

The Norwegian petroleum experience as an example?

Ole Gunnar Austvik¹

Professor, BI Norwegian Business School
Professor, Norwegian Institute of International Affairs
(NUPI)

1. Introduction

More countries can become producers of oil and gas as the shale oil and gas revolution spreads. The question of how to manage, control and benefit from the new activities will become important to each of them. This article discusses how Norway as a newcomer to the industry in the 1970s, in a unique government - business mixture, succeeded to build a competitive national oil and gas industry in only a couple of decades. The Norwegian state acted with a strong hand as soon as it was clear that reserves were large and extractable. With industrial and market maturity, changing oil prices and a more liberal international economic regime the model changed dynamically from strongly interventionist to a more regulative one. However, the state remained at the helm to maintain political control and to collect most of the economic rent. As the biggest capitalist in the sector, the Norwegian state now possesses the world's largest Sovereign Wealth Fund (the "Petroleum Fund"), worth almost one trillion U.S. dollars. Although no country should fully copy the experience of another, the Norwegian petroleum experience may provide some useful background for other newcomers wanting to maintain political control and reach socioeconomic goals².

¹ Ole Gunnar Austvik has a doctoral degree in political science and a master degree in economics from the University of Oslo. He also holds a MPA degree in political economy from Harvard Kennedy School, U.S.A. Prof. Austvik has written numerous articles and books within the fields of international political economy, petroleum economics and European integration. Web: www.oga.no.

² Austvik 2012 provides a theory-based discussion of the shifting roles of the Norwegian state as landlord and entrepreneur in the petroleum sector. Detailed facts and figures about Norwegian petroleum activities are provided annually in MPE annual

2. Establishment of the Norwegian Petroleum Industry

Initially the prospects for Norway to become a petroleum producer were bleak. In 1958, the Norwegian geological survey (NGU) stated in a letter to the Ministry of Foreign Affairs (MFA) that it was impossible that the Norwegian Continental Shelf (NCS) could contain any "oil, coal or sulphur" at all. Together with low oil prices at the time, this perception contributed to a limited interest from the international oil companies in the 1960s.

Exploration efforts accordingly started with rather liberal conditions for companies after the first round of concessions in 1965³. In the second concession round in 1969, the state put stricter regulations into effect in order to secure economic interests and to support the Norwegian supply industry and labor interests (Rudsar 1998, 22). After it was anticipated that production would

"Statoil was to be the most important instrument for the development of a Norwegian oil industry."

become profitable, especially, after the discovery of the Ekofisk field in 1969, political ambitions for national control were however strengthened. It was agreed across party lines that oil revenues, and in particular the economic rent that was expected, should "benefit the entire nation". The vision and goals for the establishment of an

³ The Danish state gave, based on the same type of perceptions of lack of resources in Denmark, the rights on her continental shelf and mainland to A.P. Møller in 1963 for 50 years (Hanisch and Nerheim 1992, 14; 469).

independent Norwegian petroleum administration and industry were expressed in the Storting (the Parliament) in 1972, later known as the "10 oil commandments":

"On the basis of the government's principle that a petroleum policy should be developed with a view to exploiting the natural resources on the Norwegian continental shelf in a way which benefits the whole community, the committee would concur that this means:

1. *That national management and control must be secured over all operations on the Norwegian continental shelf.*
2. *That petroleum discoveries are exploited in a way which minimizes Norway's dependence on others for crude oil supplies.*
3. *That new industrial activities should be developed on the basis of petroleum.*
4. *That development of an oil industry must take the necessary account of existing industrial operations and of protecting nature and the environment.*
5. *That flaring of usable gas on the Norwegian continental shelf must not be accepted except for brief periods of testing.*
6. *That petroleum from the Norwegian continental shelf must, as a main rule, be landed in Norway with the exception of individual cases where national policy concerns call for a different solution.*
7. *That the state becomes involved at all appropriate levels, and contributes to a coordination of national interests in the Norwegian petroleum industry as well as the creation of an integrated Norwegian petroleum community which sets its sights both nationally and internationally.*
8. *That a state oil company be established to take care of the state's commercial interests and to maintain suitable collaboration with domestic and international petroleum interests.*
9. *That a pattern of activity be selected north of the 62nd parallel [i.e., outside the North Sea] which satisfies the special policy concerns that apply in this region.*
10. *That Norwegian petroleum discoveries on a large scale could add new dimensions to Norway's foreign policy".⁴*

The state's own oil company, Statoil, was established upon this background by a unanimous Parliament decision. The company was to be an important actor in developing a national petro-industrial system. The Norwegian Petroleum Directorate (NPD) was established at the same time as a regulatory body under the Ministry of Industry, later the Ministry of Petroleum and Energy (MPE). Together with the development of international law of the seas since the 1960s, these visions put Norwegian sovereignty in the main seat.

⁴ Source: Stortingsmelding 1971; unofficial translation by the Norwegian Petroleum Directorate (NPD 2000).

Norwegian authorities had high political ambitions about controlling the industry and the international oil companies. The Norwegian referendum in 1972 not to join the European Economic Community (EEC) reinforced national energy policy efforts. The development was also influenced by the oil crises in 1973/74 and later in 1979/80. Firstly, the high prices lead to an industry that was far more profitable than previously expected. Secondly, the nationalization of the oil companies and the strong state involvement in member states of the Organization of Petroleum Exporting Countries (OPEC) reinforced the national and international acceptance of a strong state engagement. The continued associated membership in the International Energy Agency (IEA) from 1974 showed that Norway as a petroleum producer wanted to play an as independent role as possible within the Western community. This in-between position was later underlined when Norway started a careful interplay with OPEC with the goal of stabilizing oil prices in 1986. Strong state control of production levels and the new industry was a demonstration of national sovereignty, both towards consuming and producing nations. The Labor party, being the dominant political party after WWII, often placed their own party members in leading positions in the bureaucracy and state owned companies. Minister of Industry Finn Lied made his state secretary and party fellow Arve Johnsen Statoil's first director. Former Minister of Defense and leader of the resistance movement under WWII, Jens Christian Hauge, became the chairman of its board. The MFA was from the start important in making border treaties with countries, such as the United Kingdom and Denmark. Minister and lawyer Jens Evensen, also represented the Labor party, led the State's Oil Council ("Statens oljeråd") from 1965 and the Norwegian delegation in international negotiations about the law of the sea.

Tight links between Statoil, the bureaucracy and the government were established through the Labor party. Statoil was to be the most important instrument for the development of a Norwegian oil industry and a locomotive for the rest of the Norwegian industry. Statoil was to take care of the property right owner's (the state's) economic interests. Statoil and the system around the company were to be important instruments for the development and control of the entire Norwegian industrial sector. Hence, oil policy also became nation building. Some even argued that the interests of Statoil were synonymous with Norwegian national interests.

Already in 1972, without any competence at all, Statoil was awarded a 50% partnership in the transmission company Norpipe, established to transport oil from Ekofisk to Teesside in the UK and gas from Ekofisk to Emden in Germany. Statoil was also given huge shares of the most attractive fields, e.g. 50% of the Statfjord

field in 1973. The company was preferentially treated in several ways. The “carried interest” principle implied that Statoil did not pay the expenses accumulated in the exploration phase. These costs were to be covered by the other licensees. The “gliding scale” principle from 1974 implied that Statoil could increase its share of a license up to 60-80% when production came on stream.⁵ Norwegian companies were preferred as suppliers to the industry. Regional actors were active in promoting their industrial and local interests.

However, Norway needed the assistance of international companies’ competence, and also their capital. The internationals were invited as minority partners in most fields to acquire technology and knowledge to explore, drill, produce and sell oil and gas. After a period of infant industry protection Norwegian companies could gradually take over the roles of the internationals. For example, Mobil was replaced by Statoil in 1987 after 15 years as operator at the Statfjord field.

The government, represented by the MPE should approve all steps at all levels to promote both competition and cooperation such that the value of each license would be maximized (MPE annual). The State by the Ministry of Finance took all taxes (except for local property taxes), including a special tax on petroleum activities to capture most of the rent. By coupling with the international companies, an internationally competitive new industry was built in a relatively short time.

With lower profitability after 1986, however, as in many oil producing countries private companies become more important. The lowest oil prices since the first oil price shock in 1973/74 showed how vulnerable the oil and gas industry was to changes in this one single variable. There were also fewer large known fields to be developed, which brought unit costs up. The strong national control appeared as more difficult when big fields no longer dominated development activity, and oil prices and profitability were noticeably low.

Technological developments and the need for pressing costs renewed the interest in cooperation with international oil companies after the strong nationalization period. The big Condeep platforms from the 1970s and 1980s became out of date and too expensive. The costs on the NCS were higher than on the British shelf. Developments were moving towards more flexible and cheaper floating installations, sub-sea technology, horizontal drilling and gradually sub-sea installations.

The new situation changed the state’s political entrepreneurship. Lower profit margins made companies

stronger in relation to the state, but the situation also showed more clearly than before that the state and the companies had many interests in common. A general understanding of the need for more foreign technological competence evolved. The Norwegization policy led to employment, growth and competence in Norwegian companies and regions. However, the lower profit margins weakened the state’s power to require that the companies should also satisfy national (industrial policy) goals (Nerheim 1996).

On the other hand, it was difficult to lower costs in the short run. Investments were irreversible, organizations slow to change and political parties (or interest groups) resisted (Engen 2002, 158-201). Consequently, the industrial structural of the early 1990s looked much like the one from the 1970s and 1980s. The change in prices and the need for new production methods led to the

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search for new technological concepts and organizational models, new attitudes and new roles for politics and industry, both in and among the oil companies and in state agencies. Many of the solutions required more than the efforts of single companies. The government again took on the role of catalyst and coordinator in what from 1993 was known as the NORSOK (Norwegian shelf competitive position) cooperation.

The content of the role this time was to release and accommodate for industrial solutions in accordance with the interests of the state, oil and gas companies, the supply industry and the trade unions. NORSOK contributed to the introduction of new technology and organizational models. However, the process lost gradually much of its momentum (ibid. 291-311). The relations between the supply industry and the oil companies had changed. The supply industry increasingly took on sub-entreprises in projects, in contrast to the early phase when the oil companies controlled most of the details. The national enterprise, with Statoil in the main seat, was changed. Gradually into a new century, the state took on a more coordinating role towards the industry, and the oil companies became the main entrepreneurs for field

⁵ Only in 1992 and 1993 the carried interest and gliding scale principles were abolished for foreign companies.

developments and operations, while the supply industry increasingly became larger sub-entrepreneurs.

3. Gas and super-power rivalry

Due to its production potentials, market shares and the geographical localization of resources Norwegian petroleum policy was at an early point involved in international economic conflicts of interests and political currents. The importance of these factors became especially relevant for the European Community's (EC) gas market in the 1980s as the entire growth had to be covered by international trade, mostly between the EC and non-EC countries. At this time Norwegian gas exports were considered to face remarkable prospects. Unrest in the Middle East and the tripling of oil prices in 1979/80 raised European energy consuming nations' attention towards gas as a replacement for oil in their energy portfolio. Also, Dutch and British gas production was expected to be on decline and had to be replaced. The Cold War situation with the Soviet Union put political limitations on how much gas could be imported from the Russians. It was perceived as another "risky" petroleum source, alongside the Middle East. The situation led to competition between Continental and British buyers in their desire to purchase Norwegian gas.

This was an attractive situation for Norway. When the Statfjord contract eventually was signed with the consortium later in 1980, the price was set to \$5.50 per MMBTU equivalent to \$32 per barrel of oil (Aftenposten newspaper July 10, 1980). The crude oil parity prices were the highest ever reached on a worldwide basis (Estrada, Bergesen, Moe and Sydnes 1988, 215). Normally, prices were set below crude oil parity in order to penetrate markets. The argument from Statoil was that there would be no reason for Norway to increase gas production if profits were not increased, as compared to existing expectations.

The preference for Norway as a gas seller was surprisingly supported by an event resulting from the Cold War situation. In order to prevent Western European countries from completing a notable gas contract with Soviet Union in 1982, the U.S. introduced a ban on all American exports to firms supporting the project. To prevent it from being realized. The U.S. also boycotted European firms supplying equipment. President Reagan claimed that if Western Europe became too dependent on Soviet gas, there was a risk of pressure in a future political crisis if the Soviets turned off the taps. The U.S. urged Norway to increase her gas exports as a substitute for Soviet gas⁶. With the American embargo, and negotiations going on with the British to sell Sleipner gas

at high prices, the perception of being a preferred gas exporter in a seller's market was underlined as realistic in commercial and political circles in Norway.

James Allcock, at the time purchasing director in British Gas disapproved however so much the high price demands from Norway, that he asked whether or not "gold dust parity" would be the next claim (Refvem 2002). Algerian Sonatrach tried to pursue the same high pricing principles without much success. The high price policy was pursued until the fall of the Willoch government in 1986, without the signing of any gas contracts of significance. In addition to requiring a price premium on Norwegian gas compared to earlier, an "oil-option" policy was formulated in case buyers would not accept the terms (Austvik 1993:7). This policy stated that Norway preferred the production and selling of oil rather than gas, if high gas prices were not accepted.

The situation changed with weaker energy markets and diverging views among consuming nations about the political situation in the mid-1980s. The U.S. embargo of Soviet pipeline equipment was cancelled already in late 1982, but the American support for Norway as a preferred supplier remained. Politically, it was the British rejection of the Sleipner deal that turned the Norwegian picture upside down. After the commercial Sleipner partners agreed on terms in early 1984, the plan was supported by the British Department of Energy with minor changes. The Thatcher government however, rejected the whole deal in 1985, primarily for financial and industrial reasons⁷. With the British government's rejection of the Sleipner deal, the UK could not for a longer period be considered a growing market for Norwegian gas⁸. Thus, the only alternative to selling gas from the huge Troll field to the Continent was to delay production.

When the second government under Gro Harlem Brundtland (1986-89) adopted a form of market pricing in 1986, the Troll negotiations were eventually speeded up. The Troll agreement signaled a change in strategy adapted to a more realistic view on market and political situations. Now gas had to be sold on commercial terms at prices lower than its alternatives, including a downward revision of the terms for Statfjord gas sold in 1980. The Norwegian negotiating position was considerably weakened, and the final terms for the Troll contracts in 1986 marked a decisive step away from the price premium and oil-option policy. When entering the 1990s and EU integration processes, Norwegian gas policy was

7 For more details about the Sleipner process, see Stern 1986; Estrada, Bergesen, Moe and Sydnes 1988, 215-220; and Bartch 1999, 210-212.

8 Only when the Ormen Lange field came into production 22 years later, in 2007, Britain again became a growing market for Norwegian gas.

6 For further details about this conflict see Jentleson 1986; and Austvik 1992.

nevertheless still strongly politically controlled, in spite of the changed economic and political surroundings. Exogenous change and pressures on domestic policy led eventually to a policy change better adjusted to political and market realities than in the early 1980s.

4. European Union market liberalization

In the 1970s and 1980s oil production represented the fastest growing share of the Norwegian petroleum portfolio. However, gradually natural gas exports became important, as well⁹. Statoil was assigned the position as leader of the Gas Negotiating Committee (Gassforhandlingsutvalget, GFU) established in 1986, but had to share responsibility with the two other Norwegian companies, Hydro and Saga. In the early 1970s, each gas field was sold as one by the respective owners ("depletion" or "field" contracts from Ekofisk and Frigg). From 1977, Statoil negotiated alone on behalf of the licensees (Statfjord, Heimdal, Gullfaks, Sleipner and Troll). The GFU gained from 1986 responsibility for selling all Norwegian gas independently of who owned it.

The purpose of centralized gas sales was to maintain a strong market position in relation to European buyers who had organized themselves as a monopsony. In this phase the big transmission companies on the Continent (such as Ruhrgas, Gasunie, and Gaz de France) collaborated as buyers ("the consortium"). To prevent these companies (through their owners) sitting on both sides of the table in gas negotiations, foreign companies were not allowed to participate in the GFU. The view was that competition between companies operating on the Norwegian Shelf would lead to increased supply and a pressure towards lower gas prices. As the leader of the GFU, Statoil remained in a strong bargaining position vis-à-vis foreign buyers, but Hydro and Saga also increased their influence, and the MPE obtained more direct insight into and control of negotiations.

A gas Supply Committee (Forsyningsutvalget, FU) was in addition established in 1993, as a counseling body for the MPE, this time with foreign companies as participants. The FU evaluated developments in individual fields and considered which fields should supply each contract. The FU's goal was to secure the exploitation of scope economies (optimal resource management across fields, and between oil and gas production). The MPE was to make the final decision whether a gas contract was to be ratified, and which fields were to supply the contract ("supply contracts"). Under these arrangements the Norwegian state (the MPE) directly intervened in decisions about gas sales and production. Statoil continued to play an important role, but government

control became stronger. It was not only as regulator and landlord that the MPE exercised power over the industry, but also through direct ownership of fields and companies (see later). Equivalent dominant governmental ownership concentrations were found also in the most important downstream transmission systems and terminals for natural gas.

In the EU, although the long-term contracts and their Take-or-Pay (TOP) clauses contributed to market developments in its build-up phases, the assumption was that the Transmission System Operators (the TSOs) were able to collect high profits and block transportation of gas to third parties. Such issues were important backdrops for the EU in initiating the move towards a more liberalized market design towards the end of the 1990s. The first gas directive (EU 1998) concentrated on the introduction of TPA and the unbundling of services. The second directive (EU 2003) was concerned with legal unbundling and national regulations. The third directive (EU 2009a) focused inter alia on ownership unbundling and the introduction of a regulator at the EU level (EU 2009a). This included establishing an Agency for the Cooperation of Energy Regulators (ACER) in order to "safeguard security of gas supplies" (EU 2009b). ACER is thought to have a wide range of functions extending beyond gas into electricity. The agency shall de jure and over time harmonize markets practices, transportation tariffs and rules of conduct.

The EU and the European Economic Area (EEA) agreement started to challenge established preferential arrangements for the Norwegian petroleum industry in the early 1990s. EU competition law and relevant directives appeared, however, eventually as rather uncontroversial for the industry, as most of the supply industry

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had already become competitive. The first gas directive was considered far more important as it threatened the structure of the Norwegian petroleum organization (Stern 1998, 164-170). The EU argued that the EEA agreement made the Directive relevant also for pipelines on the NCS, and that Norway should open for Third Party Access (TPA) on the NCS. This was for a long time resist-

⁹ Gas reserves are estimated to represent some 2/3 of total petroleum reserves on the NCS.

ed by Norway. In addition to the pressure from the gas directive, the EFTA Surveillance Authority (ESA)¹⁰ examined legal aspects concerning the GFU arrangement on EU competition law. After long discussions and threats, including a Statement of objection (SO) from the EU Commission and fines in the range of 40-50 billion NOK (7-9 billion USD), the Norwegian government decided to terminate the GFU-FU arrangements for gas production and sales in 2001. Each licensee should now sell their own gas. A TPA system was to be established on the NCS, and contracts were to be made directly between individual producers and purchasers in the market.

5. Statoil as political instrument

The 10 oil commandments from 1972 were concerned with national control of the petroleum sector and the building of a national oil industry. The establishment of Statoil was the most important single instrument used by the state to ensure that oil activities “benefit the whole nation”. With large oil revenues and national control over the industry the establishment of Statoil was by many considered an industrial success during the 1970s and the early 1980s, not least from a pro-state perspective (Claes 2002). However, skepticism about the dominant role of the company gradually emerged. When oil revenues rose substantially after the second oil shock in 1979/80, the net cash flow of the company became extremely large. The company had incentives to increase activity (and costs) in order to prevent transfer of taxes to the state as its owner and create its own autonomy (Richardson 1981). It was also opposition against the dominant role of the Labor party over oil policy, and that Statoil could be a young cuckoo dominating policy, rather than the other way around (Osmundsen 1981). Even though Statoil was expected to operate within political imperatives made by the government, Statoil had its own ambitions and sought to influence political debate (Grayson 1981). Statoil’s significance as an industrial locomotive was also challenged, where the liberal parties wanted a more diversified industry, and bigger shares of blocks to Hydro and Saga.

After the general election in 1981, power was transferred from the Labor party in the direction of parties on the liberal side. It was the Conservative Party leader Kåre Willoch’s (Høyre) two subsequent governments (1981-83 and 1983-86) that exercised the first pressure to reduce the influence of Statoil. The definition of a “national interest” was modified. However, even though the model changed it did not reduce the role of the state. The “Statoil compromise” in 1984 “cut the wings” of the company. The aim was to prevent Statoil from growing too

big and exercising too much political influence (Willoch 1990, 289). The shares they owned in the licenses were divided in two, one to Statoil (some 20 %) and the (larger) rest to the state through the establishment of the State’s Direct Financial Interests (SDFI). The SDFI was

“The EU started to challenge established preferential arrangements for the Norwegian petroleum industry.”

to administer the state’s direct ownership of licenses on the NCS. Investment and operational costs in the SDFI were paid directly over the state budget, and revenues equivalently accounted. The consequence was that the state had huge expenses in the investment phase of a field, and in due course huge revenues when they were completed. This was because investments were accounted for when they occurred and not depreciated (a “cash principle”). With the new system the state took the largest single part of the financial risk for field developments, the entire economic rent from their part of a license, as well as an equivalent possible loss¹¹.

The immediate effects of the wing clippings were not very dramatic for Statoil. The company remained responsible for the operation and financial management of the SDFIs. The significant Statfjord field, already in production, was exempted from the SDFI arrangement, and this helped Statoil maintain a significant cash flow for several years. The arrangement indicated that it was the government, and not Statoil, that took on the greatest expenses when developing big fields like Oseberg, Gullfaks and Troll. The state’s net cash flow became actually close to zero in the late 1980s, because of the SDFI expenses and low oil prices. The wing clippings indicated a direction where the company might become less dominant, in relative terms, and that a different role

11 The net cash flow (net government take) from the petroleum sector is at present dominated by a 78% tax on companies’ economic profit (27 % general corporate tax + 51 % special tax) and 100% of net revenues from the SDFI-shares. In addition, the government receives a dividend from Statoil profits and royalties, area fee and CO2 tax. Under the SDFI arrangement, the state pays its share of investments and costs, and receives a corresponding share of income from a production license. The expenditures are accounted when they occur, so are also revenues (no depreciation). Through the SDFI the state takes all costs and the risk, but also all the economic rent. Typically, the SDFI holds the largest shares in the biggest and most profitable fields.

10 ESA plays the same role towards European Free Trade Association (EFTA) countries in controlling the implementation and practicing of EU law and directives in the same way as the EU Commission does towards EU member states.

for the state's control of the sector might gradually take shape. The emergence of and increased political preference for Hydro and Saga also reduced Statoil's relative influence.

The Mongstad refinery scandal in 1987-88 contributed further to changing the role of the company. With the Mongstad plant, Statoil entered into the refining of crude oil and land based industry. It also established a nationwide gas station system. The problems around Mongstad were in the aftermath explained in terms of poor projecting, technical misjudgments and weak project management. The preferential position occupied by Statoil was by many considered to have led to bad cost control (X-inefficiency). The heads of Statoil were accused of being unable to deal with the situation, and of having withheld information to the MPE. Statoil's COB at the time, Inge Johansen, and acting entrepreneur from the start, Arve Johnsen, was forced to resign. The final cost was around one billion USD above the original budget. The phrase "scandal" may in many senses however over-exaggerate what can be considered a normal consequence of the state's substantial entrepreneurial risk-taking in the development of Statoil and Norway's oil and gas industry.

Harald Norvik who took over as head of the company after Arve Johnsen in 1987 was also a former state secretary for the Labor party. By bringing persons from the political into the industrial sphere competence was more easily exchanged and the tight corporate links established were reinforced. From the start Norvik wanted to partly privatize and internationalize the company. He considered that Statoil had to become a publicly traded company to get the same working conditions as its competitors (Lerøen 2002). After his resignation in 1999, as a result of the Åsgard field excess costs, Norvik was able to wish Statoil welcome to the Norwegian "center of capitalism", Oslo stock exchange, as its chairman in 2002.

His successor Olav Fjeld had no political background, although he had experience from state companies. Statoil expressed now no official political opinions. Cost control was however still inadequate. In the Snow-white project in the Barents Sea costs were exceeded by 50% compared to the budget, and had suffered many problems. With the conservative politician Helge Lund as another new head of Statoil, after Fjeld had to resign after Statoil's Iran scandal in 2003, the role of Statoil as a state entrepreneurial instrument was considerably reduced. As with Statoil privatization, it was the company itself in 2006 that together with Hydro suggested their merger of 2007, and not the government. This time it was undertaken in an alliance with former minister of the MPE for the Norwegian Center Party and head of Norsk Hydro, Eivind Reiten. The corporate coupling between

spheres continued, but now between the industry and parties other than Labor.

EU demands took place at the same time as Statoil's privatization. As privatized company the decisions that formally had been internalized in the company's decision-making had now to be defined and made explicit as to how the state should take care of its interests. Two new fully owned state agencies were created. Petoro should take care of the SDFI, while Gassco should secure open access for transportation of gas. Earlier both the SDFIs and most of the transportation system were handled by Statoil. The new Gassled tariff system was also introduced and offered equal tariffs for everyone using the Gassco system (MPE 2002).

Even with a more liberal EU regime and a privatized Statoil, the Norwegian government managed to give the new structure a new form that at the same time maintaining control. As the state remained a 100% owner of the SDFI and main shareholder in Statoil (some 70% of the shares) it could still have strong de facto direct say in decision-making. The concentrated ownership structure also implied that it remained a dominant seller of Norwegian gas, even though the GFU and FU constructions were abolished. If it had not abolished, the arrangements would have needed modifications anyway, in order to create a more dynamic structure that could sell in a more mature European market. Again, the

"It was the government that took on the greatest expenses when developing big fields."

result was not less, but changed, state participation. Two new government agencies were created and the MPE now directly regulated activities that formerly had been handled by Statoil. The new government – business mixture implied more state organs, new companies and regulatory agencies, but at the same time less direct interventions in commercial decisions.

To what extent did the establishment and development of Statoil contribute to the fulfillment of the 10 oil commandments? The Norwegian petroleum cluster, Statoil included, is now in the international front in offshore developments. Oil and gas is mainly landed in Norway

(commandment no. 6)¹². Concerning national control (commandment no. 1) there has for a long time been a fear that Statoil would gain too much power within the industry, as well as in the country. In spite of the wing clippings in 1984, and increased direct state control in the gas sector and privatization, these questions continue to be debated. Privatization made the company more free in its business decisions. Europeization and globalization of the international economy, liberal economic trends and the EEA agreement were other important factors. The young cuckoo had definitely become an adult and privatized out of the nest¹³.

6. The Petroleum Fund

An important problem in the entire period when the Norwegian oil and gas industry was built was that the focus on non-petro industries was weakened. This challenge was not mentioned in the 10 oil commandments from 1972. The economic policy ("Motkonjunkturpolitikken") to counter-act the international economic downturn in the 1970s caused by the first oil shock and the Vietnam War was introduced by Minister of Finance Per Kleppe (also the Labor party) in the 1970s. It aimed to avoid decline in overall domestic production and employment. Domestic consumption was maintained through expansive budgets financed by borrowing abroad. Paying-back would take place with the arrival of the large anticipated petroleum revenues in the 1980s.

The resultant price pressure from these investments combined with the expansive public budgets led to a cost pressure for non-oil export and import competing industries. The demand stimulus from public spending generated wage increases for industry. While the NOK weakened compared to U.S. dollars, it was strengthened towards European currencies. The large current account surpluses in the early 1980s after the second oil shock put additional pressure on industry. A belief in further growth in petroleum revenues were at the time shared world-wide (Lynch 1992). Oil revenues made both the Norwegian government and society forget that important parts of non-petro industries had lost much of their competitive positions. Oil money paid for low unemployment and more welfare goods. Norway experienced a light "Dutch Disease", and that the significant

emphasis on the petroleum sector also had its dangerous sides.

A relatively careful attitude towards the management of petroleum resources, coupled with concerns over the macroeconomic effects of the sector, led in the 1970s to a decision that production should be limited to between 50 and 90 million tons of oil equivalents (mtoe) per year. This regulative measure on production was replaced by a regulation of investments in 1983 ("Tempoutvalget"). However, none of the measures were part of any unified plan for production levels and the management of oil and gas revenues. Instead they were an expression of a lack of macroeconomic government control (Noreng 1984).

The dramatic drop in oil prices in 1986 showed that the oil sector was not only filled with money and opportunities, but also great risk. The drop in oil prices was connected with another dramatic drop in the dollar exchange rate. This reinforced the losses measured in Norwegian currency. The state, through the SDFI, a strong taxation system and ownership in Statoil, took most of the losses when prices fell, even though companies also lost. Macroeconomic experiences from the 1970s and 1980s initiated a discussion about establishing a fund to split oil money earnings from expenditures. The idea was to transfer resources from the NCS to international financial markets, which would give a higher and more stable yield over time. This was in line with the Hotelling rule (Hotelling 1931), to protect the economy from boom and boom cycles, and to make use of income in a more smooth and long-term (and over generations) manner.

The establishment of the Petroleum Fund in 1991 ensured that annual public budgets were no longer directly influenced by fluctuations in oil and gas revenues. When petro revenues were not changed into NOK, the pressure for an appreciation of the Norwegian currency was weakened, as well as domestic demand was controlled. The fund had however also significant effect on oil and gas production policy. Not only earnings and expenditures were decoupled, but also activity level on the NCS and macroeconomic concerns. The removal of production restraints increased the domestic maneuvering room for oil and gas companies, as well as for consuming countries, to pressure Norway for higher production. How the fund is eventually to be used "to the best for the society" (according to the 10 Oil Commandments) is however still unclear, in spite of renaming as a pension fund (from 2006 it is formally called the Government Pension Fund – Global). Significant efforts have been made to ensure against its misuse, such as the 4 per cent Fiscal Rule ("Handlingsregelen"). If maintained, this implies a gradual increased usage of petro money in

¹² Ekofisk is the main exemption.

¹³ Refvem 2007 is expressing strong concerns about the merger. Osmundsen 2007 is discussing negative impact for competition on the NCS activity. Former CEO Arve Johnsen stressed this point in an interview on February 1, 2004: "The fantastic development of the Norwegian oil industry has been due to the competition between various oil companies with different cultures. [Its] success rests on world class technological innovations encouraged by competition" (cited in Ramm 2009, 282).

the economy¹⁴.

After the successful build-up of the petroleum sector the state has as a consequence become increasingly concerned with the macroeconomic and social long term aspects for the country, and dealing with the huge sums accumulating in the Petroleum Fund. The ownership and direct participation in the activities, together with a strong taxation system, has meant that most of the economic rent has been given to the state. Norway

"Norway experienced a light 'Dutch Disease'."

has done quite well in protecting the economy from Dutch Disease problems by creating the Fund. There is little controversy (although not zero) in Norway about the model – most people are content to have a professional petroleum industry, a healthy fund and political control. There appears to be a consensus across party lines that the amount of petro money to be used in the economy should not contribute to increased inflation, and hence, avoiding Dutch Disease problems. There is however disagreement, especially from the Progress Party, in power from 2013 together with the Conservative Party, on how much money the economy can absorb without creating such problems.

The strong growth of the Norwegian Petroleum Fund, when oil prices reached high levels once again after 2001 can today be considered a second exogenous change or shock to the Norwegian economy and society. Facing the growth in the Fund for which Norway has not put down labor or capital (it is the accumulation of economic rent from the NCS and returns mainly on

14 At present, all government net cash flow from the petroleum sector goes into the fund and is saved together with the return on the investments, which are entirely made abroad. As the Fund grows, the yield on investments will grow in importance compared to the net cash flow from petroleum production.

Norwegian fiscal policy is anchored to the guideline that over time the structural non-oil budget deficit is to correspond to the real return on the Fund, estimated at 4 % per annum (the "4 per cent Fiscal Rule"). In this way public and private spending is made independent of petro revenues. The 4-per cent rule is however, not linked to the economic situation at any one time, but to a long-term usage of the petroleum wealth. Under present Norwegian macroeconomic regime, monetary policy might be used to regulate economic activity.

international financial investments), elements of entrepreneurial actions is discussed again. For example to upgrade society as a responsible response to the new dramatic exogenous change the growth of the Fund represents, if the spirit of the Norwegian petroleum entrepreneur is to be followed. Today, Norway is not using the money explicitly to invest strategically at home, for example in infrastructure. In 2014 the Fund approximates twice the size of the Norwegian Gross National Product. Among the global Sovereign Wealth Funds (SWFs) it ranks top in 2014 with a value of some \$1,000 billion. It owns 1-2 per cent of both world share capital and government bonds¹⁵.

7. The dynamism of the government - business mixture

When combining the roles as landlord and industrial entrepreneur, the Norwegian state could engage in the business in a manner similar to a private entrepreneur or a company, and simultaneously use political and legal interventions and regulative measures to reach it's goals (Austvik 2010:106-109). As a political entrepreneur combining these roles and measures, the state could define social (as opposed to private) goals for economic activities and use measures to reach those goals that private entrepreneurs do not have at their disposal. The goals for society may converge with the goals of private profit-maximizing firms, but in aspects social goals may also conflict with private ones. Social goals should include more long-term concerns and comprehensive views on economic activity than private businesses have.

One important background was the nationalization of the oil industry in OPEC countries in the 1970s. This moved petroleum states from being mostly regulators and taxmen in relation to companies, to be directly involved in the operation of the industry itself. This pattern became common for both OPEC and non-OPEC nations. "The state is switching from a landlord to an entrepreneur." "No longer is the industry just a matter of oil companies making profits and governments collecting taxes", but they "produce a predictable pattern of corporate structure for state enterprise". In developed countries "pluralistic national industry structures that coordinate domestic and international groups through redistributed taxes and state oil company subcontracts" are developed" (Klapp 1982, 575-576). The Norwegian state was one of those non-OPEC states that wanted to

15 Source: International Forum of Sovereign Wealth Funds, www.ifswf.org. A SWF is a state-owned fund held by the respective national central banks. They are investing globally in real and financial assets such as stocks, bonds, real estate etc. SWFs are funded by revenues from trade surpluses and the accumulation of foreign-exchange reserves. Since the turn of the century they are created by commodity exports (such oil and gas for Norway and countries in the Middle East) or from general trade surpluses (such as for China).

control revenue, production and management of what in the early 1970s was a new and potential dominant economic and political industry for the country. By combining different political instruments and roles, the Norwegian state became innovator and leader of the activities and of their socio-economic impacts.

Strong national control of what became an extraordinary profitable industry after the first oil shock in 1973-74, reinforced by the second shock in 1979-80, remained important to most oil producing countries until prices fell dramatically in 1985-86. As oil prices stayed low afterwards and throughout the 1990s, states became less interested in taking on the associated risk connected with petroleum activities. The lower profitability showed how vulnerable the costly oil and gas industry was to price changes. Low prices, economic liberalization, market reforms and New Public Management (NPM) styled reorganizations characterized many national oil and gas policies in this period. For example, after a strong nationalization period in the 1970s, Canada and the U.K. completely privatized their petroleum industries. Market reforms also took place in countries like Russia and Malaysia (Baker Institute 2007). The remaining fully or partly state owned national oil companies (the NOCs) also reevaluated their strategies, where costs, effectiveness and technological innovation became relatively

"Policies were changed and developed over time to adjust to new industrial and market realities."

more important than national political goals. On the demand side, countries such as the U.S. and in the EU in the developed world, and China, Brazil and India in the developing world, similarly reoriented their energy policies towards liberalization and NPM solutions, after a period of strong political interference following the two oil shocks.

When oil prices shot up after the turn of the century, however, the trend was again reversed. Examples were stronger political control of the Russian oil industry, as well as in Bolivia and Venezuela. Norway with now a mature industry made some organizational changes in this period only (as opposed to in the 1990s), such as a partly privatization of Statoil in 2001. Reorganizations were also made to adapt to EU competition law and directives, which Norway had to follow as part of the

EEA agreement. However, even with these changes, and in contrast to countries like the U.K. and Canada, the Norwegian state maintained a strong control with, and continued to take most of the profit from, its petroleum activities, with little political opposition from within the country. Policies were changed and developed over time to adjust to new industrial and market realities, and new domestic and international political situations; to the intended benefit of Norwegian petroleum industry and the state itself.

However, even though the state maintained a dominant share in the ownership of Statoil and Hydro, in addition to 100% of the SDFI, its role became gradually more that of a landlord and a regulator and organizer for the industry, than an entrepreneur and participant in commercial activities. Direct influence over the company is now to be formally exercised through shareholders' rights. Keynesian and industrial interventionist principles from the infant stages of the Norwegian oil age were gradually replaced with more liberal ideologies, where an active state in running industrial activities became less acceptable. At the same time an entrepreneurial state was less needed. The maturity of the industry contributed to a principal logic based upon less direct interventions, as seen from the state's point of view.

Questions over the relationship between Statoil and the MPE however remain. In the establishment phase of the Norwegian petroleum industry it was clear that business was a "junior partner to government". As the roles of Statoil as an instrument for the state was wing-clipped and the company eventually privatized, it became a Norwegian multinational oil company with engagements in many countries. This coincided with a strong increase in international trade and direct foreign investments. In 2007 Statoil "swallowed" Hydro's oil and gas division. Now the Norwegian state supports Statoil's international engagements in countries such as Azerbaijan, Angola, Algeria, Libya, Russia and Venezuela. At the same time, Statoil is promoting its interests at home in an expansion on the NCS. As the company has become "only commercial", questions have once again been asked about whether the government has become a "junior partner to business" (a principal-agent problem), as it was in the early 1980s. International ideological change, together with high oil and gas prices (and high company earnings) and the maturity of the industry, has transferred some power in determining petroleum policy in the direction of the industry itself.

8. Conclusion

Can the Norwegian petroleum experience be used as an example for other petroleum producing countries, notably shale oil and gas producers? Can the case sharpen distinctions between the roles of the state on

the one hand and the role of businesses on the other? This article argues that in a resource rich country the state should be at the political helm as compared to sectors with only commercial significance, if socio-economic goals shall be reached. The generalization is that for any sector the nation state should have a vision for economic and social developments unless it wants to let markets only lead developments (*laissez faire*). A mixed-economy (Keynesian) approach emphasize that the state should define social goals more than what is the case in the neoclassical economic school.

The measures used to reach social goals may well include very liberal hands-off regimes for small or large areas of the economy. However, if states are politically passive in relation to overall developments, albeit regulatory active in the details, infantile national industries may not be developed as they may lose to better foreign companies at the outset. If the state limits itself to follow an industrial and innovation policy to the case of "normal" commercial industries, it does not equally well appear to fit a situation when the economy experiences an exogenous shock, as through the discovery of huge petroleum reserves, or to retain a strategically important national industry. The control of strategic sectors may be lost or weakened in a mature phase through mergers and acquisitions by foreign companies with other concerns than the host nation's well-being. Shale oil and gas has generally higher costs than large conventional fields. The economic rent to be collected can be expected to be less than where conventional oil and gas is produced. But if the sector grows big it may still have large implications for energy security, the environment, industrial developments and other social, political or economic areas important to host countries.

It is in this context important to observe that the industrial political "tool box" is not empty in a liberal economic regime. First, there is considerable room for a state to facilitate entrepreneurship in a non-interventionist way, in a way similar to the role of governments proposed by Michael Porter (1990:617-682). Second, beyond its regulative role, a state can in a liberal regime be an industrial actor itself through fully state owned companies. Third, international regulations in many cases end up being more about form than substance, or "fuzzy liberaliza-

tion" (Andersen and Sitter 2009). When national and international Win-Sets are considered not to overlap, the solution can be that the nation states formally adapts to the international rules and regulations, and at the same time gives their contents a strong national flavor. Regulatory innovation is gradually recognized as an important tool used by the increasingly networked state (Black, Lodge and Thatcher 2006). Obviously these challenges are larger as the economy and the political system in the country is less developed.

In a neo-Schumpeterian understanding of trade and international competitiveness, the state should be proactive on the aggregated level (Hanusch and Pyka 2007). It is the state's relative ability (compared to the situation) to develop policy and define visions and preferences that is important to do this. The Norwegian experience tells that state has to keep on running just to stay in line with industrial and international changes. It must always stay ahead in negotiations, adaptation and implementation of and to international agreements and market and technological change, directly or indirectly in interaction with the industry concerned. A sector's competitive advantage relies on relevant comparative advantages also in policy making from both cost, efficiency and national points of view. A dynamic mixture of roles as landlord and entrepreneur within an overall political enterprise is better than adhering to either one in all aspects of an industry and the society. To define the scope and scale of the maneuvering room a state has in developing and maintaining a specific national industry in a liberal international economy is part of the analysis. The higher the industrial and organizational competence there is in the state apparatus and among politicians in understanding and doing this, the better the chances of finding and sustaining an optimal policy mixture. For potential new shale gas and oil producers, the Norwegian petroleum experience may provide some insight into the value of high competence on both industrial and political sides, and the importance of finding an optimal government – business mixture adjusted to national situations and time.

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