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State ownership and innovation in the Norwegian corporate governance debate

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Prologue

In the Labour Government effort to develop industry during the 1950s in Norway, the state owned armament factory at Kongsberg - Kongsberg Våpenfabrikk (KV) - was to become Norway's leader in the development and fabrication of high technology products. The politically coordinated modernization effort benefited from generous public funding from the US, and was coupled up with technology development efforts undertaken at the Norwegian Defence Research Establishment (NDRE). This research institute was a child of the Norwegian integration into US and NATO defence structures after the war. During the 1970s, KV had to compete with a small start-up firm - Norsk Data - for the position as national leader in the field of digital computers. The state owned factory, in spite of special privileges, could not keep up with the much smaller rival. In 1987, the Kongsberg firm after years of poor economic performance was reorganized and partly privatized. Popular opinion was that Goliat had been defeated by David, and the events both on the left and right of the policy spectrum were cheered as natural, sensible, and even long overdue.

10 years later, Norsk Data ran into serious economic problems. The company then employed more than 4000 people, but faded quickly. The development and production of the Norsk Data brand of computer hardware and software was discontinued, and the remains of the once proud firm were bought by Siemens-Nixdorf, an earlier rival.

Kongsberg today has an important cluster of high technology firms, and Kongsberg Gruppen - which grew out of the former activities of KV - employs more than 4000 people.[1]

* * *

A few years after Norsk Data started its operations, the state owned industrial firm Norsk Hydro established operations in the emerging salmon farming business. Hydro Seafood became the world's largest producer of Atlantic salmon before the end of the millennium. Hydro pursued an industrial strategy in order to promote this venture, and worked closely with researchers (amongst others at the AKVAFORSK) to develop a sustainable competitive advantage based on advanced scientific knowledge.

Hydro, however, was perceived as a Goliat in the aquaculture cluster, which was composed of many small firms distributed along the coast. The cluster was considered of vital importance for regional development. Local interests lobbied effectively against Hydro taking control over the aquaculture cluster, and because the State was a majority owner of the firm, such policy priorities could be brought to bear on the company strategy. Hydro gave up its ambition of building a major new industrial activity based on proprietary technology and the legal protection of its intellectual property rights. It sold its aquaculture business to a Dutch firm at the end of the millennium, making a hefty profit.

[1] The history of Norwegian minicomputing technology is told in Ørstavik, Finn, *The hierarchical systems paradigm in technological innovation*, Dr. Philos thesis, Oslo: The University of Oslo, 1996

At this point, policy makers were indeed unhappy to see such an important part of this very promising industry be taken over by foreigners. The criticism of Norsk Hydro lack of willingness to protect national ownership in this important industry was intense and pervasive.[2]

[2] The Hydro venture into aquaculture is from a forthcoming paper by Finn Ørstavik on the development of the Norwegian aquaculture cluster. Cfr. also Mariussen *et al*, *Innovasjonssystemet i Havbruksnæringen*, STEP Report 2002, forthcoming

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1. Introduction

Liberal philosophers have a clear position regarding the role of the State in economic life: The State should not own, nor run, it should only regulate. It should be the task of citizens to run businesses, the function of the State should be to put down the rules of the game, and to make framework conditions fair and predictable.

In real life, government institutions play a significant role in business, both as owners, in running operations, and in specifying tailored rules for specific types of businesses. Most of the time, people at the government level interact with people from business in order to develop rules and regulations in ways that are compatible with the needs of business firms, today, and even more importantly, in the future. The relationships between the government institutions and the business firms are in reality very complex, and far from as impersonal and neutral as liberal philosophy and normative economic theory would like them to be.

Debates on what role the institutions of the Government and the State should play in an economy are older than capitalism itself. Such discussions are a key feature of sociology, as well as the classical economics concerned with institutions and change. This is immediately obvious when the works of Marx, Weber, Schumpeter, Parsons and Habermas are considered. To discuss these various theoretical contributions is beyond the scope of this paper. Our focus is upon *state ownership in a corporate governance perspective*.

The term *corporate governance* has been coined to denote *how firms are owned, managed and controlled*. Corporate governance has become a central issue among both politicians and researchers in recent years, reflecting a recognition that the ownership and management of firms is of great importance to their economic performance. As Tore Sandven has shown in a recent paper, there is a multitude of perspectives, theoretical foundations and lines of thinking in today's corporate governance debate.[3] Sandven is addressing the specifics in the recent international debate and its theoretical underpinnings, and his arguments will not be repeated in any detail here. Our starting-point is, however, the view expressed by Sandven that the mainstream literature on corporate governance suffers from an overly narrow perspective.[4] We share this view - not only is the debate too much preoccupied with specificities of neoclassical theory. The focus of the debate is also more or less exclusively set on private firms, and how their owners are to make sure that managers act in accordance to their interests.

First, the debate has a narrow concept of what a firm is; namely a rational actor with qualities making it substantially very similar to the individual conceptualized by mainstream economists as *economic man*. The launching pin of the debate then becomes the troubling realization that in economies where firms have their ownership split off from the management function, the simple, unitary and rationalistic economic

[3] Sandven, Tore, *Corporate Governance: Theoretical Background and Implications for the Analysis of Corporate Governance in Norway*, STEP Report 2002, forthcoming

[4] Sandven, Tore, *Corporate Governance: Theoretical Background and Implications for the Analysis of Corporate Governance in Norway*, STEP Report 2002, forthcoming, p. 6

model of the firm becomes very unconvincing. The line of thinking addressing the issues of corporate governance from this perspective is commonly referred to as *the maximizing shareholder value model*. In its preoccupation with how owners are to discipline managers in order to ensure profit maximization, this model neglects the - in our view - crucial relationship between *innovation* and economic performance.

Second, ownership seems in many analysts' minds to be synonymous with private ownership. It is the division of private, individual owners and managers which is discussed. As Trygve Guldbrandsen shows in a recent literature review, state companies are in general ignored in the international corporate governance debate.[5] Guldbrandsen finds one notable exception to this rule: Andrei Shleifer and Robert W. Vishny do mention state ownership in their review of corporate governance issues.[6]

In several countries - among them Norway - state ownership is a salient feature in industry. Shleifer and Vishny are aware of the fact, but still treat the issue with less rigour than it deserves. In their view, state ownership is simply 'a manifestation of a radical failure of corporate governance.'[7] This failure is claimed to have dramatic negative consequences for the performance of firms. The authors, however, fail to substantiate their claim with any convincing data, and base their judgement instead on common-sense considerations regarding the poor economic performance of state controlled economic enterprises in the former Soviet Union and other communist states.[8]

Against this background, the present paper surveys the political and academic debate on state ownership in Norway. The structure of the paper is the following: We start, in section 2, by showing that state ownership has been substantial in this country since the Second World War, and still plays a very important role in the economic life. In section 3, we investigate into the recent debate on corporate governance and the significance attributed to the role of state ownership in this debate. We stress that the issue of *how innovation comes about* should be given a central place in any serious consideration of the relationship between corporate governance and economic performance.

The particular significance of state ownership with respect to innovation will elaborated in the concluding section 4. We there argue that a more adequate conceptualization of innovation immediately raises interesting questions about

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[5] Guldbrandsen, Trygve, *Internasjonal forskning om eierskap og kontroll i privat næringsliv*, ISF Report 99:2, Oslo: Institutt for samfunnsforskning, 1999

[6] Shleifer, Andrei and Vishny, Robert W., 'A Survey of Corporate Governance', in *The Journal of Finance*, Vol LII, No 2, June 1997

[7] Ibid., p. 737

[8] Ibid, pp. 767-769

performance and various forms of ownership and about state ownership in particular. In an innovation systems perspective, state and government institutions play a crucial role in economic development. This role is not grasped in normative, equilibrium oriented neoclassical economic theory, but should be at the core of more evolutionary economic analysis.

2. Characteristics of state ownership in Norwegian industry

In Norway, state ownership is substantial. There is however a lack of empirical knowledge in this area, concerning both the scale and characteristics of such ownership, and what significance it might have for economic performance.[9] While the main aim of this paper is to look into the current Norwegian debate on state ownership, we wish to place the debate within an empirical context, and we therefore provide a brief survey of what recent literature tells us about the *history, motives, organisational forms, scale,* and *general characteristics* of this phenomenon.

History and motives

In a 2000 FAFO working paper,[10] Martin Byrkjeland and Ove Langeland outline the historical development of Norwegian state ownership since 1945 with emphasis on the motives for the state acting as an industrial owner. While maintaining that the motives are varied and have changed over time, the authors conclude that motives can be said to mainly belong to three broad categories: *Control, market failure,* and *industrial policy*.[11]

State ownership has been a central feature in Norwegian industry since the Second World War. Although the State owned industrial enterprises in earlier times as well, these were mainly companies of strategic importance to the country's defence and infrastructure. According to Byrkjeland and Langeland, the main motives behind the increase in state ownership after the war were the need for industrial development in a situation where private capital was scarce, and the ambition to secure national control of central natural resources. In addition, the development must be seen in the context of the ideology of the Labour Party governments which were in power from 1945 to 1963. The overriding ambition of these governments was to modernize the country and increase welfare through promoting industrial development.[12]

On the whole, there was a weakening of the State's role as an industrial owner in the 1960s. The decade saw several industrial scandals - the first of which was related to the Kings Bay incident in 1962 - which made state ownership a much debated issue. However, Byrkjeland and Langeland point out that a trend in the direction of reducing state direct industrial involvement had been under way before these scandals occurred. This point also shows that the development can not be exclusively attributed to the Labour Party's loss of power in this decade. Byrkjeland and Langeland argue

[9] Byrkjeland, Martin and Langeland, Ove, *State ownership in Norway 1945-2000*, FAFO working paper 2000:22, FAFO, 2000, p. 84; Bøhren, Øyvind and Ødegaard, Bernt Arne, *Norsk eierskap: Særtrekk og sære trekk*, Department of Financial Economics, Norwegian School of Management BI, April 24, 2002, p. 3

[10] Byrkjeland, Martin and Langeland, Ove, *State ownership in Norway 1945-2000*, FAFO working paper 2000:22, FAFO, 2000

[11] Ibid., p. 78

[12] Ibid., pp. 27-34

that state ownership was never a goal in itself for the Labour Party. In spite of an overall reduction, the State according to the authors still owned and controlled a substantial part of Norwegian industry in the 1960s. In addition to the continuation of the mentioned modernization strategy, Byrkjeland and Langeland stress that state ownership in this decade was mainly motivated by regional policy concerns.[13]

During the 1970s there was a more than tenfold increase in state industrial investments.[14] A major reason for this was the discovery of oil in the North Sea and the Government ambition to develop an autonomous Norwegian capacity in off-shore technology, research and industry. A key concern in this connection was national control of the country's natural resources. But beyond this, the effort was led by people that during the whole post-World War II period had worked to develop advanced technology industry and research in Norway. Men such as Finn Lied (director of the Norwegian Defence Research Establishment, and Minister of Industry in the Labour Government led by Trygve Bratteli, 1971-1972), and Jens Christian Hauge played essential roles. They wanted to use the discovery of petroleum resources strategically, intensifying Labour efforts to develop Norwegian industry and Norwegian technological and scientific research.[15]

The emergence of Norway as a major oil and gas producer thus coincided with Labour efforts to use the State, and state ownership, strategically to promote radical institutional and industrial innovation. The ultimate goal was to achieve the modernization of the economy that had been a coveted policy goal since Labour first took government power. The petroleum resources gave completely new opportunities to develop both industry and research, and 'the market' was not trusted with the task of achieving such goals. Lied, Bratteli, Hauge and others oversaw a comprehensive institutional build-up, on the level of Government, as well as in the industry, where the whole state owned company Statoil was given a pivotal role to play.[16]

The state owned industrial activities of the 1970s in other areas than the emerging petroleum sector, such as in electronics and other high tech fields, resulted for a large part in substantial economic losses. This clearly generated support for increased privatization, which has been a salient trend both internationally and in Norway in the 1980s and 1990s. While ascribing to the Conservative Party - who came to power in 1981 - a central role in this development, Byrkjeland and Langeland stress that the Labour Party had signalled a re-orientation towards increased privatization even earlier. Byrkjeland and Langeland argue that a rather ambivalent picture of the State's role in industry has emerged in Norway in the last two decades. Against the clear trend towards increased privatization and deregulation - illustrated for example by the part privatization of Telenor and Statoil - stands the fact that state ownership is still substantial. In certain industries, the involvement of the State has increased. This is true for the banking industry, where the severe crisis in the late 1980s resulted in substantial investments by the State. Thus, as Byrkjeland and Langeland point out, state ownership can in some cases be seen in the context of the state acting as a

[13] Ibid., pp. 35-42

[14] Ibid., pp. 43-59

[15] Cfr. Ørstavik, Finn: The hierarchical systems paradigm in technological innovation. Dr. Philos. thesis, The University of Oslo, 1996; chapter 12.

[16] Ibid. The developments have been further analyzed for instance in Hanisch, Tore Jørgen og Nerheim, Gunnar 1992: Norsk oljehistorie. Bind 1. Oslo: Leseselskapet - Norsk Petroleumsforening.

'saviour' in times of crisis. Securing national ownership is still a central motive, as is securing long term strategic ownership.[17]

Organizational forms

State industrial holdings are organized in several different ways. A report prepared by Statskonsult in 1998 [18] elaborates on the different organizational forms. The report divides state holdings into three main categories: *Administrative agencies*,[19] *state owned companies*, and *foundations*.[20] The categories reflect differences in the formal relations between the State and the enterprise, and hence in the State's possibilities for control and the enterprise's freedom of action. Statskonsult's report focuses upon the organizational forms in which business considerations are the most prominent. These include state owned companies - covering *wholly owned state companies, part owned joint stock companies, state enterprises*, and *special-law firms* - and to a lesser degree *administration companies* - a sub-category of administrative agencies.[21]

Wholly owned state companies are joint stock companies in which the State owns all shares. The companies are independent legal entities. The mechanisms for state control in these companies include the function of the responsible Minister as the general meeting and the appointment of the administrative agencies. State control is however to be limited to overriding issues, such as the companies' areas of operation and dividends.[22]

Part owned joint stock companies are ordinary joint stock companies in which the State is part-owner. In these companies, the State has the same possibilities for control as the private owners, the main control mechanism being the general meeting.[23]

State enterprises are fully state-owned businesses where the objective is to realize some form of sector policy objective. The companies include power networks, property companies (owning science parks, business sites and infrastructure), state forestry resources, and so on. State enterprises are independent legal entities, which are run by a company board and a managing director. The topmost controlling powers are held by the State, and exerted through the general meeting.[24]

Special-law firms are companies established through individual acts of Parliament, usually in order to secure state control over some activity for broad public policy reasons. They include the railways, the post office, the state industrial bank, the

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[17] Ibid., pp. 61-75

[18] Statskonsult, *I godt selskap? Statlig eierstyring i teori og praksis*, Report 1998:21, Statskonsult, 1998

[19] forvaltningsorganer

[20] stiftelser

[21] Statskonsult, *I godt selskap? Statlig eierstyring i teori og praksis*, Report 1998:21, Statskonsult, 1998, pp. 18-20

[22] Ibid., pp. 19-20

[23] Ibid., p. 23

[24] Ibid., pp. 20-21

organization for sale of wines and spirits, and a gambling operation. The companies are independent legal entities, and are run according to their respective special laws.[25]

Administration companies in the main provide business-oriented services related to marketing, safety regulation, export finance, and so on. The argument is that these are activities which are difficult to undertake in an effective and advantageous manner in the market. They are directly administered by the Government. They fall under the purview of the Council of the Ministers[26], their accounts are made public and they are part of the public administration structure. They include the air traffic control service, a state mapping service, and so on.[27]

Scale

Although Norwegian industry is characterized by a substantial degree of state ownership, we lack precise knowledge of the scale and distribution of state holdings. The estimates that do exist, for one thing generally concern *public* ownership - that is the holdings of regional[28] as well as state authorities. Secondly, the figures on the present situation *vary*, reflecting the fact that different actors base their estimates on different - and often poorly documented - data and methodology.

In an article published in 2002, Knut H. Jellum of the Norwegian Financial Services Association (FNH) presents figures on the value of public ownership in the period 1999-2001.[29] Jellum' s definition of public ownership includes all public industrial holdings except in the primary sector and housing property. For listed firms, he bases his estimates on stock value, while the value of public holdings in non-listed firms are estimated on the basis of varying - and unspecified - data. Tables 2.1. and 2.2. are based on Jellum's findings.

Table 2.1. The value of public ownership 1999-2001, in billion Norwegian kroner (NOK)

	1999	2000	2001
LISTED FIRMS	**98,2**	**156,9**	**289,2**
NON-LISTED FIRMS	**815,2**	**788,6**	**564,9**
TOTAL	**913,4**	**945,5**	**854,1**
TOTAL, EXCEPT	**470,9**	**424,2**	**429,4**

[25] Ibid., p. 22

[26] statsråd

[27] Statskonsult, *I godt selskap? Statlig eierstyring i teori og praksis*, Report 1998:21, Statskonsult, 1998, pp. 18-19

[28] Including county (fylkeskommune) and municipality (kommune).

[29] Jellum, Knut H., 'Utviklingen i offentlig eierskap i Norge og andre land', *Horisont*, No 3/2002, Confederation of Norwegian Business and Industry (NHO): Oslo, 2002

OIL

Source: Jellum, Knut H., 'Utviklingen i offentlig eierskap i Norge og andre land', *Horisont*, No 3/2002, Confederation of Norwegian Business and Industry (NHO): Oslo, 2002, p. 15

Comments: The figures are as of the 31st of December for each year.

According to table 2.1, the value of public ownership in the period 1999-2001 was on average approximately 900 billion NOK. Non-listed firms represented the largest values in absolute terms. However, these values decreased over the period in question, while the values in listed firms increased substantially. This development must be understood in the context of the above mentioned part-privatization of the large and traditionally wholly state owned companies Telenor and Statoil.

Table 2.1 also shows, that the scale of Norwegian public ownership for a large part is related to the country's oil resources. We observe that when oil related public ownership is excluded, the scale is reduced by almost 50%.

Table 2.2. The share of public ownership 1999-2001, in percent

	1999	2000	2001
LISTED FIRMS	**16,9**	**24,6**	**38,2**
INDUSTRY AS A WHOLE	**54,2**	**49,9**	**45,8**
INDUSTRY AS A WHOLE, EXCEPT OIL	**45,3**	**37,4**	**36,1**

Source: Jellum, Knut H., 'The developments in public ownership in Norway and other countries', *Horisont*, No 3/2002, Confederation of Norwegian Business and Industry (NHO): Oslo, 2002, p. 15

Comment: The figures are as of the 31st of December for each year.

Table 2.2 shows, that while the share of Norwegian industry owned by the public decreased between 1999 and 2001, the public ownership share in listed firms increased. Again, the developments reflect the stock-exchange listing and part-privatization of Telenor and Statoil.

In addition to Jellum, ECON economist Audun Gleinsvik has estimated the scale of public ownership in Norway in recent years. His figures are presented in the book *The Problem of Wealth* (in Norwegian, *Rikdommens Problem*), which was published in 2001.[30] Gleinsvik limits public ownership to commercially oriented enterprises, excluding - on the basis of subjective judgement - enterprises in which non-business-oriented objectives are prominent.[31] Table 2.3 reproduces Gleinsvik's estimates on the

[30] Roland, Kjell, Norman, Victor D., and Reve, Torger (eds.), *Rikdommens Problem*, Oslo: Universitetsforlaget, 2001

[31] The following publicly owned enterprises are excluded: Statens kartverk, Forsvarets bygningstjeneste, Kings Bay AS, Forbrukerkontakt AS, Norsk Film AS, Norsk Rikskringkasting AS,

scale and distribution of public ownership in the period 1999-2000. The estimates are based on a combination of real market values, estimated market values and book values.

Table 2.3. Public ownership in industry, in million NOK

COMPANY	VALUE
SDØE	**238 800**
STATOIL	**139 000**
TELENOR	**51 517**
STATKRAFT	**38 500**
STATSBYGG	**12 327**
ENTRA EIENDOM	**3 500**
LUFTFARTSVERKET	**10 919**
NSB	**8 700**
STATNETT	**25 000**
POSTEN BA	**3 200**
CERMAQ (TIDLIGERE STATKORN HOLDING)	**2 800**
NMD	**492**
STATSBANKENE	**6 095**
FOLKETRYGDFONDET	**21 037**
OTHER INDUSTRIAL ENTERPRISE	**231 227**
TOTAL	794 113

NSB Gardermobanen AS, Statsskog, Store Norske Spitsbergen Kullkompani AS, Vinmonopolet AS, in addition to theatres and various companies in Svalbard.

Source: The table is based on Gleinsvik's table 8.1, in Gleinsvik, Audun, 'Omfanget av offentlig eierskap i Norge', Roland, Kjell, Norman, Victor D., and Reve, Torger (eds.), *Rikdommens Problem*, Oslo: Universitetsforlaget, 2001, p. 174

According to Gleinsvik's calculations, the total value of public ownership amounts to about 800 billion NOK - significantly less than Jellum's average of 900 billion. This indicates that the concept of state ownership in Norwegian industry is less straightforward than one might expect, and that quantifying this kind of ownership depends on a number of assumptions and approximations.

Further, table 2.3. confirms the central role of oil in Norwegian public ownership: SDØE[32] - which manages the Norwegian Government's oil and gas portfolio - and the oil company Statoil are by far the two largest individual public holdings.

Gleinsvik also presents figures on the relative shares of public and private ownership in Norwegian industry. These figures, which are based on book values, are reproduced in table 2.4.

Table 2.4. Public and private ownership shares, 1998

	Value (in billion NOK)	Percentage
Total	**1151,8**	**100**
Public	**409,0**	**35,5**
Private	**742,8**	**64,5**

Source: The table is based on Gleinsvik's table 8.2, in Gleinsvik, Audun, 'Omfanget av offentlig eierskap i Norge', Roland, Kjell, Norman, Victor D., and Reve, Torger (eds.), *Rikdommens Problem*, Oslo: Universitetsforlaget, 2001, p. 176

Comment: Public ownership includes state and municipal ownership. Private ownership includes Norwegian private ownership and foreign ownership.

We observe that Gleinsvik's percentual estimate is fairly close to Jellum's estimates on public ownership shares in industry excluding oil, over the period 1999-2001- see table 2.2.

In the spring of 2002, the centre-right coalition government published a White Paper on state industrial ownership, entitled *Reduced and improved ownership*.[33] There, the total value of public ownership is estimated to be 842 billion NOK as of the end of 2001, amounting to 42% of total values in industry.[34] The White Paper's lack of any further information as to the scale and distribution of state ownership *in general*, seems to confirm that we as of today are in want of precise knowledge in this area.

[32] SDØE was in 2001 re-named Petoro.

[33] White Paper No 22 (2001-2002), *Reduced and improved state ownership* (in Norwegian, *Et mindre og bedre statlig eierskap*)

[34] Ibid., p. 17

The White Paper does however present more detailed figures on the scale of state ownership in firms listed on the Oslo Stock Exchange (OSE) - that is in *ordinary joint stock companies* in which the State holds shares. The estimate of the State's share of total OSE values in the period 1994-2001 is approximately 15%.[35] This estimate seems to be accordance with the findings of Øyvind Bøhren and Bernt Arne Ødegaard in their project on corporate governance at the Department of Financial Economics, Norwegian School of Management BI. The project - which was started in 1998 - focuses upon OSE listed firms in the period 1989-1997. In this period, the aggregate holdings of the State are estimated to amount to 18% of total values.[36] Through their project, Bøhren and Ødegaard have produced valuable data on the ownership structure in Norwegian listed firms. Their results with regards to the characteristics of state ownership are presented below.

With a state ownership share in listed firms of approximately 15-18% in the 1990s, Norway stands out in comparison with other advanced capitalist economies. According to the White Paper, state ownership shares in European countries, USA and Japan were on average less than 10% in the period 1994-1999. In this period, the Norwegian share was only matched by that of Finland (approximately 17%) and Italy (approximately 23%).[37] In this connection it is worth noticing that the Norwegian State's share of total OSE values had increased to 37,4% by the end of 2001. In the White Paper, this increase is ascribed to the aforementioned stock-exchange listing of Telenor in 2000 and of Statoil in 2001.[38] Norway's dominant position is explained by the fact that the State owns substantial parts of a limited number of really large companies. These companies, and the state's respective ownership shares (as of 2002), are presented in table 2.5.

Table 2.5. Large state industrial holdings, 2002

COMPANY	STATE OWNERSHIP SHARE (%)
STATOIL	**81,78**
TELENOR	**77,68**
RAUFOSS	**50,27**
KONGSBERG GRUPPEN	**50,001**
DNB	**47,3**

[35] Ibid., p. 18

[36] Bøhren, Øyvind and Ødegaard, Bernt Arne, *Norsk eierskap: Særtrekk og sære trekk*, Department of Financial Economics, Norwegian School of Management BI, April 24, 2002, p. 7

[37] White Paper No 22 (2001-2002), *Reduced and improved state ownership*, p. 18

[38] Ibid., p. 18

NORSK HYDRO	**43,82**

Source: White Paper No 22 (2001-2002), *Reduced and improved state ownership*, p. 20

Statoil, Telenor, DnB and Norsk Hydro are four out of the five largest companies in OSE, which together represent almost 50% of the OSE's total market capitalization.[39]

General characteristics

The corporate governance project run by Bøhren and Ødegaard at BI, has provided valuable insights into the characteristics of state ownership in publicly listed firms. On the grounds that there exist little systemized knowledge on Norwegian ownership, the project has inquired into owner types and ownership concentration in all firms listed on the Oslo Stock Exchange over the period 1987-1997. *State* ownership is one of the five owner types that are identified, the others being *international*, *institutional* (financial), *personal*, and *industrial* ownership.[40]

As pointed out above, Bøhren and Ødegaard find that the State's ownership share in the period in question is 18% of total OSE values. This place state ownership as more substantial than personal ownership, equal to institutional ownership, but more limited than international and industrial ownership respectively.[41] They also find that state ownership is more prominent in certain industries and certain types of companies than others. While state ownership is almost absent within shipping and small and medium sized enterprises (SMEs), it is substantial within manufacturing industry and finance.[42]

When it comes to ownership concentration, Bøhren and Ødegaard come to the general conclusion that the largest owner tend to be small, but that the second and third largest owners are relatively large.[43] With regards to state ownership, they find that the State is generally underrepresented among the largest owners. Hence, they point to a tendency for the state to be an *anonymous* owner.[44] In addition to being anonymous -

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[39] Ibid., p. 20

[40] Bøhren, Øyvind and Ødegaard, Bernt Arne, *Norsk eierskap: Særtrekk og sære trekk*, Department of Financial Economics, Norwegian School of Management BI, April 24, 2002, p. 7

[41] Ibid., p. 7

[42] Ibid., pp. 7-9

[43] Ibid., p. 15

[44] Ibid., p. 17

meaning small, the State is generally said to be a *passive* owner. This point is e.g. made by Byrkjeland and Langeland, who also point to the general tendency for the State to be an owner with a long term perspective, emphasizing value creation *over time*.[45] The picture of state ownership drawn up by Byrkjeland and Langeland, as well as other researchers will be presented further in the next section, on the Norwegian debate on state ownership.

[45] Byrkjeland, Martin and Langeland, Ove, 'State ownership in Norway 1945-2000', FAFO 2000:22, pp. 79, 81

3. The Norwegian debate on state ownership

A pertinent, but basic observation about the debate on state ownership in Post World War II Norway is that it has been going on more or less uninterruptedly. To a large part, the debate has been shaped by particular events (such as the King's Bay affair) and the balance of political power. For several decades, the leading force in Norwegian politics was the Labour Party, and the debate in these years was structured along a right-left axis. The socialists wanted state ownership as part of a policy oriented towards a planning and rational Government, while conservatives and liberals opposed and feared these efforts. However, Labour very early on compromised with respect to the more radical ideas about planned economy and government control. Still, activities to build a strong, technologically savvy industry in a setting where Government was involved 'on all sides of the table' went on well into the 1970s.[46]

There is no need to go into the details of the specificities of the debate over the very long period it has been going on. What we wish to do here is to look into the debate as it is shaped today. Even with this limitation in mind, we do not wish to develop a comprehensive analysis with respect to all available literature, nor the details of the complete political debate. What we have done, is a to make a quite narrow selection of contributions that we find are essential to grasp what has been going on and what have been the key themes.

We do distinguish between academic and political debate, and start out with the latter. We also have chosen to start out with a synthetic presentation of the view on state ownership of the aforementioned scholars Shleifer and Vishny. Their view, which is strongly coloured by the line of thinking we have termed *the maximizing shareholder value model*, serves very well as a backdrop that makes it significantly easier to characterize the various contributions to the debate that we analyse in the following.

Shleifer and Vishny's view on state ownership

According to Shleifer and Vishny 'corporate governance deals with the ways in which suppliers of finance to corporations assure themselves of getting a return on their investments.'[47] The central issue in their approach is *the agency problem* - the

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[46] see Slagstad, Rune, *De nasjonale strateger*, Oslo: Pax forlag, 1998; see also Ørstavik, Finn, *Engineers as masterbuilders of society. Technology creation and institution building at the Norwegian Defense Research Establishment through 2 decades*, Magister Artium thesis in sociology, Oslo: University of Oslo, 1989 and Ørstavik, Finn, *The hierarchical systems paradigm in technological innovation*, Dr. Philos thesis, Oslo: The University of Oslo, 1996, for analyses of the innovation system building which happened around the Norwegian Defence Research Establishment and Institute for Atomic Energy

[47] Shleifer, Andrei and Vishny, Robert W., 'A Survey of Corporate Governance', in *The Journal of Finance*, Vol LII, No 2, June 1997, p. 737

problem that the managers of a corporation do not necessarily act in accordance with the owners' interest in maximizing profits.

A common argument in favour of state ownership is that there is a need to secure social welfare, and that such welfare concerns may not be addressed by firms which are run according to the principle of profit-maximization. An example of this would be supply of water and electricity, which many would claim should be provided by the State on a non-profit basis, and not by individual firms striving to maximize their profits. Shleifer and Vishny agree to the validity of this argument. However, they maintain that in reality, state companies do not live up to the demands put on them in this respect. Quite contrary to the substance of the welfare argument, state companies frequently disregard broader welfare concerns. Not only are the objectives pursued by these firms narrow and related to firm specific issues, also the core of these narrow issues are disregarded, as state companies in general are extremely inefficient. Thus, state ownership cannot be justified on the grounds of social welfare.[48]

The alleged weaknesses of state companies are explained by their deviation from the principle that the control of a company should be vested in the hands of its owners. While state companies in theory are owned by the taxpaying public, they are controlled by bureaucrats. Hence the companies are run according to the goals of bureaucrats, which in Shleifer and Vishny's opinion are neither social welfare nor maximizing profits. Bureaucrats are first of all inclined to pursue their own political interests, such as securing votes by catering for the interests of special interest groups - i.e. public employee trade unions, who 'not surprisingly typically strongly support state ownership.'[49]

Thus, a basic general observation about typical state firms, such as public waterworks, electricity providers, telephone companies and transport companies, is that their operations are more concerned with making the working days easier for employees, the workplaces secure, and the managerial scope of leaders as big as possible, than to serve their clients as well and as efficiently as possible. Shleifer and Vishny appear to think that these observations are so obvious that they do not need to be substantiated by facts. And maybe they are? Their view is - irrespectively of the lack of factual proof - widely shared. And their conclusion with respect to the observed inefficiencies is in any case uncontroversial: 'The recognition of enormous inefficiency of state firms, and the pressure on state budgets, has created a common response around the world in the last few years, namely privatization.'

How then does the Norwegian debate on state ownership stand out against this background? The international wave of privatization Shleifer and Vishny point to holds true for Norway. As mentioned in section 2, the country has seen an emerging trend towards state divestiture and privatization in the last two decades. According to Bøhren and Ødegaard, this trend reflects that it is a widely held view among both politicians and the public that private ownership is more conducive to value creation than state ownership.[50] That there is scepticism with respect to the efficiency of state

[48] Ibid., pp. 767-768

[49] Ibid., p. 768

[50] Bøhren, Øyvind and Ødegaard, Bernt Arne, *Norsk eierskap: Særtrekk og sære trekk*, Department of Financial Economics, Norwegian School of Management BI, April 24, 2002, pp. 2, 4

owned firms does not, however, mean that there is a general opposition to state ownership altogether. It is a common view that the Norwegian State *can* and *should* safeguard social welfare concerns, also by acting as an owner of companies when this is appropriate. The differences of opinion, and hence the debate, relate to the following two issues: (1) *to what extent the State should be an industrial owner*; and (2) *how the State in practice should approach the issue of governance within its holdings*.

This holds for the political debate, as well as for the more academic and scholarly debate. In the following, we first focus on the former. We address the recent debate by way of a content analysis of the current Government's White Paper on ownership, and on an analysis of the reactions to this paper. We demonstrate that the debate follows traditional ideological differences along the left-right axis in the political system.

The scholarly debate is analysed in the ensuing section 3.3 of this chapter.

The political debate on state ownership

The title of the aforementioned White Paper *Reduced and improved ownership* published by the present Government (2002), in a telling way strikes a balance between opposing views on state ownership: In addition to signalling that the Government is concerned with state ownership and its potential inefficiency, the title at the same time indicates that the Government is in favour of keeping some level of state involvement on the owner side.[51] Reducing the State's role as an industrial owner is important, but there are instances where state ownership is still called for. In these cases, the objective must be to make the State a better owner.

The main argument for reducing state ownership is that the ever more important trend towards globalization increasingly puts pressures on firms and organizations to be flexible in their response to changing framework conditions and increased competition. This first and foremost creates a need for a more competent and active ownership. The government believes that private owners have a better capacity to meet these needs, and to act as good owners, than the State.[52] Thus, *good* ownership is explicitly associated with *private* ownership. The White Paper refers to *the agency problem* as a theoretical basis for this view. It argues that private ownership implies a more direct line of control between owners and management than institutional - including state - ownership. Hence, private ownership is seen as more conducive to firms being run according to the profit-maximizing interests of the owners, and therefore also to value creation.[53]

Against this background, the Government argues that state ownership should be limited to companies with key functions relating to administrative and political goals, e.g. the exploitation of natural resources for the common good, the development and maintenance of infrastructure, the strengthening of national R&D activities, the

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[51] This reflects that the Government is a coalition, but also that the Conservative party traditionally has been in favour of state ownership in particular cases.

[52] White Paper No 22 (2001-2002), *Reduced and improved state ownership*, p. 6

[53] Ibid., p. 13

securing of social welfare, etc.[54] However, the White Paper stresses that in many cases, such goals can be addressed just as efficiently through laws, concessions, etc. - that is, by the State acting as a *regulator*. The argument is that whenever this is the case, the State should *prefer the role as regulator to that as industrial owner*.[55]

The clarification of the objectives of - and alternatives to - state ownership, is by the Government meant to provide a basis for continually assessing the State’s role as an industrial owner. Where such a role is called for, the White Paper stresses the need to improve the organization and administration of state ownership. The aim is to make the State both a more *legitimate* and a more *professional* and *effective* owner. In this connection, great emphasis is placed upon drawing a clear line between the State’s parallel functions as owner and as regulator. One way of doing this, would be to concentrate state ownership in *one* Ministry. In addition to providing a clearer separation of ownership and regulation responsibilities respectively, such a concentration could potentially make ownership more efficient. The administration of several companies which are partly or wholly owned by the State has already been concentrated in the Ministry of Industry and Trade,[56] and the Government recommends that this trend be continued.[57]

The White Paper also expresses the view that state ownership in general should be administered according to the same principles as private ownership. Against this background, it presents ten principles for *good* state ownership. These include that shareholders are to be treated equally; that there should be openness with regards to state ownership; that the general meeting should be the forum for ownership decisions; that the State is to decide upon goals, while the board is responsible for realizing these goals; that there should be wage- and incentive-schemes conducive to value creation, etc.[58]

As mentioned earlier, the widely held positive view on private ownership in Norway which Bøhren and Ødegaard point to,[59] does not imply that there is a general consensus regarding the need to reduce state ownership. Opinions differ on the extent to which the State should be an industrial owner. In the political debate, these differences seem to a large degree to be ideologically founded. The view of the present Government can be understood in the context of its centre-right position in Norwegian politics, and not least the dominant position of the Conservative party. A few years ago, this party’s liberal stance *against* state ownership was strongly expressed in the report *Statlig eiermakt i norsk næringsliv*.[60] As is shown by the

[54] Ibid., pp. 6, 44-46

[55] Ibid., pp. 5, 46-47. Several alternatives to achieve political goals are possible as alternatives to outright ownership. For example, private firms may supply services on the basis of contracts. In this case, private companies will have to strive for a profit maximization goal that is lower than what would have been the case without the limitations and conditions specified in the contract.

[56] e.g. Statens Bankinvesteringsfond, SAS AB, SIVA SF and Statskraft SF

[57] White Paper No 22 (2001-2002), *Reduced and improved state ownership*, pp. 49-50

[58] Ibid., pp. 52-53

[59] Bøhren, Øyvind and Ødegaard, Bernt Arne, *Corporate governance and economic performance: A closer look*, Norwegian School of Management BI, November 8, 2001, pp. 2, 4

[60] Høyres Hovedorganisasjon, *Statlig eiermakt i norsk næringsliv*, Report No 5, Høyres Hovedorganisasjon, 1997

reactions to the Government's White Paper in Parliament and LO, the political left holds a much more positive view on state ownership. The majority in Parliament did not support the Government's ambition to reduce state ownership. The parliamentary debates over the White Paper clearly show that the parties to the political left hold a radically different opinion on both the need for, and the efficiency of state ownership.

Although stressing that it is not against reduced state ownership *in principle*, the Labour Party (AP) argues in favour of a continued substantial state ownership. Its main argument is that state ownership is of crucial importance if we wish to secure *national* ownership, and hence, good and interesting jobs for the present population as well as an income base for future generations. With increasing globalization, state ownership is seen as the only way of guaranteeing national ownership in the small and open Norwegian economy where private ownership milieus are limited. Also, AP believes the State to be a *good* industrial owner, and stress that history has proved state ownership to be efficient and conducive to a positive industrial development. [61]

The Socialist Left Party (SV) also argues in favour of a continued strong state ownership by referring to the need to secure national industrial ownership. In addition, this party stresses the relationship between *innovation* and economic performance. The Government is accused of believing that increased competition and private ownership *in itself* will promote industrial development. Hence, the crucial importance of factors such as competence building and the ability to innovate is ignored. It is argued that if we view economic performance in an *innovation perspective*, the need for private ownership becomes less clear - state ownership may e.g. be conducive to long term future oriented competence building. However, SV's arguments are fairly theoretical, and not substantiated by concrete examples.[62]

The reaction of the majority of Parliament to the Government's White Paper was approved by LO - the Norwegian Confederation of Trade Unions - who sees it as a clear statement in favour of a continued strong state ownership and as a victory for those who appreciate the social value of the State acting as an industrial owner. Reflecting the stance of the Labour Party, LO is not opposed to reducing state ownership *per se* but stresses the importance of state ownership as an instrument to secure *national* ownership. LO also shares AP's view that the State in general is a good and competent owner, and argues that the criticism against state companies to a large degree is based on the ideology of the political right. In addition, the Government's White Paper is criticized for failing to provide a clear political basis for assessing and improving state ownership in the future.[63]

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[61] Recommendations to Parliament No.264 (2001-2002) (Innst.S.nr.264 (2001-2002)), *Innstilling fra næringskomiteen om et mindre og bedre statlig eierskap*, http://www.stortinget.no/inns/200102-264-002.html; Parliamentary debate on Innst.S.nr.264 (2001-2002), *Innstilling fra næringskomiteen om et mindre og bedre statlig eierskap*, 18.06.02, http://www.stortinget.no/stid/2001/s020618-09.html

[62] Ibid.

[63] *Dagsavisen*, 02.07.02, 'Gjennomtenkt statlig eierskap' (interview with LO's second leader Roar Flåthen); Valla, Gerd-Liv, *LOs syn på eierskap i norsk næringsliv*, http://www.lo.no

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To sum up: The political debate on state ownership is today, as earlier, in good part ideologically founded - the differences of opinion seem to follow the demarcation line between the political left and the political right. The parties to the right generally advocate private ownership on the grounds that state ownership is inefficient, while the parties to the left hold a much more positive view on the state's competence - and role - as an industrial owner.

Thus - although the extreme position of Shleifer and Vishny is absent in the Norwegian political debate - there are differing views on whether or not the state should act as an industrial owner. However, while the parties to the right are opposed to state ownership *in principle*, we have seen that they admit to a certain practical need for such ownership in order to address social concerns. Hence, the matter in question in the Norwegian political debate is not *if*, but *to what extent* the state should act as an owner.

Another observation about the political debate is that it for a large part lacks concrete, empirically substantiated arguments. The fact that it follows traditional differences along the political right-left axis, seems to imply that the parties for a large part are content with attacking each other's views, without finding the need to substantiate their own arguments to any serious extent. The centre-right Government's claim that state ownership is inefficient is made with reference to the agency problem, while the left - represented by the Labour Party - defends the role of the state as an industrial owner by simply referring to history. We have seen that the Socialist Left party actually upholds that the traditional lines of argumentation become less relevant if we take on an innovation perspective. This claim seems, however, to be motivated by a wish to undermine the argumentation of the political right, rather than being a serious attempt to introduce the issue of innovation into the debate on state ownership and corporate governance. Hence, we may conclude that the question of how innovation comes about is nearly absent in today's Norwegian political debate on state ownership. Whether this is this the case also in more scholarly debate on the issue of corporate governance and state ownership is the question we turn to next.

The academic debate

The Norwegian academic debate on state ownership is neither filled with controversy nor characterized by fundamental differences in the understanding of basic issues. One fundamental issue involved in the debate is constitutional. It concerns the principal demarcation lines that are drawn between business and politics, and the constitutional need to distinguish between roles and responsibilities in the overall social system. Beyond this issue, the academic debate is preoccupied with empirical issues, and with reflecting on the state of affairs in Norway in the light of economic theory. Many writers point out that there is a need for more theoretical and empirical research and for a clarification of types of state involvement, as well as a clarification of the diverse motives for state ownership.

Bøhren and Ødegaard: The Corporate Governance Project

The project on corporate governance at the Norwegian School of Management headed by Bøhren and Ødegaard, which has been referred to earlier, has a double focus. First, it outlines the central characteristics of the ownership structure in Norwegian listed firms. Second, these data are used to analyse how ownership structure influences economic performance.

Bøhren and Ødegaard observe how the relationship between corporate governance and economic performance has become an active field of research internationally.[64] With regards to the Norwegian debate, they maintain that whereas opinions are strong and differing, the knowledge base is limited.[65] As to the issue of state ownership, they refer to the tendency for the political and popular opinion to be that private ownership is more conducive to value creation than state ownership. They argue that this opinion is based on the views that the State is a passive owner; that the people that represent the State in general lack competence when it comes to running businesses. Furthermore, public decision making is too slow; and the State as an owner gives preference to political goals rather than business considerations; and it is unable to separate clearly its parallel roles as owner and regulator.[66]

Although Bøhren and Ødegaard focus upon corporate governance in general, state ownership is one of the types of ownership which are analysed. Hence, their work does provide valuable inputs to the debate on state ownership.[67] Their outline of the ownership structure in OSE listed firms shows that state ownership is substantial. Against this background Bøhren and Ødegaard raise the question of what happens to monitoring quality when managers to a large extent are monitored by civil servants rather than by the actual owners.[68] They do not try to answer this question, but it is quite clear that they are preoccupied with what we have earlier called the agency problem: State ownership is perceived by the authors as implying problems with regard to efficient control, since the task of disciplining the management is mainly placed in the hands of bureaucrats instead of the owners.

Bøhren and Ødegaard's work on the relationship between corporate governance and economic performance consists in a general analysis on the basis of a wide set of ownership variables. One of their findings is central to the debate on state ownership, namely that direct ownership is more value creating than indirect ownership.[69] They write: 'An agency interpretation of this finding is that with personal owners, the

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[64] Bøhren, Øyvind and Ødegaard, Bernt Arne, *Patterns of corporate ownership: Insights from a unique data set*, Norwegian School of Management BI, January 29, 2001, p. 35

[65] Bøhren, Øyvind and Ødegaard, Bernt Arne, *Norsk eierskap: Særtrekk og sære trekk*, Department of Financial Economics, Norwegian School of Management BI, April 24, 2002, p. 22

[66] Ibid., p. 4

[67] It should be noticed, however, that their focus upon *listed* firms implies a rather limited scope.

[68] Bøhren, Øyvind and Ødegaard, Bernt Arne, *Patterns of corporate ownership: Insights from a unique data set*, Norwegian School of Management BI, January 29, 2001, p. 31

[69] Bøhren, Øyvind and Ødegaard, Bernt Arne, *Corporate governance and economic performance: A closer look*, Norwegian School of Management BI, November 8, 2001, p. 36

agent is directly monitored by the principal rather than by intermediate agents acting on the principal's behalf.'[70] Hence, state ownership - as an example of indirect ownership - stands out as relatively unfavourable to value creation due to fact that multiple-agent relationships are value-destroying.

As we see, the agency perspective again appears prominent. Also, the writers uphold that 'As far back as 225 years ago Adam Smith maintained that human nature is so frail that most people administer their own money better than others.'[71] However, Bøhren and Ødegaard do not adopt the arguments of the maximizing shareholder value model uncritically. They point out that indirect owners can compensate for their lack of control incentives by being more competent owners than personal investors - at least 'In theory, the incentive-disadvantages of indirect ownership can be more than equalized by a higher degree of professionalism and better access to information.'[72] Also, they stress that there may be benefits to indirect ownership which are not captured by the maximizing shareholder value model nor by their own analysis. These arguments are, however, introduced with reference to institutional and industrial ownership, not state ownership.[73]

To conclude: Although not uncritical promoters of the maximizing shareholder value model, Bøhren and Ødegaard can be said to represent this tradition in that it seems to be their dominant theoretical point of orientation. Against this background, their opinion on indirect - and hence state - ownership seems to be that it is less conducive to value creation than private ownership, but that this problem can be addressed by making sure the monitoring agents have the incentives to act in accordance with the interests of the owners.[74]

Byrkjeland and Langeland

In addition to outlining the historical development of state ownership in Norway, Martin Byrkjeland and Ove Langeland in their aforementioned FAFO working paper bring attention to the nature of state ownership more generally. They also discuss both the justification of the State acting as an owner and the challenges relating to the organization and administration of state companies.

The question of whether state ownership can be justified is related to the issues of *efficiency* and *legitimacy*. Byrkjeland and Langeland go far in questioning the efficiency of state companies. They refer to recent international research indicating that private ownership is more efficient than state ownership when it comes to both product development and productivity.[75] According to Langeland and Byrkjeland,

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[70] Ibid., p. 25

[71] Bøhren, Øyvind and Ødegaard, Bernt Arne, *Norsk eierskap: Særtrekk og sære trekk*, Department of Financial Economics, Norwegian School of Management BI, April 24, 2002, p. 5

[72] Ibid., p. 5

[73] Ibid., p. 5; Bøhren, Øyvind and Ødegaard, Bernt Arne, *Corporate governance and economic performance: A closer look*, Norwegian School of Management BI, November 8, 2001, p. 25

[74] Bøhren, Øyvind and Ødegaard, Bernt Arne, *Norsk eierskap: Særtrekk og sære trekk*, Department of Financial Economics, Norwegian School of Management BI, April 24, 2002, p. 20

[75] Byrkjeland, Martin and Langeland, Ove, *State ownership in Norway 1945-2000*, FAFO working paper 2000:22, FAFO, 2000, p. 21

several idiosyncrasies applying to state ownership set limits to its efficiency. For one thing, the State is a complex owner. It is made up of several political and administrative actors with varying - and in some cases conflicting - interests and goals. The fact that state companies are to operate according to social as well as economic goals obviously only deepens this complexity. Another point is that the distance between owner and management is particularly long in state companies. Between the owner - the Norwegian people - and the management, stand Parliament, the Government, the responsible Minister, and the company board. This fragmented control structure accentuates *the agency problem* according to the two authors. This problem is made even more pressing by the fact that state companies lack several of the mechanisms for disciplining management which are available to private firms.[76] In addition, there are problems related to the efficiency of the company board as a disciplining mechanism. These problems have to do with the facts that the board is to address both political and economic goals, and that there exists no formal instructions as to its functions. Hence, the responsibilities of the board are often unclear.[77] In questioning the efficiency of state companies, Byrkjeland and Langeland make the same point as Shleifer and Vishny - that the bureaucrats who run these companies may be more concerned with their own political interests than with economic efficiency.[78]

To Byrkjeland and Langeland, the inefficiency of state companies is in itself a challenge to the legitimacy of state ownership.[79] The question of legitimacy is made even more pressing by the State’s parallel functions as owner and regulator. The fact that the State both owns, and decides upon the general terms for, industrial enterprise raises doubts as to the fairness of competition. In Byrkjeland and Langeland’s view the State’s main role is to be a regulator, not an owner. They stress that the need to secure social goals, which is frequently used to justify the State’s role as an industrial owner, can be addressed in other ways than through ownership - for instance through regulations, concessions, and commission financing.[80]

Byrkjeland and Langeland do however accept the argument that the removal of trade barriers and the deregulation of capital markets we see today reduce the efficiency of regulations and accentuate the need for control through ownership. This holds especially true when it comes to securing national ownership. In this connection, Byrkjeland and Langeland maintain that ‘If we accept the argument that industrial activity is not only affected by the general rationality of the market, but also by institutional and cultural factors which must be seen in the context of states and nations, the need for control can still be a central argument in favour of state ownership of key enterprises.’[81]

In addition to acknowledging a certain need for state ownership, the authors stress that the tendency for state companies to be associated with unsuccessful investments, low profits, etc. can not be ascribed to their inefficiency alone. It must also be understood in the context of the facts that state companies are particularly exposed to

[76] Ibid., pp. 24-26

[77] Ibid., p. 17

[78] Ibid., p. 25

[79] Ibid., p. 26

[80] Ibid., pp. 83-84

[81] Ibid., p. 83

public attention; that there is generally more focus on failure than on success; and that state companies in general are large and hence exposed to high risk. Byrkjeland and Langeland also argue that aspects of state ownership which are commonly perceived to be negative may not be so if we take on a long term perspective. They question whether the general tendency for state companies to react slowly to external conditions is exclusively negative. They refer to Kongsberg Våpenfabrikk as a point in matter. Although the economic performance of this company was poor, and extraordinary state support was called for on several occasions, it may appear that the long term competence building which took place may have been crucial to the activities of Kongsberg Gruppen today.[82]

In so far as the State *should* act as an industrial owner, Byrkjeland and Langeland point to several challenges relating to how state ownership should be organized and administered. Important challenges relate to the balancing on the one hand of political and economic goals, and on the other hand of the State's parallel functions as owner and regulator. The trend goes in the direction of state companies being run more professionally and according to business considerations, and of establishing institutional divisions between the roles of owner and regulator.[83] The authors state that 'Professionalization […] and increased focus on profits may reduce problems relating to state ownership, but will not eliminate them. The State will in the last resort always be a political, not an economic owner. Business considerations must always be weighed against political goals.'[84] They also argue that a reduction in the State's decision making powers raises the question of why the State should act as an owner in the first place. As mentioned earlier, Byrkjeland and Langeland maintain that the State's main role is to be a regulator. Therefore, they argue that the question of how the State can control private firms through regulations will become increasingly important in the future.[85]

To sum up: Byrkjeland and Langeland have respect for institutional arguments, and consider the regulatory role of the State as its primary role. They are worried about the intrinsic problems of state ownership, and question to what extent such ownership can become effective given the actual structure and mode of functioning that prevails in the State. The authors do not, however, follow Shleifer and Vishny in their total disregard for a possible upside. In particular, they keep the door open for the possibility that economic agents are not free from nationalistic bias and cultural specificities, and point out that in a globalising economy, state ownership is one of the few means of national control that remains. Also, they stress that state ownership may be conducive to long term competence building, and hence to value creation over time.

Statskonsult

While Byrkjeland and Langeland address the question of whether or not the State *should* act as an owner, the before mentioned 1998 Statskonsult report concentrates on how state ownership *de facto* is organized and administered. The report is based

[82] Ibid., p. 82

[83] Ibid., p. 26

[84] Ibid., p. 77

[85] Ibid., p. 83

on a study of nineteen companies in which the state is owner, comprising the three different organizational forms *state companies*,[86] *state enterprises*, and *special-law firms*. The central issues are how governance is influenced by organization and how the State actually approaches the issue of governance within its holdings. In conclusion, the report presents a set of recommendations for the organization and administration of state companies in the future.

One conclusion in the report is that the choice between the respective organizational forms is not consistent with existing political guidelines.[87] According to these guidelines, the special-law firm alternative should be excluded, since the objectives of such firms may just as well be addressed by state enterprises. The choice between the state company form and the state enterprise form should be based on the relative importance of business and politics respectively. While the company form should be preferred when the main objective of the State is to engage in business, the enterprise form should be chosen when state ownership to a substantial degree is also seen as an instrument for achieving sectoral policy goals.[88] The study shows that the special-law firm form is still being used and that the choice between the other two organizational forms seems to be coincidental.[89]

Also, the report states that organizational form *in practice* is of little importance to how the State exerts ownership control. There are few variations in governance between the different organizational forms. The variations in governance that do occur tend to be related to distinctive features of the individual firms, rather than to organization. All in all, the report identifies a general approach by the state with regards to the governance of its holding. For one thing, the State is said to exert ownership control through the formal channels of the companies. It is argued that the responsible Ministers are very anxious to follow the explicit, formal 'rules of the game'. Secondly, it is maintained that the State chooses to be a passive owner. The contact between the companies and the responsible Ministers tends to be limited - and usually initiated by the company management or board. Also, the Ministers rarely exert control through general meetings. This is true even for companies which play an important socio-political role.[90] As possible reasons for the formal and passive role played by the State, Statskonsult suggests that it lacks substantial experience with controlling companies, and is afraid to transmit the governance structure of administrative agencies to state companies; that the State's competence regarding the activities of the companies is limited, and that it therefore chooses to place the main responsibility for the running of the companies in the hands of the boards; and that the relationship between the State and the company boards is characterized by mutual trust, and that conflicts seldom arise because the company

[86] Covering both *wholly owned state companies* and *part owned joint stock companies* - cfr. overview of different types of organizational forms in section 2

[87] As expressed in White Paper No 35 (1991-92), *Om statens forvaltnings- og personalpolitikk*

[88] Statskonsult, *I godt selskap? Statlig eierstyring i teori og praksis*, Report 1998:21, Statskonsult, 1998., p. 24

[89] Ibid., p. 35-36

[90] Ibid., pp. 75-76

listens to political signals, and there is a mutual understanding of the needs of the companies.[91]

A general conclusion in Statskonsult's report is that the State - through the government Ministers - pays little attention to formal guidelines when choosing the organizational form for its holdings, while it is very anxious to follow formal rules when it comes to exerting ownership control.[92] Based on its findings, Statskonsult presents a set of recommendations. First, it is argued that the existing political guidelines for the choice between organizational forms should be upheld and clarified, and that the guidelines should be followed to a larger degree than they are today. In this connection, Statskonsult maintains that the State should also consider alternative ways of addressing socio-political goals than through ownership. Secondly, the need to improve state ownership is stressed. One point in matter is that the State should provide the company boards with clear instructions, in order to clarify the boards' responsibilities vis-à-vis the owner as well as the management. A third and related recommendation, is that the State's competence regarding corporate governance should be improved. One suggestion in this direction is the establishment of an inter-ministerial forum for the exchange of experience and advice, and the preparation of an instruction book on corporate governance in state companies.[93]

Conference on ownership and power, The research project Power and Democracy

In a similar vein as Statskonsult, the historian Tore Grønlie has over several years studied how governance in state companies *de facto* is practiced. In the particular article we base the present analysis on, he expresses no opinion on whether the State *should* act as an owner. However, based on his historical studies of the post war period he disagrees with Statskonsult's conclusion that political control tends to be exerted through formal channels. The cited article, where Grønlie makes this point, was published in a report from the conference on ownership and power, which was arranged in connection with the on-going research project *Power and Democracy - Makt- og demokratiutredningen* - in 1999. [94] State ownership was one of three main issues that were addressed at the conference. The focus upon state ownership was explained with reference to the State's role as the largest individual owner in Norwegian industry and to the fact that it has become increasingly common to question the justification of state ownership.[95] In addition to Grønlie, Per Tore Woie and Rune Slagstad participated in the session on state ownership. Woie was at the time Parliamentary Secretary in the first Bondevik centre-coalition government, and his views are well covered in our discussion of the current centre-right coalition that was presented earlier. Rune Slagstad's views on state ownership are discussed below.

The central question in Grønlie's article is *who controls state companies*? His point of departure is the set of principles which are generally upheld as guidelines for the

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[91] Ibid., p. 87

[92] Ibid., p. 83

[93] Ibid., pp. 89-91

[94] *Eierskap og makt – konferanserapport*, *Report Series*, No 11, Oslo: Makt- og demokratiutredningen, 2000

[95] Ibid., p. 3

balancing of business and politics in state companies. These principles include, firstly, the separation of business issues from overriding strategic issues. While business issues are to be the sole responsibility of the company, strategic issues both can and should be subjected to political control. Secondly, the right to give political instruction is to lie with the responsible Minister. Other political actors - such as Parliament - are to act through him. The third principle is that political control is to be exerted through the company's formal channels for decision making - primarily the board or the general meeting.[96]

Grønlie's main argument is that these guidelines are not followed in practice. Although focusing on state companies [97] - which are commonly considered to be the organizational form with the clearest division lines between business and politics - Grønlie maintains that his line of reasoning applies to state enterprises and special-law firms as well. He argues that history has shown that it is difficult to draw up clear dividing lines between business and politics. Based on his historical studies, he points to two general features of the governance of state companies: The first being that *strategic political control tends to be limited*; the second that *political control rarely is exerted through the companies' formal channels for decision-making*.[98]

According to Grønlie, the State limits its interference in state companies. When political control is exerted, it is in most cases a response to media attention, economic crises, the need for readjustment, political opportunism, etc.[99] In accordance with Statskonsult's conclusions, he points out that neither historically nor presently has the general meeting been used as an active control instrument by the State.[100] This is also said to be true when it comes to the company board. Similarly to Statskonsult, Grønlie stresses that there exists no formal political instruction for the boards. Neither is there any overriding, explicit policy behind the appointment of board members. Hence, Grønlie argues that the board profile is at any point in time determined by the composition of board members. He states that the boards have had different profiles over time. The typical state company board of today is characterized as a *professional board*, in which business considerations are the centre of attention and political interference is not wished for.[101] In Grønlie's opinion, the limited political interference must also be seen in connection with the general aspirations of the management of state companies to act as independently as possible. The managers' main focus is upon business considerations rather than upon socio-political goals. In addition, Grønlie argues that management is generally ready to enter into conflicts with the State in order to defend its freedom of action and to secure future profits. Management is however said to readily embrace the *benefits* of being owned by the State, such as access to public funds and safety, and to exert political pressure whenever this is in the interest of the company.[102]

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[96] Ibid., p. 81

[97] *wholly owned state companies* and *part owned joint stock companies*

[98] *Eierskap og makt – konferanserapport, Report Series*, No 11, Oslo: Makt- og demokratiutredningen, 2000, p. 82

[99] Ibid., p. 82

[100] Ibid., pp. 86-87

[101] Ibid., pp. 84-85

[102] Ibid., pp. 83-84

Grønlie’s other point is that political control rarely is exerted through formal channels. Instead of being channelled through the responsible Minister, control is exerted by various political actors in several different ways. Grønlie also maintains that the Ministers themselves - at least at certain times and in certain companies - give strong control signals through informal rather than formal channels. This is said to indicate that Ministers *want* to exercise control, but that they are reluctant to accept the responsibilities that go along with it. While stating that these arguments are based on *historical* studies, Grønlie is of the opinion that informal political control is common even today. Hence, he questions the conclusion of Statskonsult’s study and argues that the empirical basis of this study is not suitable for drawing any conclusions as to the extent of informal control practices.[103]

While stressing that political control in general is limited, Grønlie argues that *Parliament* plays an active role in the control of state companies today. Parliament exerts control vis-à-vis the companies by defining frameworks within which economic action must take place. Also, parliamentary control is backed up by increased inspection of state companies by the Public Accounts Committee. [104] However, Grønlie points out that parliamentary control is not exerted according to any general principles or strategies, but rather opportunistically and in an ad hoc way. Neither is it always channelled through the responsible Minister.[105]

Against the background of these trends, Grønlie argues that there is no unitary governance system when it comes to state companies, but rather a multi-centred system in which different actors try to influence the running of the companies according to their own particular interests at a particular time.[106] Who then, control the state companies? Since the control system is so fragmented, with different actors trying to exert control according to their specific interests at any time, he maintains that the balance of power between the different actors becomes the central issue. He states that ‘It is hardly possible to name one winner - or a governor of governors - in this play for power. In spite of all weaknesses, the play have a kind of ”equilibrium” built into it, based on the institutional logic that is represented, and the position of the representative herself. In this fashion, the governing of state companies is a natural extension - or reflexion - of ”democracy the Norwegian way”.’[107] Grønlie does however point to two - opposite - trends, which in a fundamental way may have changed the balance of power. First, there has been an increase in parliamentary control. Secondly, ministerial control has decreased. Against this background, Grønlie suggests two ‘winners’ when it comes to who is controlling the state companies: The companies and Parliament. He does however raise the question whether parliamentary control actually affects the big and important issues - and states that if not, this leaves the companies as the overall winner.[108]

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[103] Ibid., pp. 82, 87-88

[104] Riksrevisjonen

[105] *Eierskap og makt – konferanserapport*, *Report Series*, No 11, Oslo: Makt- og demokratiutredningen, 2000, pp. 88-90

[106] Ibid., pp. 82-83

[107] Ibid., p. 90, in Norwegian: ’Det kan neppe utropes noen en vinner – eller øverste styrer i dette styringsspillet – som tross alle dets svakheter har en slags ”likevekt” bygd på deltagernes institusjonaliserte styringslogikk og maktposisjon. Slik er styring av statsselskap en naturlig variant – eller refleks - av ”demokrati på norsk”.’

[108] Ibid., pp. 91-92

In conclusion, Grønlie states that most will agree that there *are* problems related to the governance of state companies: There is a general absence of strategic control, and the degree of formal decision making is too low.[109] He also stresses the need for a more thorough debate over - and a clarification of - the objectives of state ownership in Norway. He predicts that we will continue to have relatively extensive state ownership, because there is a wide-held - albeit not necessarily well reflected - belief in state ownership as the best way of securing socio-political goals. As to the trend towards part privatization, which is upheld as an ideal way of balancing the interests of politics and business, Grønlie points out that the problems associated with reduced state control are not discussed. In a governance perspective, he believes part privatization is even more problematic than full privatization. While stressing that he as a researcher has no opinion of whether the part privatization process should be continued, he calls for increased discussion of the different organizational and governance forms of state enterprises. In his concluding remarks, Grønlie also expresses the opinion that the running of state companies *should* be the concern of politicians, and that we should look for improved ways of balancing business and politics in these companies.[110]

Like Grønlie, Rune Slagstad takes a historical approach to the question of state ownership in Norway. To him, our historical experience is a strong argument *in favour of a continued central role for the state as an industrial owner*. Slagstad maintains that the State has played a crucial role in Norwegian economic development in the last 150 years. Even in the middle of the nineteenth century, when economic liberalism was at its peak, the State was ascribed a central role in initiating and organizing economic activities. In addition to Norway's lack of a financially strong middle class and the country's underdeveloped commercial banking system, Slagstad explains this with reference to the existence of a strategic milieu which upheld the idea of a *planned liberalism*.[111] Fredrik Stang and A.M. Schweigaard were central actors in this milieu, which according to Slagstad - with reference to the words of Schweigaard - believed that 'The short-term and changeable nature of individual interests ascribes to the state the role of conductor: To unite separate forces and bring them into co-operation.'[112]

Slagstad stresses that Stang and Schweigaard held a *pragmatic* view on proprietory rights, which was still dominant at the beginning of the twentieth century when Norway experienced its industrial break-through. This view was that proprietory rights were to serve *social goals*. As an ample practical expression of this view, Slagstad points to the Concession Laws of the early decades of the twentieth century.[113] In the post-war period, the emphasis upon the social functions of proprietory rights was upheld by the Labour Party in its undertaking to modernize the country through promoting and combining economic and social development. Although the Labour Party was the central actor in this modernization process, Slagstad argues that it was rooted in a broader strategic milieu which consisted of

[109] Ibid., pp. 92-93

[110] Ibid., pp. 93-96

[111] Ibid., p. 97

[112] Ibid., p. 104

[113] Ibid., p. 101

politicians belonging to different political parties, as well as industrialists and scientist.[114]

Against this background, Slagstad turns to the developments of the 1980s and 1990s. In his words, these last two decades have seen ‘a remarkable change in mentality’: Private property is viewed as sacred and state industrial involvement as unnatural and unwanted. Slagstad accuses the advocates of this view of being ignorant of Norwegian history, which shows that the country’s economic development and growth in the last 150 years to a large degree has been facilitated by a strong and active state.[115] In his opinion, Schweigaard’s argument that state industrial involvement is necessary to secure strategic long term control of the economy is still valid. Slagstad’s main point, however, is that we need a strategic milieu - similar to the one’s we have seen in earlier times - for continually discussing and developing the strategic foundations for the development of Norwegian industry and society at large.[116]

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In conclusion, we note that the academic debate on state ownership in Norway follows many of the same lines as the political debate. None of the contributions we have surveyed repudiates state ownership altogether, in the way of Shleifer and Vishny. As in the political debate, there seem to be agreement that state ownership is needed in order to address social goals. There is, however, disagreement with regards to the efficiency of state ownership, and hence how extensive it should be. As we have seen, both Bøhren and Ødegaard and Byrkjeland and Langeland go far in questioning the efficiency of state companies. Their theoretical basis for doing so is the agency problem, and they also share Shleifer and Vishny’s scepticism as to the ability of bureaucrats to run businesses effectively. In the other end of the spectrum of the academic debate, we find Rune Slagstad who - in the same manner as the Labour Party - argues in favour of state industrial ownership on the basis of Norway’s historical experience. We have also seen - i.a. through the contributions by Statskonsult and Grønlie - that the debate partly revolves around the questions of how state ownership is and should be organized. The issue of how innovation relates to governance and economic performance is, however, absent - as it is in the political debate.

In the next section, we attempt to show how an innovation perspective may enrich the Norwegian debate on state ownership.

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[114] Ibid., pp. 99-100

[115] Ibid., pp. 98-102

[116] Ibid., pp. 103-105

4. Concluding notes on governance, state ownership and innovation

State ownership in the Norwegian governance debate

The international debate on corporate governance has two major weaknesses. First, with some notable exceptions,[117] the debate has a narrow concept of what a firm is; namely a rational actor with qualities making it substantially very similar to the individual conceptualized by mainstream economists as *economic man*. The launching pin of the governance debate then becomes the troubling realization that in economies where firms have their ownership split off from the management function, the simple, unitary and rationalistic economic model of the firm becomes unconvincing (even to economists themselves). *If owners and managers are not the same people, it is not obvious that firms act as profit maximizers even though the owners themselves strive to maximize profits and try to induce managers to do the same, on their behalf.* The debate which springs from such considerations are, as we have explained earlier, crucially concerned with this *agency problem*, and some of the normative governance analyses addressing this issue articulate what we have called *the maximizing shareholder value model*.

Second, the debate is marked by the fact that ownership in many contexts is treated as synonymous with *private ownership*. It is as if the ownership by individuals is considered the most basic and natural form of ownership, while institutional ownership is some kind of aberration from the normal and natural. As we have mentioned earlier, state companies are in general ignored in the international corporate governance debate.[118] In the Shleifer and Vishny case state ownership is taken into consideration, but the assessment of its significance is somewhat superficial, and especially lacking in historical context.[119]

In several countries - and as we have seen, also in Norway - state ownership is a salient feature in industry. This fact is recognized in the Norwegian governance debate. Our general finding is that the Norwegian debate is oriented towards two distinct foci: The first is the specific performance effects of state ownership. The second is the institutional issues related to the dual role of the State as business owner and regulator, and the various specific forms of state ownership that has been developed over time.

Also in the Norwegian debate it appears to be the rule rather than the exception that the underlying conceptual basis is strongly influenced by equilibrium oriented neoclassical economic thinking. And it is the agency problem and the maximizing

[117] Among the exceptions are O'Sullivan and her associates.

[118] Guldbrandsen, Trygve, *Internasjonal forskning om eierskap og kontroll i privat næringsliv*, ISF Report 99:2, Oslo: Institutt for samfunnsforskning, 1999

[119] In their view, state ownership is simply 'a manifestation of a radical failure of corporate governance.' Shleifer, Andrei and Vishny, Robert W., 'A Survey of Corporate Governance', in *The Journal of Finance*, Vol LII, No 2, June 1997, page 737.

shareholder value model that is the conceptual backdrop when efficiency of state owned firms is discussed. This applies as much to the political rhetoric as it applies to the more scholarly debate.

In spite of this, we do find that the Norwegian debate is much more nuanced with respect to state ownership than the international debate, at least as this international debate is assessed by Shleifer and Vishny. There is a remarkably broad consensus that state ownership plays a significant and positive role in a small country such as Norway. Furthermore, there is broad agreement that globalization serves to deepen the relevance of this positive function of state ownership, rather than to weaken it.

The overall impression is that we are confronted with a debate on state ownership and corporate governance being marked by a significant level of consensus, while lacking somewhat in consistency. We find that people agree both that state ownership is positive and necessary - and that it is problematic and should be avoided. The positive aspect of ownership is understood in strategic and pragmatic terms as a consequence of a distorted market; of market imperfections. The benchmarking of state ownership, thus, is done by contrasting the real world situation with the idealized image of a free market economy in its equilibrium state.

Even those who are not interested in economics *per se*, but who are concerned with state ownership as a deviation from sound norms of power sharing among key institutions in society, tend to share the idea that such ownership is an aberration from a pure and well functioning liberal capitalist system. Rune Slagstad criticizes this, as he points out that utopian liberalism has very little to do with the real issues and the real driving forces in modern economies. He is interested in state ownership as he sees this as but one expression of the fundamental fact that development historically has been driven by interactions and alliances that do not fit with utopian liberal ideas about economic and social life. Norway, and not least its industry, has been built to a very large extent on alliances between leaders in the political, economic and scientific spheres. In his view, the strategic efforts to build Norwegian society for fundamental reasons transgress the analytical distinctions that are drawn between the 'politics', 'business' and 'academia'. Developments disobey these analytical distinctions not because of 'perversions' of the functioning of society, but precisely because the distinctions made are unrealistic and unsuited to perform a penetrating analysis of social and economic change.[120]

State ownership in a systems oriented innovation perspective

The direction that Slagstad's argument points towards is in our view where analyses of the significance of state ownership in systems oriented innovation theory bring us.

Benchmarking state involvement in the economy against utopian ideals of pure, liberal societies, or pure market economies in an equilibrium state, are not at all pregnant strategies to understand the real significance of state ownership in the economy. *Innovation is the fundamental force of development of business and industry*. In a meaningful debate on corporate governance and state ownership, it is

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[120] Slagstad, Rune, *De nasjonale strateger*, Oslo: Pax forlag, 1998.

essential to look into the significance of ownership with respect to innovation. The specificities of innovation efforts as economic, administrative and professional endeavours must be taken into consideration, and the potential of state ownership as a means to foster business and industry highlighted.

For obvious reasons, we cannot here actually venture far into modern innovation theory and develop a well founded stance on the potential of state ownership on this basis. What we do want to show, however, is that it is essential to develop such arguments and to bring them into the state ownership and governance debate.

Stated succinctly, the fundamental shift that is required in the debate on state ownership and governance consists in a shift of attention; from an analysis of the *system of production* to a concern with the *system of innovation*. Instead of thinking in static terms, dynamics have to be highlighted. For example: While the performance of production systems may be properly evaluated in terms of input, output and time (addressing issues such as how much resources are consumed, how much produce generated, how much time this takes, and how predictable the processes are), this is less relevant for the assessment of performance of innovation systems.

The reason for this is simple to state, but the consequences more complex and unclear: Innovation is not only about producing, it is about *transforming*. Innovation basically consists in creating something new, and therefore obviously involves learning. However, 'the creation of something new' is a more complex object of study than one might expect. For one, creation is linked with destruction. Part and parcel with making something new is the destruction of something else. What is destroyed may be unimportant and inconsequential, as when the production line for one type of product is dismantled and a new production line set up. However, when innovation is *radical* it may destroy things that many find valuable and worth conserving. This, to mention but one example, happened when computer based layout and printing systems replaced conventional page setting and printing technologies.

A second feature of innovation that is contributing to making it a complex object of study, is that creating something new not only concerns materials and artefacts, but also cognition, meaning and - in a deep sense - politics. What is created has to be created as meaningful objects to significant others, and this makes innovation as much a social venture as a technical venture.[121]

The term heterogeneous network building has been coined to capture this essential trait of innovation processes,[122] and this concept can help us to see that the machine metaphor is much less relevant in the case of innovation systems than it is when it comes to grasping the logic of - and measuring the performance of - systems of production. Predictable processes and perfected routines are much less central as determinants of innovation; the creative ability to construct new things, and to convince others about their viability and usefulness certainly depends on skills and competence, but requires more than optimization of already established practices.

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[121] These issues have been discussed more fully in Ørstavik, Finn, *The hierarchical systems paradigm in technological innovation*, Dr. Philos thesis, Oslo: The University of Oslo, 1996.

[122] See for instance Latour, Bruno, *Science in action, How to follow scientists and engineers through* society, Milton Keynes: Open University Press, 1987

A key element of innovation, then, is the ability to invest: To commit resources to projects aimed at changing the ways the firm is doing its business in the future. This task is a difficult challenge for any organisation. It is widely recognised that investing for the future involves a conflict between present and future returns. Of course, any firm must not only invest for the future, but must make profits today, and there are necessarily conflicts over this.

Two further characteristics of innovation processes exacerbate problems in longer-term investment behaviour. One is the fact that innovation capabilities tend to be cumulative over time, and path-dependent. The second is uncertainty. Uncertainty in innovation processes is rarely a matter of risk assessment - that is, it is often not a matter of assigning a probability to some outcome. Rather, it is a more fundamental matter of not knowing what types of technological development paths may be those prevailing: What rival firms will be doing, what customers will want to adopt, and what regulatory authorities will do with issues of relevance for new business ventures, are all significant unknowns. Seen in this perspective, the management of innovation is primarily a matter of coping with uncertainty, and much depends on the extent to which firms can handle this uncertainty, and what they can do in order to reduce it.

In all these respects there is a link between the nature of the governance system (in the firm as well as in the economy), and the innovation efforts and investment decisions related to innovation. The governance system affects both the incentives and opportunities firms have to invest in innovation, as well as the opportunities firms have to reduce uncertainty related to the development paths that are selected.

State ownership takes on a new significance in this perspective. Such ownership directly influences the ability of firms to defer making profits, and thus their stamina with respect to carrying out demanding innovation efforts that span long periods of time. State ownership also opens up the firm and innovative strategies to reflect other priorities than those that would be most important under other circumstances. But beyond this, state ownership may open up completely new possibilities to reduce the fundamental uncertainty that is faced by innovators. What private firms may achieve by making strategic alliances with other important firms in terms of agreements on future development directions may not necessarily be easily matched by way of public ownership. Such alliances are extremely important in any innovative industry, as they reduce uncertainty and improve chances of innovative success. On the other hand, those regulatory uncertainties stemming from what private firms often see as an unpredictable and unmanageable public policy system may be alleviated by linking the firm into the system of government by way of direct ownership.

In an innovation oriented systems perspective, the role of state ownership takes on new significance because the role of the state as partner in creating and facilitating change is brought into the open. In infrastructure related industries such as telecommunications, this is maybe most readily apparent. But in all cases where businesses innovate, regulatory conditions are involved, and the state must play a role, facilitating, inhibiting and giving specific direction to change.

Epilogue

Under the leadership of individuals like Jens Chr. Hauge and Finn Lied, and with support from Labour Party leaders such as Einar Gerhardsen and Håkon Lie, Kongsberg in the period 1955 – 1975 was developed from an outdated and shattered post war armament producer, into a powerhouse of engineering competence producing advanced technology products such as the weapon systems Penguin, digital computers, and turbines. The concerted efforts of people in the policy system, in industry and in research laid the basis for a new industrial production and innovation system which generated products that it was possible to sell in competitive international markets. The firm, however, failed to generate sufficient income to secure net profitability of its operations. Ambitious innovation projects were established and the hope was always that these would eventually lead to commercial success. The state involvement in Kongsberg was significantly reduced and the firm was forced into bankruptcy in the 1980ies. Private investors bought into the firm, while the State continued to be a significant owner. As a result of increased private ownership, management changes and refocused strategies, the firm has managed to run a profitable business after these events. Popular opinion may be that this proves the impotence of the state as owner, and the need for the state to abstain from running businesses, and focus on playing a regulatory role. In reality, however, the success of KV over the last 20 years cannot be understood independently of the large scale strategic investments going on before 1980. Also, the performance of the firm in the years after cannot be seen as a result of laissez-faire as far as the Norwegian State is concerned. Politics and economics continue to be intermingled at Kongsberg, and the track record and future of the company is linked intimately to the ability of key people and institutions to interact constructively in the efforts to develop industry in Kongsberg to a vital knowledge intensive industrial cluster.

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In the fish farming industry today, private interests are dominating. After Norsk Hydro's exit from this industry, some of the largest firms show an almost exclusive preoccupation with short term profits. The idea has been to build economies of scale through mergers and acquisitions, but the logic of operations seems not to have changed significantly as the size of the overall operations has grown. In spite of attempts to build efficiency and market clout on the basis of production volume, it has proven to be impossible to make sufficient profits to finance the growth.

The reality is that core fish farming activities today are run in a way that reflect an overriding concern with simple price competition, and a lack of understanding of the role of innovation as a fundamental driving force in the industry. The focus is on cost cutting and realizing economies of scale through volume growth, while the need for innovation and the opportunity to develop competitive clout by transforming current products, operations and markets, tend to be overlooked. The need for cross-linking the various activities in the value chain and for developing common strategies for long term industry transformative growth is more or less ignored. The industry in this way ignores opportunities to build a potent innovation system, where research, market development, product diversification and production optimization are integrated into a functioning whole.

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STEP-gruppen ble etablert i 1991 for å forsyne beslutningstakere med forskning knyttet til alle sider ved innovasjon og teknologisk endring, med særlig vekt på forholdet mellom innovasjon, økonomisk vekst og de samfunnsmessige omgivelser. Basis for gruppens arbeid er erkjennelsen av at utviklingen innen vitenskap og teknologi er fundamental for økonomisk vekst. Det gjenstår likevel mange uløste problemer omkring hvordan prosessen med vitenskapelig og teknologisk endring forløper, og hvordan denne prosessen får samfunnsmessige og økonomiske konsekvenser. Forståelse av denne prosessen er av stor betydning for utformingen og iverksettelsen av forsknings-, teknologi- og innovasjonspolitikken. Forskningen i STEP-gruppen er derfor sentrert omkring historiske, økonomiske, sosiologiske og organisatoriske spørsmål som er relevante for de brede feltene innovasjonspolitikk og økonomisk vekst.

The STEP-group was established in 1991 to support policy-makers with research on all aspects of innovation and technological change, with particular emphasis on the relationships between innovation, economic growth and the social context. The basis of the group’s work is the recognition that science, technology and innovation are fundamental to economic growth; yet there remain many unresolved problems about how the processes of scientific and technological change actually occur, and about how they have social and economic impacts. Resolving such problems is central to the formation and implementation of science, technology and innovation policy. The research of the STEP group centres on historical, economic, social and organisational issues relevant for broad fields of innovation policy and economic growth.