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**IS THERE A NATURAL
RESOURCE CURSE?**

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Is there a resource curse?

The effects of a growing Government Petroleum Fund in Norway on attitudes towards the size of the public sector, wages, and work

Empirical research shows that natural resource abundant countries tend to grow slower than other countries. In this respect, Norway is often described as an exception. However, the recent slowdown in GDP-growth and a contraction of manufacturing activity may be indications of the resource curse also in this country. Our objective is to investigate the impact of a growing Government Petroleum Fund on people's attitudes towards the public sector, the need for moderate wage settlements, and work. Changes in attitudes may make the tradable sector less competitive and be detrimental to economic growth.

Our results indicate a weak relationship between having a perception of large petroleum wealth and increased expectations towards what the public sector should provide. The results are not supportive for the hypothesis that a large petroleum fund leads to a neglect of the need for efficiency improvements in the public sector. However, efficiency schemes are likely to be met with resistance among local government- and county district employees. Although people are generally positive towards moderate wage settlements, public sector employees are less positive than private sector employees. Finally, we do not find support for the hypothesis that a large petroleum fund makes people want to work less.

1. Introduction

This article summarises the results of the survey: "Attitudes towards the use of petroleum revenues", conducted as part of Statistics Norway's Omnibus survey 1, 2003. It is based on the two diploma theses at BI Norwegian School of Management: "*The Petroleum Fund - a Sarepta's jar? An analysis of the Norwegian population's expectations towards the public sector and attitudes towards the wage determination process.*" (Hovde and Narasimhan, 2003) and "*The impact of the Norwegian Government Petroleum Fund on the labour market in Norway*" (Haugsten, Melbye and Vatne, 2003)* .

* The research for the two diploma theses and this article was supported by the Norwegian Confederation of Trade Unions (LO), the Confederation of Norwegian Business and Industry (NHO), the Employers' Association NAVO and Statistics Norway.

The curse of natural resources is the observation that resource-rich countries tend to grow slower than other countries. Research has shown that high resource intensity tends to correlate inversely with economic growth. Natural resources have been classified as one of the ten most robust variables in empirical studies on economic growth (Sachs and Warner, 2001).

In the economic literature there is no universally accepted theory to explain the natural resource curse. Most explanations are based on the idea that the extraction of natural resources crowds out other activities, which in turn affects growth. Sachs and Warner (2001) show that resource abundance tends to make the export sector uncompetitive, which in turn have a negative impact on exports and growth. According to Gylfason (2001a) other important transmission channels from natural resource abundance to poor economic growth are rent-seeking and corruption, too little emphasis on savings and investment, a neglect of education and a false sense of security. Sachs and Warner (2001) also mention reduced entrepreneurial activity and innovation. On the basis of the above, the purpose of our survey is to investigate whether additional transmission mechanisms can be described through changes in attitudes towards public spending and efficiency improvements in the public sector, towards the importance of moderate wage settlements, and towards work.

Closely related to the resource curse concept is the Dutch disease. After the discovery of natural gas in Groningen in the Netherlands 1959, the increase in gas exports triggered an appreciation of the Dutch guilder, which in turn hurt other export industries. Moreover, on the basis of large export revenues, vast welfare institutions were established along with increased government spending in general. The result was inflation and later a tough process of cost reductions, as the improved welfare arrangements proved unsustainable in the long run.

Different aspects of the Dutch disease have been described in the economic literature. According to Røed Larsen (2004) the essence of this literature is that the Dutch disease is linked to three major effects. First, *the factor movement effect*, i.e. the process of reallocation of labour and capital from other activities to resource extraction. It is assumed that in this process wages are bid up, causing the tradable sector to lose competitiveness. Second, *the spending effect* arising from increased aggregate demand caused by the revenues from the natural resource industry. If the economy is at capacity, this will cause excess demand and inflation. Moreover, if the revenues are spent domestically, a nominal appreciation of the currency will follow and the competitiveness of the non-resource tradable sector will be hurt. Finally, *the spillover-loss effect* relating to the loss of positive externalities associated with a reduced manufacturing sector.

There are many examples of countries that have not managed to administer sudden increases in wealth in a productive manner. One example is Spain in the 17th century. After the colonisation of Latin America, Spain brought home large quantities of gold and silver. The new wealth was spent mostly on war and luxury goods, and little was invested in economic activity. Nations that did not experience such rapid increases in wealth developed more productive working habits, seeking more efficient ways to get things done. When the ample access of gold and silver ceased, the Spanish throne had gotten highly indebted and the country went into a long period of decline.

The OPEC-countries provide another example. In the period 1965-1998, negative average

per capita growth rates were found in six major OPEC countries¹ (Gylfason, 2001b). For OPEC as a whole, GNP per capita on average decreased by 1.3% per year during this period, as compared to a 2.2% average per capita growth in all lower- and medium-income countries.

The above examples illustrate why the discovery of natural resources is often referred to as “a mixed blessing”. Natural resource abundance creates many opportunities, but also implies risks of de-industrialisation and economic decline. The examples highlight the importance of having well-designed policies to extract the benefits, while minimising these risks. In this respect, Norway is often mentioned as a success story.

2. The Norwegian experience

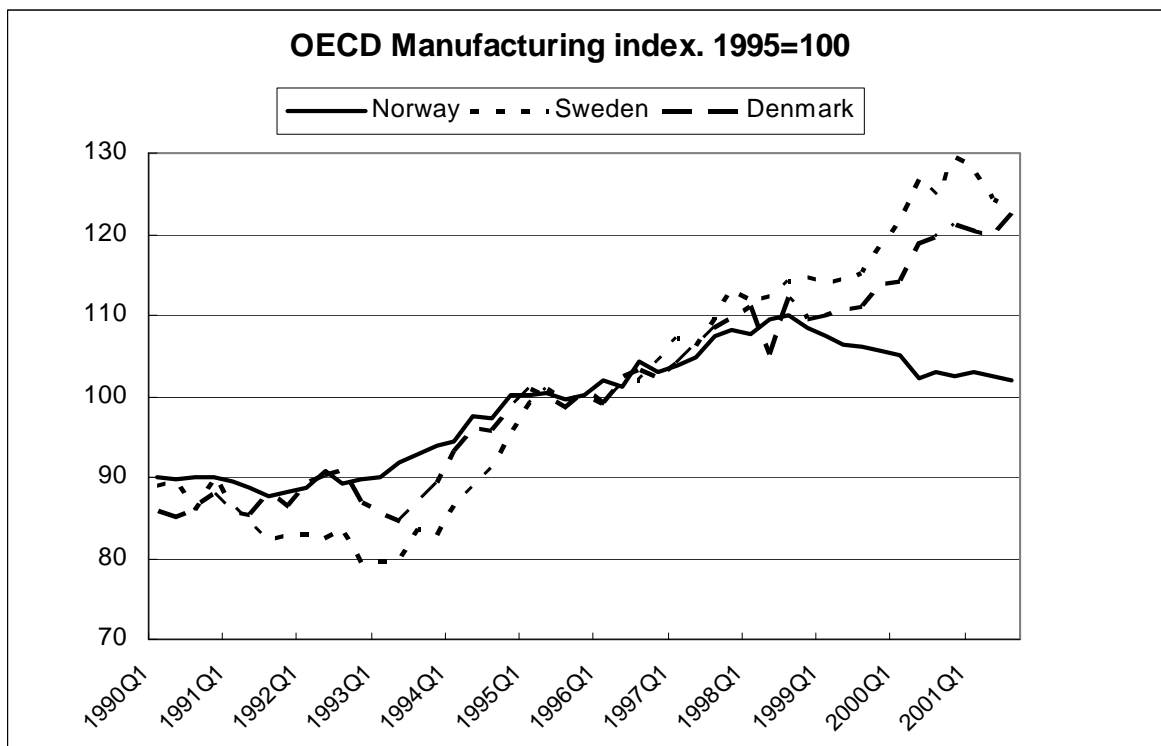
Since the first oil fields were discovered in 1969, Norway has experienced significant economic growth. The last four years Norway has been ranked as the number-one-country on the United Nation’s Human Development Index (UNDP, Human Development Report, 2001-2004). This index is based on different indicators reflecting economic-, social- and cultural conditions. Among others, “human development” is measured in terms of life expectancy, adult literacy, per capita GDP and education.

In the literature on economic growth, Norway is often described as having escaped both the resource curse and the Dutch disease. An important reason for Norway’s success has been a strong democratic- and egalitarian tradition. Also, since the discovery of oil, one of the main goals of the Norwegian government has been to ensure that the revenues from the petroleum industry benefit society at large. According to Røed Larsen (2004), Norway managed to escape the natural resource curse by implementing preventive policies towards the management of the oil revenues. One example is the establishment of the Government Petroleum Fund in 1990. The effect of these policies was a limitation of the three effects associated with the Dutch disease.

Despite Norway’s excellent economic- and social record, some features of the Norwegian economy suggest weak symptoms of the resource curse and the Dutch disease. First, Gylfason (2001b) finds that Norway’s exports relative to GDP have been stagnant since the 1960’s. As oil exports have increased substantially during this period, this indicates that Norway’s oil exports have crowded out its non-oil exports. Second, there is the contraction of manufacturing activity in recent years. As shown in Figure 1, production in the manufacturing sector in Norway fell in the period 1998-2001, in contrast to the development in Denmark and Sweden. Employment in the manufacturing sector in Norway, as measured by man labour years, has also been falling since 1998 (Statistics Norway, National Accounts, 2004). Finally, GDP growth has decelerated in recent years. From 1997 to 2003, annual volume growth in GDP in mainland Norway declined from 4.9% to 0.7%.

¹ The six OPEC countries were Iran, Iraq, Kuwait, Qatar, Libya and Venezuela.

Figure 1: OECD Manufacturing index. 1995=100. Seasonally adjusted. Source: OECD and Norges Bank



It can be argued that the development in manufacturing, exports, and GDP are indications of the resource curse and the Dutch disease. In our study, we look more closely at the ways in which attitudes may have affected the tradable sector. Our main hypothesis is that a growing Government Petroleum Fund has caused a change in attitudes and expectations, which in turn has hurt the tradable sector and economic growth.

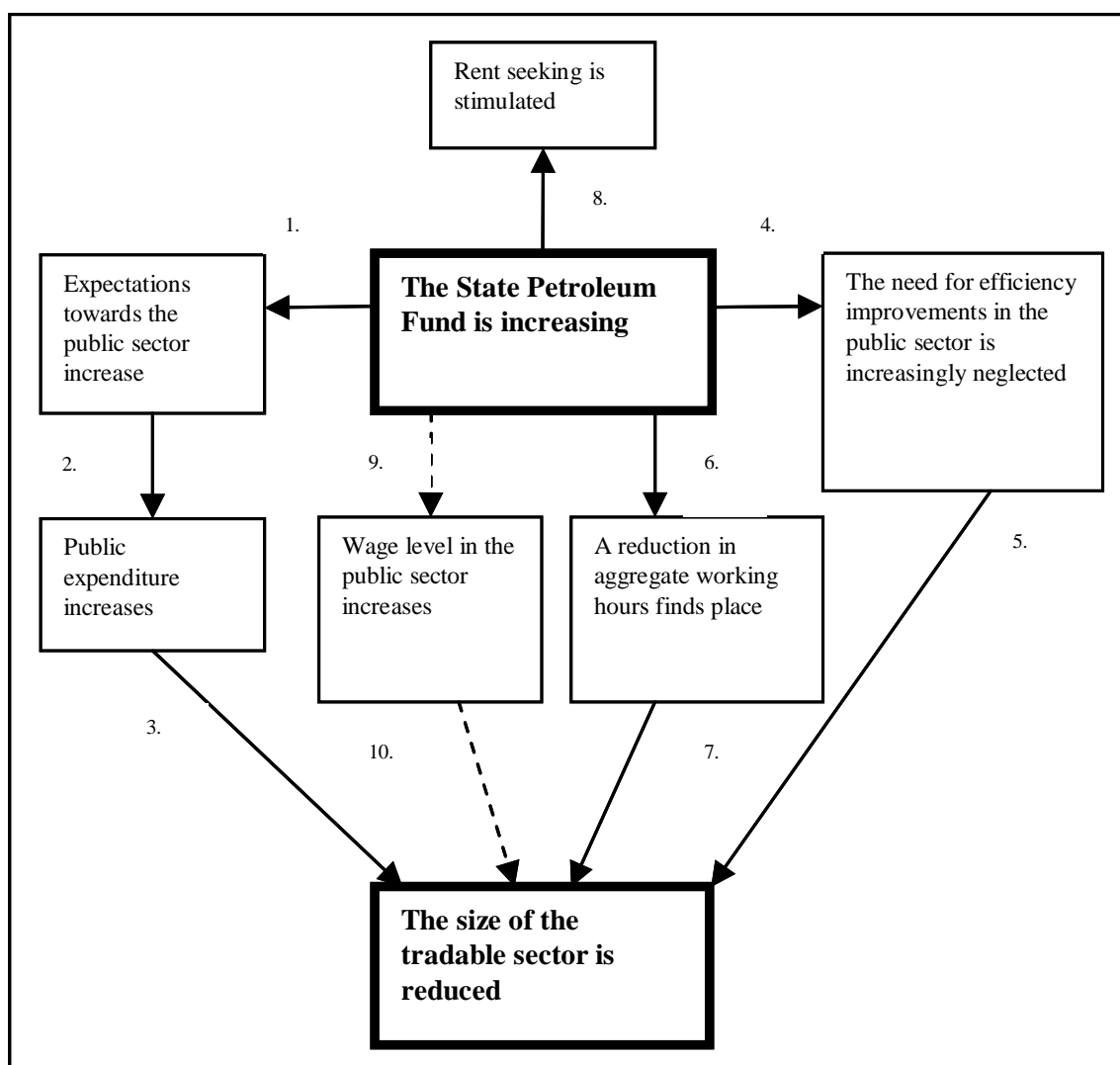
3. Four issues

Given Norway's outstanding ratings when it comes to economic- and social prosperity, one would expect the average Norwegian to be reasonably happy and satisfied with his / her life and material well-being. However, issues such as unsatisfactory health care, poor conditions in schools and low wages in the public sector are often highlighted in the media. The fact that people living in one of the world's wealthiest countries are experiencing such discontent suggests that our expectations towards economic- and social welfare have increased beyond what is delivered. An important question is whether a growing Government Petroleum Fund has contributed to such expectations.

The main issues addressed in our survey are based on the model: "Possible consequences of large petroleum revenues" (Isachsen, 2002:20). The model describes various transmission

mechanisms from a growing petroleum fund to a declining tradable sector. According to the model, large oil revenues imply increased expectations towards the public sector, less emphasis on efficiency improvements in the public sector, reduced aggregate working hours, and increased incentives to rent seeking, see Figure 2. The model has been enlarged to include the effect on the wage level in the public sector. This is shown by the stipulated arrow 9 in the figure. According to the model, all the above phenomena are inversely related with the size of the tradable sector.

Figure 2. "Possible consequences of large petroleum revenues". Source: Isachsen, 2002.



As shown in Figure 2, a large petroleum fund is thought to increase people's expectations towards the public sector. This may include increased demand for health care services, improvements in the educational system, reductions in the age of retirement, and tax reductions. Increased demand will bid up wages and prices. Manufacturing activities will be crowded out by both a reallocation of labour and higher labour costs.

Consumption expenditure of the general government has been increasing steadily since the early 1970s. The same is true for employment as measured by man labour years. Even

though this trend in employment has shown signs of reversion since 2001, employment in the public sector is still high. The aim of the fiscal spending rule, which was introduced in 2001, was to limit the use of oil revenues over the fiscal budget. The rule states that only the expected real return on the petroleum fund can be spent over the fiscal budget each year. As the annual real return on the fund's assets is estimated to be 4%, the rule allows using this share of the fund's value (at the beginning of the year). However, in recent years Norway has spent more than the rule indicates. Public spending in 2003 was about 50% larger than prescribed. The same seems to be true for 2004.

According to our model, the increase in government expenditure and -employment are worrisome. It is possible that the rise in public expenditure is due to increased expectations towards what the public sector should provide. The hypothesis is that a large and visible petroleum fund has created a perception that the country is very wealthy, which in turn has caused the demands of the public to increase. Thus, *our first question is whether a growing petroleum fund has increased people's expectations towards the public sector.*

The second issue is whether a growing petroleum fund has led to a neglect of the need for efficiency improvements in the public sector. The logic is that a perception of large wealth may instil a false sense of security, which causes people to believe that hard decisions can be deferred. As shown in Figure 2, less focus on efficiency improvements in the public sector has a negative effect on the tradable sector. With less focus on efficiency, increased demand for public sector services will cause the public sector to increase in size. Again, labour costs will be driven up and the tradable sector will lose competitiveness.

The third question arises from the notion that the manufacturing sector, in recent years, may have lost its position as the wage leader in the wage determination process. In accordance with "the Norwegian model of inflation" (Aukrust, 1977), assuming a fixed exchange rate, productivity increases in the tradable sector, together with expected increases in world market prices, have usually been considered a ceiling for increases in the wage rates.

Higher labour costs, assuming a fixed exchange rate, have a negative effect on the tradable sector. As output prices in this sector are largely determined by the world market, labour cost increases cannot easily be passed on to consumers. Firms operating in this sector must absorb the cost increases in the form of reduced margins. The tradable sector therefore has strong incentives for keeping wage increases moderate. The public sector does not face equally strong incentives. As this sector does not face international competition, cost increases can be brought forward to the consumers or be paid by government revenue, including revenue from the oil sector.

In recent years labour cost growth in Norway has been substantial. Since 1997, the annual growth rate in hourly wages in the manufacturing sector has been higher in Norway than in trading partner countries (NOU 2004:10). Wages in the public sector has also increased considerably, and in 2002 and 2003 they exceeded that of the manufacturing sector (NOU 2004:10). On this basis we ask *whether the position of the tradable sector as the wage leader has been weakened and whether such a change has been caused by a change in attitudes due to a growing petroleum fund.*

According to our model, a large petroleum fund changes people's attitudes towards work. The altered attitudes are thought to reduce the level of aggregate working hours, which in turn affect the tradable sector negatively and hurt economic growth.

Average working hours in Norway have been falling since the 1960s (Roland, 2000). The

strongest reduction took place in the 1960s and 1970s when annual working hours fell by 30%. From 1972 to 2003, the average working week has been reduced from 39.6 to 34.6 hours. Working hours are also lower in Norway than in most other countries. On this basis Norwegians are often described as lazy. However, the short working hours may not necessarily constitute a problem. Data from OECD indicate that although average working hours are low, a large share of the population is employed. In addition, OECD finds that productivity in Norway is about 10% higher than in other OECD countries. According to Professor G. Schjelderup (Aftenposten, 01.08.04) one explanation for the preference for shorter working days may be the generally high income level in Norway.

Berg (1998) finds that attitudes towards work have been changing in Norway. Specifically, her survey indicates that people wanted to spend less time on work and more time on family, friends and leisure activities in 1997 as compared to 1989. Moreover, the share of people preferring a reduction in working hours had increased from 26% to 44%. Women, elderly and people with small children more often preferred shorter working hours than others. In addition, the preference for reduced working hours was shown to be positively related to income level.

Postmaterialist theory can be used to explain changes in attitudes towards work (see Berg, 1998). According to this theory, a gradual change in basic values finds place in advanced industrial societies. The hypothesis is that values in Western countries have been shifting from having a materialist emphasis towards having a postmaterialist one. By this it is meant that values have been changing from giving a high priority to physical sustenance and safety, towards a stronger emphasis on belonging, self-expression and quality of life (Inglehart, 1990:66). Such a change in basic values may influence the relative value that people assign to leisure as compared to work.

One could ask whether economic growth arising from productivity increases alone and economic growth arising from natural resources affect attitudes differently. Economic growth arising from ongoing production does not imply economic security in the same way as large petroleum revenues put in an oil fund. In the first case, people do not have any “laurels to rest on”, but are forced to keep innovating and producing. In the latter case, assuming a significant share of the fund is saved for future generations, a large petroleum fund implies economic safety for the future.

Since the 1970s, Norway has experienced substantial economic growth. The establishment of welfare institutions and the general increase in living standards, together with the existence of a large petroleum fund, all speak for a turn towards postmaterialist values in Norway. On this basis, *our fourth question is whether large petroleum revenues have made people want to work less.*

BOX 1: The survey and the analysis of the data

The data were collected through the survey “Attitudes towards the use of petroleum revenues”, conducted as part of the Statistics Norway’s Omnibus survey 1, 2003. The survey was carried out via telephone interviews by the Statistics Norway and resulted in a random sample counting 1331 people (2000 people were contacted). The respondents were asked to report their feelings regarding various statements using a five-point scale, where the categories ranged from “strongly agree” to “strongly disagree”. The respondents could also

give the answers “don’t know” and “prefer not to answer”. However, we do not include these answers in the analysis.

The survey provided data regarding people’s attitudes. Important assumptions for many statistical techniques, such as a large sample size, randomness, and independence of observations are not violated. However, we find that the data violate the assumption of normality and, for some independent variables, the assumption of homogeneity of variance.

We base our analysis mainly on descriptive statistics, crosstabulation and analyses of differences in means between independent variables. Post-hoc comparisons are used to find out where significant differences occur. In the following, only differences between mean scores of different independent variables that are significant either at the 0,05- or 0,01 level will be reported.

4. Results

The main results of the survey in relation to our four questions and their implications for the tradable sector are summarised in Table 1.

Table 1. The effects of a growing Government Petroleum Fund on attitudes. Implications for the tradable sector

Questions	Main findings (whole population)	Comments	Implications for the tradable sector
Does a growing petroleum fund increase people’s expectations towards the public sector?	Yes (a weak relationship).	The results suggest a weak relationship between having a perception of large petroleum wealth / how much of it can be spent, and thinking that there is room for both increased public spending and tax reductions. A large share of the population also takes the view that the government can afford a reduction in the age of retirement on the basis of the large petroleum fund.	Increased demands for public sector services may bid up the price level and wages. The tradable sector may be affected negatively by a reallocation of labour and higher labour costs.
Does an increasing petroleum fund lead to a neglect of the need for efficiency improvements in the public sector?	No.	Local government- and county district employees are more often negative towards efficiency improvements in the public sector than other employment groups.	Negative attitudes among local government- and county district employees towards efficiency improvements may cause the public sector to increase in size. The tradable sector may be hurt by a reallocation of labour and higher labour costs.
Does a growing petroleum fund increase people’s demands for higher wages?	No.	Local- and central government employees are less positive towards moderate wage settlements than others.	Increased demands for higher wages among public sector employees may weaken the position of the tradable sector as the wage leader. The result may be a strong growth in labour costs, which may reduce tradable sector’s profitability and competitiveness.
Does a growing	No.	–	The tradable sector does not seem to be

4.1 Attitudes and expectations towards the public sector

We asked whether a growing petroleum fund has increased people's expectations towards the public sector. In recent years, the share of people with the opinion that domestic social problems can be solved by increased use of oil revenues has increased. According to a survey conducted in 2003, more than half of the population thinks it is room for both increased use of petroleum revenues and significant tax reductions (Aardal, 2003:56). Our results are consistent with this finding and show that a majority of the Norwegian population (58.4%) are of the opinion that the government can afford both increased public spending and tax reductions. Our results also show a strong support (72.2%) for either keeping or increasing the present use of the fund. This can be interpreted in different ways.

First, for many people it may be difficult to understand why some, or even all, of the oil revenues should not be spent to solve domestic social problems. Second, in some years the fund yields a negative return. If negative returns are believed to reduce the future value of the fund, people will have a stronger preference for increasing its present use. Third, the fiscal spending rule has been violated on several occasions. This reduces its credibility and may create an increased pressure for permanently extending its limits.

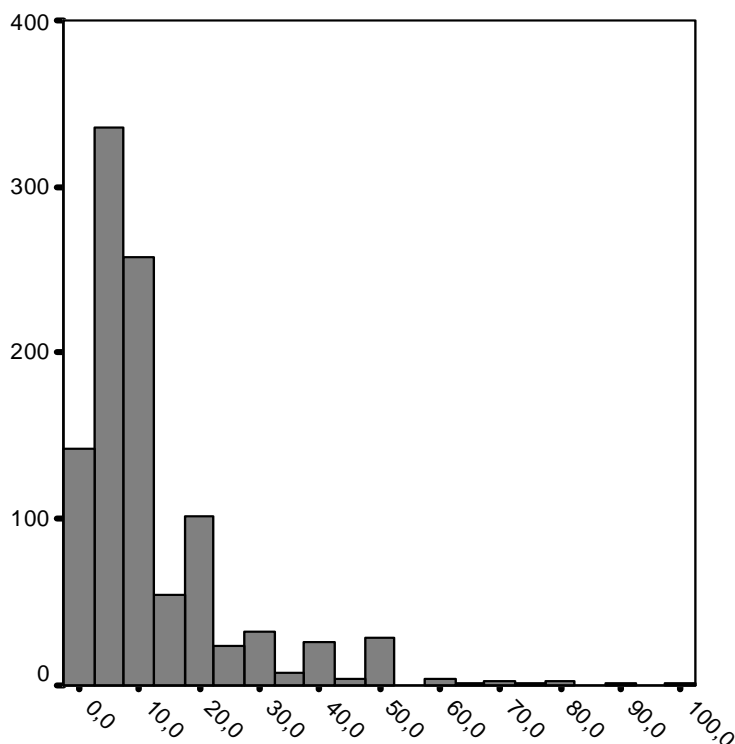
Finally, we find that a large share of the population (41.3%) takes the view that because of the petroleum wealth, Norway can afford a reduction in the retirement age. Together, the above results suggest that most people are of the opinion that the government is wealthy.

The majority of the respondents had poor knowledge of the value of the petroleum fund and about the fiscal spending rule. At the end of 2002, the market value of the fund's assets was NOK 609 billion. When asked about this value, less than half of the respondents chose the correct alternative and about 50% overestimated its size. However, those answering correctly still constituted the largest group. Men and women differed in terms of knowledge about the fund's size. While 33.9% of the women chose the correct value, the percentage among men was 50.6%.

As much as 77% overestimated the percentage of the fund's value that can be spent each year. Figure 3 shows a histogram of the answers with intervals counting 5 percentage points. A large proportion of the respondents' answers are found in the first three intervals.

Figure 3. "What percentage of the petroleum fund can be spent over the fiscal budget each year?"

Histograms showing the distribution of answers.



Knowledge about the fund's value and the fiscal spending rule does not seem to strongly affect people's opinions regarding the use of the fund. Logically enough, a larger proportion of those overestimating the allowed percentage to be spent each year (61.7%), as compared to those underestimating it or answering the correct percentage (48.3%), were of the opinion that the government can afford both increased public spending and tax reductions.

Those respondents giving the highest value to the fund differed from the rest by more often strongly agreeing with the proposition that there is room for both reduced taxes and increased public spending (41.3% in this group strongly agreed with this statement, while for the other groups the corresponding percentages ranged from 20.5 to 30.3). Although not statistically significant, the result indicates that having a perception of, in this case, immense wealth (NOK 1800 billion), may alter the strength of people's preferences regarding how much the government can afford in terms of tax reductions and increased public expenditure.

Although weak, the results suggest a possible relationship between having a perception of large wealth and increased expectations towards what the public sector should provide. As such, the results indicate that mechanism 1 in our model (see Figure 2) to some extent is present in the Norwegian economy.

We find interesting differences between age groups regarding attitudes towards the use of the petroleum revenues and public spending. People in the age group 16-24 more often than others are of the opinion that the government can afford both increased public spending and tax reductions. A significant difference was found between this age group and the age group 45-66. This result can be interpreted in several ways. One possible explanation is that the perception of wealth is more prominent among young people, as they have not experienced poverty and times of war. As such, this group may be more inclined to believe that the state is rich and that increased spending and tax reductions can be afforded by the government. However, people in the 16-24 age group also more often than others stated that the government spends too much of the petroleum fund. The two results to some extent indicate

inconsistency in answers. On the other hand, they may also suggest that people in this age group want to have it both ways. They may want the government to increase public spending, but also to set aside funds for the benefit of future generations. Alternatively, the result may imply that young people view the state's wealth to be large enough to cover increased public spending without having to spend too much of the petroleum fund.

The consequences for the tradable sector of the above findings may be harmful. Assuming the demands of the public are met, public sector expenditure will rise (mechanism 2 in our model). The subsequent increase in labour demand in this sector will bid up wages and the price level. Assuming full employment, the tradable sector will be hurt by both a reallocation of labour and higher labour costs (mechanism 3).

We observe that education may affect people's attitudes towards the size of the public sector. People with higher education find less room for both increased public spending and tax reductions.

4.2 Attitudes towards the need for efficiency improvements in the public sector

If resource consumption per user in the health care sector is to increase at the same pace as in the 1990s, the number of employees in the public sector will rise dramatically. The corresponding increase in labour demand will bid up the wage level and hurt the tradable sector. One way of maintaining the present supply of public sector services without such a reallocation taking place is to improve the efficiency of the public sector. Does a growing petroleum fund make people neglect the need for modernisation in the public sector? Our results revealed that people generally are positive towards improving efficiency in this sector. A majority (59.1%) answered that increasing efficiency is a better way of improving the public sector than granting more funds. A large share (58.4%) also was of the opinion that one should attempt to improve public sector efficiency even if the number of employees were to be reduced. Even when the respondents were reminded of Norway's large petroleum wealth, the majority were still positive towards efficiency improvements. When asked whether it is equally important for Norway to increase efficiency in the public sector as for countries without petroleum wealth, as much as 86% answered in the affirmative. Our findings are not supportive of the hypothesis that a large petroleum fund has a negative effect on people's attitudes towards efficiency improvements in the public sector.

The strong support for modernisation does not correspond with what is often presented in the media. One explanation may be that the stories often presented do not reflect the opinion of the public in general. While articles about successful rationalisation schemes are rare, focus is more often on hospitals lacking resources to carry out basic tasks. Thus, we may be left with the impression that most people think granting more funds is the only solution to problems in the public sector.

Our results indicate, however, that efficiency programmes are likely to be met with resistance among public sector employees. To assess whether attitudes towards modernisation are affected by employment, the subjects were divided into five groups based on ownership structure at their work place:

1. private company
2. limited company, organisation or the like

3. local government
4. county district authority
5. central government

We find that local government employees more often than people employed in private- and limited companies are of the opinion that improvements in the public sector depend primarily on granting more funds. In nursing homes, which usually are run by local government, the objective may involve treating as many patients as possible. However, as “treating” a patient may include giving comfort or simply spending time with him or her, it is not always a well-defined concept. Thus, for people working in a nursing home, larger grants may seem as the only way to improve the public sector. In comparison, people employed in the private sector may be of the opinion that improving efficiency is the best thing to do.

The results also reveal that local government employees and central government employees have different opinions regarding modernisation. Among local government employees 47.8% considered granting more funds to be the best solution to improve public services. For central government employees the percentage was 26.4. Local authorities have difficulties in understanding how their tasks can be performed more efficiently. However, state employees being more aware of the fact that funds available are limited, are more inclined to accept increased efficiency as a means to increase production.

Furthermore, regarding efficiency improvements coming at the expense of the number of people employed, we find that people employed in local governments and in the county districts were more negative towards efficiency improvements than other employment groups. 53.5% and 46.7% of local government- and county district employed respectively were of the opinion that keeping jobs in the public sector is more important than improving efficiency. For those employed in private- and limited companies, the percentages were 26.9 and 33.9. For central government employees, the percentage was 29.8. Thus, mechanism 4 in our model to some degree is present in Norway.

The results regarding local government- and county district employees are worrying. As it is widely recognised that successful implementation of a rationalisation programme depends strongly on support from those directly affected by it, the weak support for efficiency improvements among these groups may cause the public sector to increase in size (assuming increased demand for public sector services). Again, this may be negative for the tradable sector (mechanism 5 in Figure 2).

4.3 Attitudes towards moderate wage settlements

Will a large petroleum fund affects people’s attitudes towards the importance of moderate wage settlements? The survey showed that people generally (81.6%) support the proposition of not increasing the wage level in Norway above that of our trading partners. Furthermore, a majority disagreed (59.4%) with the proposition that, as the state has become richer, public sector employees should receive higher wages. However, about 65% were positive towards using some of the oil wealth to increase wages for lower-paid occupations in the public sector.

Local government employees are less supportive of the proposition that wage increases

should not be higher in Norway than in trading partner countries. The results also indicate that local- and central government employees more often than people employed in private- and limited companies are of the opinion that public sector employees should receive higher wages on the basis of the large oil wealth. Finally, local government employees more often than others take the view that some of the oil wealth should be used to increase wages for lower-paid occupations in the public sector. Combining the above results implies that although people generally are positive towards moderate wage increases, local- and central government employees tend to view things differently. Thus, there is some support for mechanism 9 in our model (see Figure 2).

A growing support for higher wages among public sector employees may strengthen the position of the public sector as the wage leader. As the public sector does not face equally strong incentives as the tradable sector for keeping wage increases moderate, the risk for large wage increases will be higher. A larger labour cost growth in the manufacturing sector in Norway than in trading partner countries, assuming the exchange rate is fixed, will reduce this sector's profitability and competitiveness (mechanism 10 in our model).

4.4 Attitudes towards work

We asked whether a large petroleum fund has changed people's attitudes towards work. As much as 73% stated that they would definitely not consider reducing total working hours and earning correspondingly less. Although this result does not provide answers as to whether a large petroleum fund has altered people's attitudes towards work, it suggests that mechanism 6 in our model is not present in the Norwegian economy. The result is interesting as it to some extent contrasts the postmaterialist hypothesis arguing that material wellbeing and economic security cause people to value work less and leisure more. Our results indicate, however, that people in the age group 25-44 (30.4%) more often than people in the age group 16-24 (14.7%) would definitely reduce their working time, or that they would consider doing so. One possible explanation is that people in the higher age group more often have small children and family responsibilities. Moreover, we find that support for reductions in working time tends to increase with gross income, although significant differences were found only between the income group "NOK 700.000 and more" and each of the following: "NOK 0-99.000" and "NOK 100.000-149.000". Similarly, our results indicate that the preference for working less tends to increase with normal weekly working time.

As the trend of declining average weekly working hours has been flattening out over the last twenty years, the strong support for not reducing total working hours may indicate that average working time has reached a level that most people are comfortable with. This hypothesis also corresponds to the large share of women that was negative towards reduced working time.

5. Conclusions

The present work provides interesting findings regarding the mechanisms in our model.

- First, we find a weak relationship between having a perception of large petroleum wealth and increased expectations towards the public sector. A large share of the population is also of the opinion that reductions in the age of retirement can be afforded on the basis of large oil wealth.

- Second, the results indicate that although people in general are positive towards efficiency improvements in the public sector, local government- and county district employees are more often negative than other employment groups.
- Furthermore, while people generally have a positive attitude towards moderate wage settlements, local- and central government employees are less positive than people employed in the private sector.
- Finally, we find no support for the fact that a large petroleum wealth make people want to work less.

The implications of our findings for the tradable sector are worrisome. Increased expectations towards the public sector, negative attitudes towards modernisation among local government- and county district employees and increased demands for higher wages among local- and central government employees may all make the tradable sector less competitive over time. Assuming that the higher demands for public sector services are met, public expenditure and the demand for labour in the public sector will increase. The resulting increase in wages and prices in the public sector will cause this sector to increase in size, and the manufacturing sector will be hurt by both a reallocation of labour and reduced profitability. The same is true in the case of a neglect of the need for efficiency improvements in the public sector. Finally, a weakened position of the tradable sector as the wage leader may increase the risk for high wage increases. A higher wage growth in Norway than among our trading partners will reduce the competitiveness of the tradable sector.

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