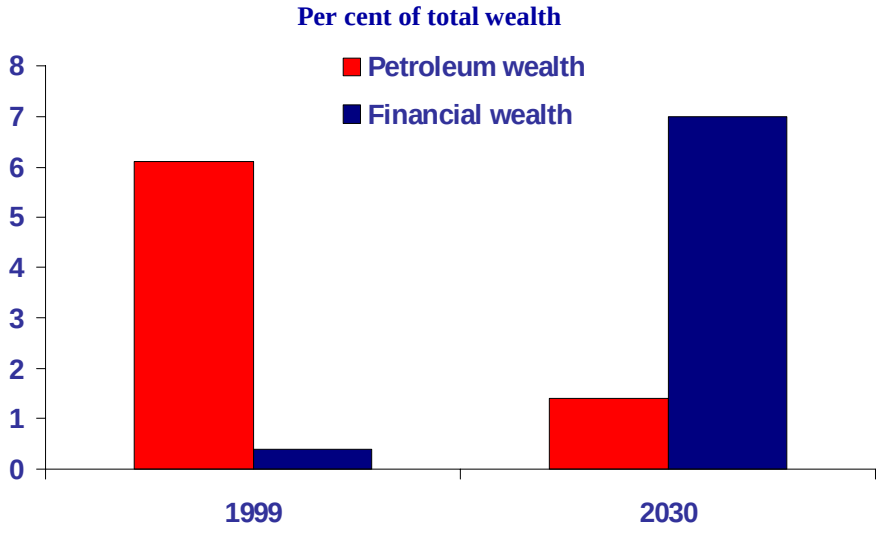
1. From petroleum to financial wealth



Source: Long-term programme 2002-2005

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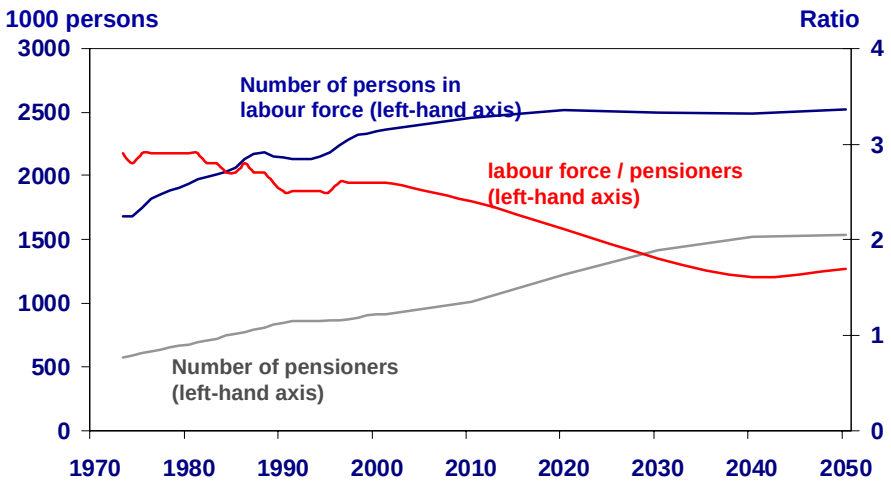
2. A Demographic Challenge



Source: National Budget 2003

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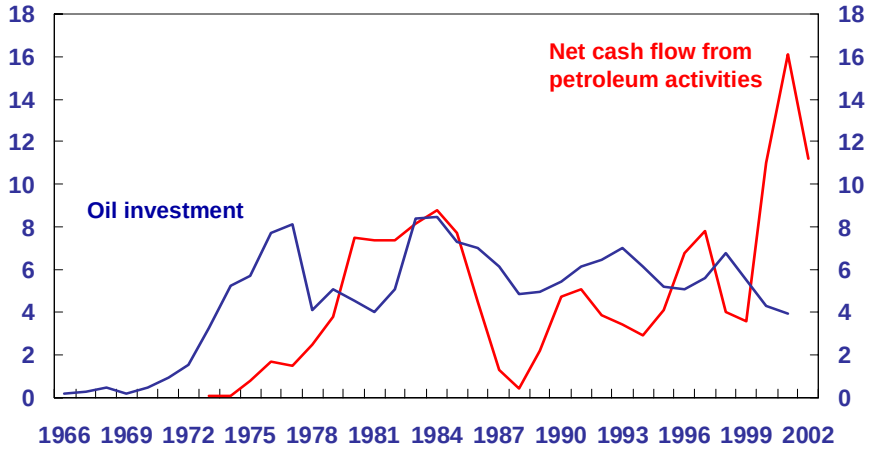
3. Petroleum activities and the Norwegian economy
Per cent of GDP



Source: National Budget 2003 and Norges Bank

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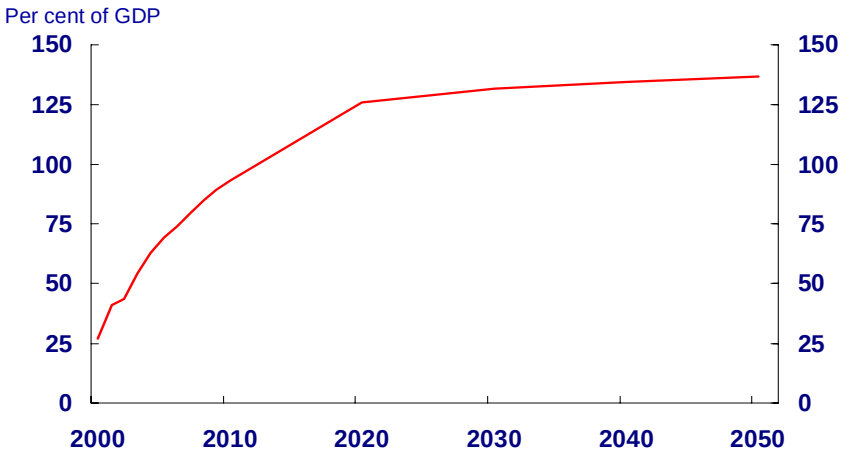
4. The Government Petroleum Fund [1)]

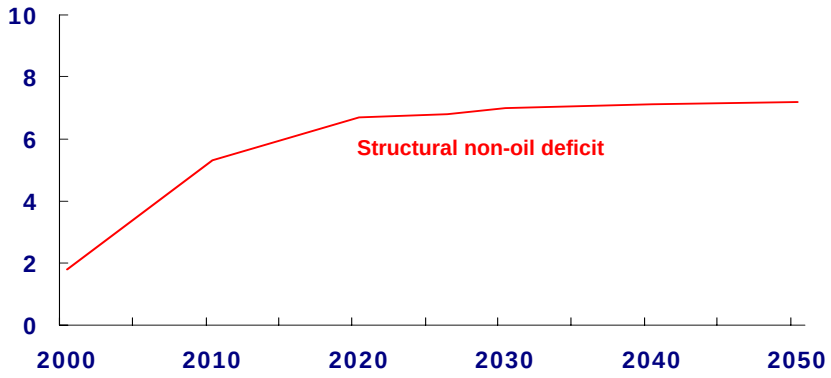


1) When expected return is used.

Source: National Budget 2003, National Budget 2002 and Norges Bank

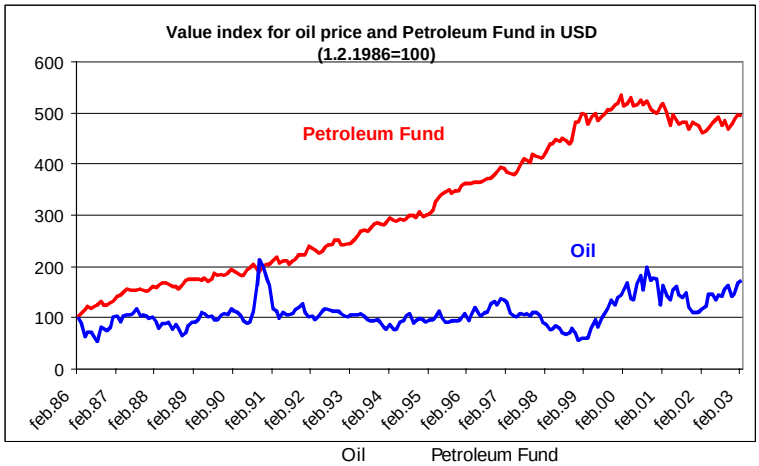
5. The fiscal policy rule prevents large unexpected changes in the impulses from use of oil revenues

Per cent of GDP for Mainland Norway



Source: National Budget 2003

6. Return on oil vs petroeleuml fund



	Oil	Petroleum Fund
Annual return	3.3 %	9.9 %
Standard deviation	40.5 %	8.9 %

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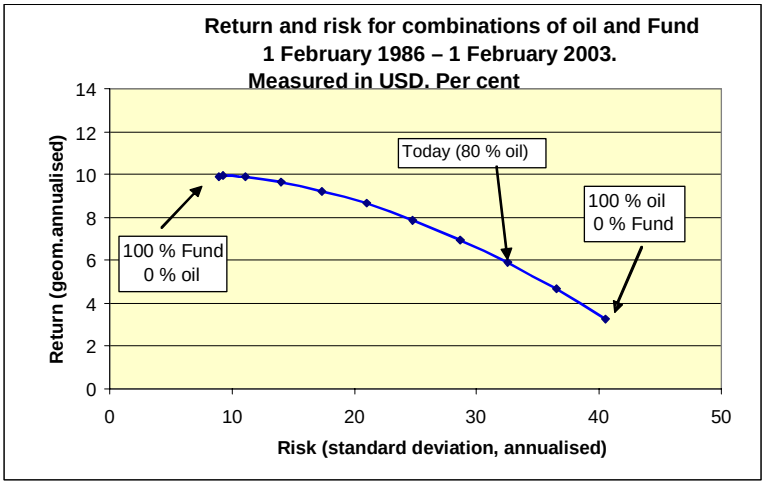
7. Return and risk: oil vs Fund

- with the Fund's current equity portion (40 %)



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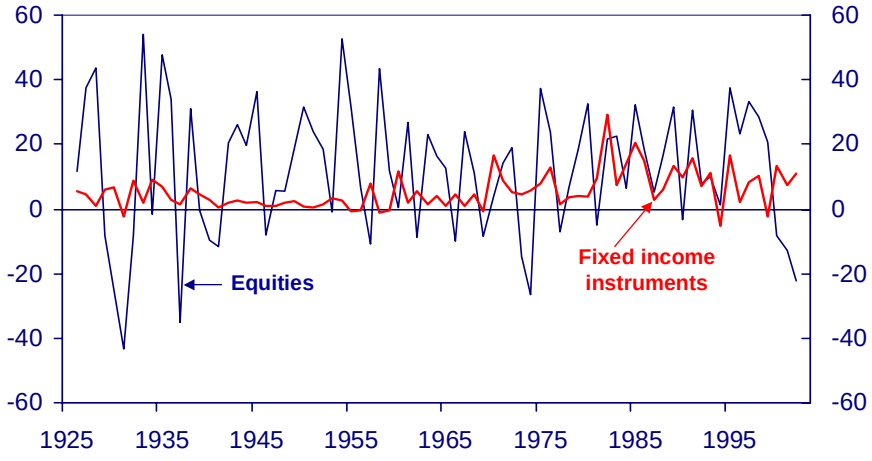
8. Annual return in the US

Per cent



Source: Ibbotson Associates og Datastream

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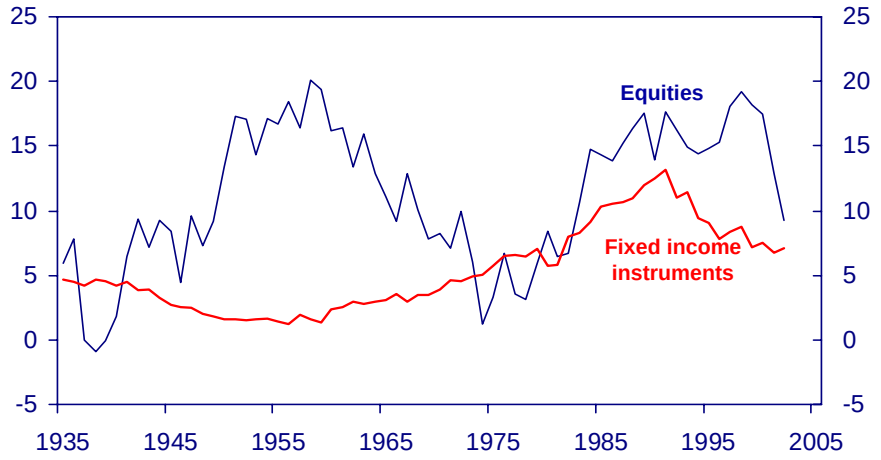
9. Average return in the US

Rolling 10-year periods. Per cent



Soruce: Ibbotson Associates og Datastream

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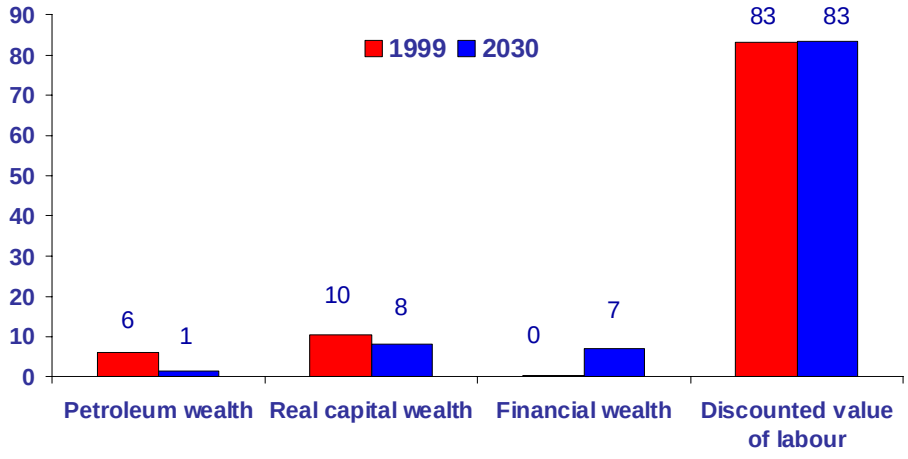
10. Norway's national wealth

Per cent of total wealth



Source: Long-Term Programme 2002-2005

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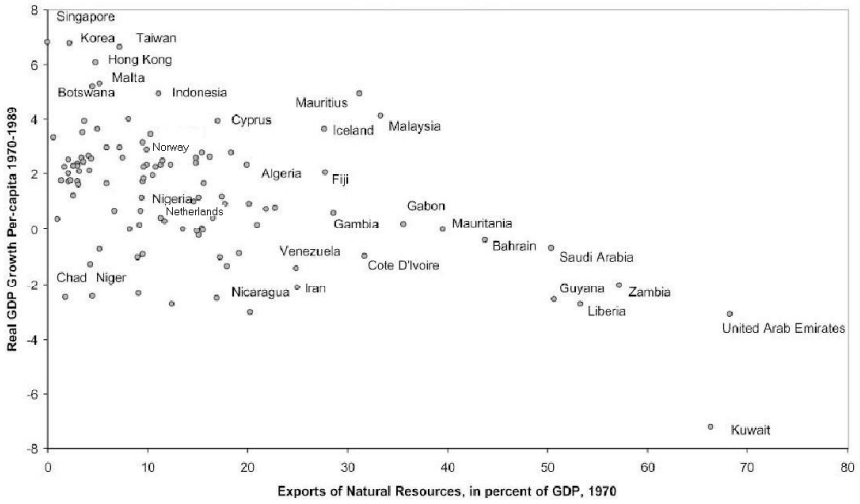
11. ”The resource curse”



Source: J.D. Sachs & A.M. Warner (2001)

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12. The case of Venezuela