The Norwegian Economy 1900-2000: From Rags to Riches

A brief history of economic policymaking in Norway[1]

Erling Røed Larsen

A hundred years ago, nobody would have guessed that Norway would finish the century among the richest countries in the world. Norway started the century poor and ended up wealthy. How did it happen? Why were Norwegians so successful? Luck is part of the explanation. However, there is more to the Norwegian performance than fortunate coincidence. In this article we propose and examine essential elements of Norwegian policymaking and development. We first present a description of the coordinated market economy, the mixture of market and government that is prominent in Norway. We go on to look at and compare past and present scores on key measures of the economy. The core of the discussion is then centered on whether progress was inevitable or the result of replicable policy decisions. We inspect the background for policy success, and the perils of policy failure. Moreover, we attempt to demonstrate that Norwegian policy is a conglomerate of many wise, and some unwise, institutional arrangements and economic regulations. We conclude that only with merit added to providence could Norway have become so wealthy.

1. Introduction

No observer standing at the doorstep of the twentieth century would have dared make the guess that Norway would reign as a world-class economic performer a century later. Despite its modest beginnings, Norway today is second to none on well-established economic measurements of achievements. How did this come about? Why did it happen? Is it an achievement of policy or is it a result of luck? We propose to approach these questions by using economic rationale. We do so because economics offers tools with which to think abstractly and compactly about complex issues such as policymaking, growth and prosperity. Of course, any attempt at decomposing interwoven effects risks simplifying too much and leaving out paramount features. We accept the risks involved because the rewards in the form of potential insights are great.

Readers may be quite relieved to learn that we do not intend to overwhelm them with statistics. Moreover, we shall not attempt to say the final word on why the Norwegian economy is performing well. We leave out many details because economics is less about numbers, and more about ideas. Indeed, economics is a way of arranging thoughts rather than numbers in order to study aspects of exchange in a society. We will provide some general ideas of what the engines of growth are and how they have been put to work in the Norwegian economy. Here, we are going to present some key words that—hopefully—will provoke thought and contemplation.

Erling Røed Larsen is Research Fellow in the Division for Microeconometrics (erling.roed.larsen@ssb.no)

The story we want to tell is simple. We shall argue that Norwegians could have been poorer than they are today. They could perhaps have been richer, but probably not much richer. The argument involves suggesting that in the past some individuals with foresight made several smart decisions. In addition, Norwegians were downright lucky. The decisions can be imitated by others. Happenstance is unlikely to be replicated. Thus, some parts of the story can be repeated and other parts cannot. Naturally then, learning about the decisions and the framework they construct is highly interesting because decisions comprise a major part of the economic organization of society, and they put the emulation of well-functioning economies within the reach of other economies. Such stories contain essential points and claims about which institutions and ways of interaction contribute to efficiency, productivity, and welfare. Thus, looking at some aspects of how the Norwegian economy came about and how it works today may reveal one or two things about economics in general. Additionally, we shall also see that possibilities for improvement are plentiful in today's Norway. We shall inspect sugges-

[1] This article was originally presented as a lecture at the University of Oslo in the series *Norwegian Life and Society*, Oct 1st 2001. I am grateful to Helge Brunborg, Annegrete Bruvoll, Ådne Cappelen, Miriam Doutriaux, Mette Aaen Jørgensen, and Audun Langørgen for helpful comments and suggestions. Inaccuracies remain my sole responsibility.

tions put forward by critics and skeptics. The lessons from all decisions are well worth contemplating, but some decisions are best not repeated.

It may be useful to state in advance in some detail where we are headed. We want to say some broad things about what we believe is important in an economy. They will be general in nature and we will present them without trying to prove them, and thus with some fanfare we will make claims that are subjective and not necessarily characteristic of the most widespread opinion or even the absolute truth. We start out by describing the 'luck' component in Norwegian prosperity. In the following section, we describe briefly the workings of a coordinated market economy. It is important to see why Norway has chosen a combination of market solutions and governmental interventions. Then, in the subsequent part, we will compare the past with the present and the present Norway with contemporary international economies. In the description we attempt to identify those facets of the Norwegian economy that are particularly good. In the following section, we will ask how Norway got there. Then, we will ask if Norway could have gotten even further and this will in turn illuminate the potential for improvement in the contemporary economy. Finally, we will sum up how the policies implemented thus far have put Norway on an economically sound trajectory.

2. The Luck Component

Let us turn briefly to the uncontrollable part. Luck is neither necessary nor sufficient for economic development. Nevertheless, it helps. Perfectly identical actions undertaken elsewhere in the world might not have had as fortunate outcomes – or they might have led to even higher growth. The problem of distinguishing the lucky from the laudable is a difficult one. Despite the difficulties, let us try to enumerate the lucky strikes. Most important, Norway has enjoyed nice and friendly neighbors. Second, the neighbors became rich before Norway ever did. That usually improves the whole neighborhood. Chance placed Norway close to neighbors and trading partners like the earliest industrializers England and Germany. They built, got rich, and purchased from us. We developed by associating with them through trade and by acquiring some of their ideas. We saw how they did it, and copied it. Third, we are—and have been historically – close to the easy agriculture of Denmark. During the war against Britain in the period of the Napoleonic wars, when Denmark-Norway sided with Napoleon, supplies from Denmark were cut off. Norwegians experienced famine, and came to realize the importance of fertile soils and effective agriculture – or at least how important they were. Since then, attempts at making the rocks and mountains of Norway as fruitful as the huge fields of Denmark have been only moderately successful. Indeed, some commentators argue that Norwegians might have overdone their attempt to emulate the agricultural-intense Denmark. We shall have a look at that notion later.

Fourth, we realize that before air travel became commonplace, Norway belonged to the European periphery. Norway sat on the edges of civilization, and was not all that interesting for military conquests. While there have been many huge wars elsewhere, Norway has mostly stayed out of trouble's way. What we built stayed built. Without the need to rebuild, Norwegians could dedicate themselves to other tasks. Fifth, the sociologist Max Weber believed that a work ethic of "living to work instead of working to live" prevailed in Northern Europe. That too, then, was not our own doing but something that was handed to us from neighbors. The attitude was a part of a greater cultural heritage, not due to deliberate Norwegian policies.

There is more to be said about geography. Thanks to our geographical coordinates, we avoid the extremely serious disruptions to economic life that come from tropical diseases. Furthermore, it used to be – up until around 1850-1900 or so – that low temperatures were, perhaps, more difficult to deal with than high, or at least medium temperatures. We believe that factor was reversed or diminished during the last century. Modern inventions make external temperature less of a hindrance to the workings of an economy. Our latitude may also have had consequences for nutrition. We were few people, probably because not many wanted the cold, the mountains, the snow, and the hardship. But since there were large quantities of fish and game to be caught, much food could be shared among few inhabitants. Of course, that begs the question of why Norway was a latecomer and why Norwegians starved when the grain supply from Denmark was cut off. The food explanation may not amount to much. However, some economists and others, e.g. professor Jared Diamond (1997), have suggested that there may be a connection between latitude and the ease of economic exchange. There seems to be a loose association between latitude and economic development. We do not know why that is; nobody really does. Until further research, people are left with conjectures and speculation. We all know—from languishing up here when there are only two hours of daylight and it is far below freezing – that Norway is not a hot place. While that is to be lamented in many other ways, it may not be an unlucky arrangement economically. High latitude may come with fewer natural difficulties such as disease, dangerous animals, and hurricanes.

Finally, Norwegians were lucky to find the black gold – oil. By extracting oil from the reserves in the North Sea, Norway has grown financially wealthy. However, the whole oil story involves more than luck. The extraction process is complicated and requires sophisticated technology and expertise. Moreover, the management of oil wealth – as any wealth arising from natural endowments – is a complex social question. Norway has done well on all accounts, and that is not a story of pure providence. That is a story of deliberate and clever utilization of an opportunity.

We hope to show that – or at least to give indications of why – the Norwegian economy is functioning well thanks to a nice mixture of good organization and luck. Having said much about luck, we will focus the remainder of the article on Norway's policy achievements and lack thereof.

3. The Coordinated Market Economy

The Norwegian economy is a combination of two types of economic systems. In the economic literature, they have been called centralized and decentralized economies. In this respect, the Norwegian economy is similar to the other Scandinavian economies and to the German economy. Indeed, it would be difficult to understand the developments in Norway during the last one hundred years without an account of the interplay between private initiative and public enterprise that has shaped and been shaped by economic policies. In fact, economies of this type have received widespread attention and therefore a name of their own. An economy that is set up as a mixture of markets yet contains governmental intervention or centralized institutions to a substantial degree may be called a *coordinated market economy* (see Hall and Soskice 2001).

It is easily shown that market solutions are inefficient in the presence of phenomena involving third parties and non-market features. The efficiency of an economy may then be improved through governmental intervention or legislation. More specifically, market failures exist because markets cannot coordinate all relevant information. In the presence of externalities (e. g. pollution), natural monopolies (e.g. railways), market power (e.g. dominating companies), asymmetrical information (e.g. market for used cars), common goods (e.g. national defense), and in the absence of bidders from the future, the market solution is inefficient. Additionally, even when the market solution is efficient, it may be perceived as unjust, and a sense of injustice may affect the productivity of the economy. Put differently, even when the market economy performs at its best, the members of the society may not be satisfied with the outcome. Efficiency and fairness are two separate goals, and economists are concerned with how to achieve the first; they generally leave the second to politicians, philosophers, and public opinion. Governmental intervention, when done right, can enhance efficiency and correct distribution injustice. For our purpose, let is suffice here to say that in all likelihood much of the performance of the Norwegian economy is due to the institutional arrangement of markets and government working together.

Market features in Norway are many. Norwegian society allows companies to go bankrupt. Producers set prices. Goods – private goods, rather – are only made when someone has decided to make them. People find the vocation they want, without anybody ordering them what to study or what to specialize in. Means of production are privately owned. Profits befall owners. Contracts between private parties are allowed, encouraged, and enforced. Private solutions and production prevail.

It is a good thing that Norwegian authorities look positively on – and have looked positively on – the market place since it can convey valuable communication. Markets coordinate information by delegating decisions to people who are in good positions to know what to do. For example, consumers buy something if both the quality and price are attractive. Firms produce if the combination of costs and market price allows them to make a profit. Thus, the market is an ingenious device that leaves it up to the participants who have the most information about costs and needs to make use of that information. Producers minimize costs and relay the results to a market. Buyers shop around and reveal their willingness to pay. Thus, costs and desires are combined and put forward by the experts on each. It requires access to large amounts of information and formidable computational faculties for someone else, or a board of strangers, to know production costs and people's desires and to find the most efficient quantities to produce and prices to charge to clear the market. In Norway today, the prevailing attitude is that the majority of such decisions should be left to private individuals.

On the other hand, there are many areas in which individual agents do not know all the relevant details. The Norwegian economy is set up to disallow private enterprises from making all-powerful decisions on their own when the goods involved have certain attributes, for example when they affect others. What people care about may be a 'public good' like defense or a 'public bad' like climate change. Private provisions to supply these goods may be difficult, impossible, or inefficient. There may be negative externalities like pollution or positive externalities like hygiene. Consequently, there are many public institutions in Norway today set up to supplement or correct private enterprise. Although the health care system sees some private entities, it is mostly a collective endeavor paid for by mandatory taxes. The social security system is financed by taxes. It is run by the government and encompasses everything from sickness to disability insurance. Unemployment benefits are public payments to jobseekers. Pension schemes are state-run and mandatory payments must be made toward them. Further, non-private companies, guaranteed by state or public charters, operate railroads, trams, and the metro system. There is a big, national television broadcasting system, financed by a combination of

Table 1: Past and Present of the Norwegian economy

Statistic	The Past	The Present	Source
Gross domestic product (GDP), 1990-prices	38 534 mill. (1900)	978 692 mill (1999)	Statistical Yearbook (SY) 2000, Table (T) 355
Household Consumption, in Percent of GDP	92.7%	48.0%	
Government Final Consumption	10.7 %	19.5%	
Investments Physical Capital	24.2%	21.7%	
Exports	13.9%	46.4%	
Imports	27.3%	37.4%	
Population	2 217 971 (1900)	4 503 436 (2001)	SY-01, T 47
Infant mortality, dead w/in 1st year per 1000 b.	80 (1901-05)	3.9 (1999)	SY-01, T 73-74
Height, Military recruits	170.0 (1900)	179.6 (2001)	Historical Statistics (HS) 1994, T 4.22; SY-01, T 102
No. University Students	1479 (1900)	78 969 (2000)	HS, T 5.16; SY-01, T 174
High School Diploma, General Subjects, Prep. for studies	436 (1901-05)	23 967 (1992)	HS, T 5.11
Av. Budget Share, Food, in Percent	39.9 (1958)	10.8 (1997-1999)	HS, T 12.1; SY-01, T 223
Number of Passengers, transport	454 mill. (1946)	4 196 mill. (1999)	HS, T. 20.1; SY-01, T 481
Life Expectancy at 0	53.99 (m) and 56.88 (w), 1901-05	75.6 (m) and 81.1 (w), 1999	HS, T 3.23; SY-01, T 624

Source: Statistics Norway (1995, 2001), NOS National Accounting 1865-1960 and NOS Historical Statistics. Notes: The identity GDP+Imports=Consumption+Investment+Export is an accounting relationship, and true by definition. When it appears not to hold it is due to technical issues of accountancy. Confer with *Statistical Yearbook 2000*, Oslo: Statistics Norway, Table 355.

mandatory fees on owning TV sets and budget transfers. The school system is public, financed by taxes through transfers. Hospitals are public, and so are all universities and most colleges.

Moreover, governmental agencies monitor the economic exchange, implement legislation, and intervene in the market economy. For example, ministries set standards, and make demands on how, when, and by what means production can be made. Opening hours are regulated. Labor laws require firms to comply. Overtime is restricted. There are taxes on polluting goods such as gasoline, and fees on health damaging goods such as alcohol and cigarettes. Economists see such taxes as attempts to correct the gap between private costs and social costs, exactly like the externality literature prescribes. One prominent example is the labor market and how wages are set, see Barth and Moene (2000). Large coalitions of employers and employees meet to negotiate, in manners and ways set up by a public framework. Authorities monitor negotiations and have the power to intervene. Thus, in the Norwegian economy there is a complex mix of markets and interventions. The economy is partly left to itself and private agents, and partly managed collectively by governmental interventions.

An economy that does not correct market failures will be inefficient. Economic outcomes will be left to robber barons, polluters, and monopolies. Distorted prices will not ensure optimal resource allocation. Historically, laissez-faire economies have been victims of powerful movers and shakers. So, there is a positive role for surveillance and intervention. For that reason, the Norwegian economy has a competition surveillance agency, *Konkurransetilsynet*, which ensures that firms compete. Governments, when they are at their best, correct the markets and improve economic efficiency. Moreover, governments – as representatives of our combined effort and collective will – can redistribute means according to what society deems just. The rules and arrangements of the Norwegian economy are designed to mirror all the goals described above. We will see below to what extent they have succeeded and continue to do so.

4. The Past and the Present

A hundred years ago, Norway was among the poor countries of Europe (Klette, 2000). Today, it is one of the richest in the world. Indeed, the United Nation's Human Development Index puts Norway in the first place in its latest ranking, see Table 2. The differences between then and now are striking. Let us examine some of the evidence.

We see from Table 1 that many facets of society are different today compared to what they were a hundred years ago. We see that although the population merely doubled, gross domestic product increased 25-fold. That fact mirrors profound changes in the economy. It is indicative of a nation's transformation from a position of need to one in which citizens may bask in an abundance of goods and services. Admittedly, some of the increase in gross domestic product is misleading since it is only a transfer of non-counted non-market activities to counted market activities.[2] The inclusion of formerly uncounted activities may overestimate the growth in gross domestic product. After all, these goods and services were produced in the past even though they were not counted in the statistics. On the other hand, Nordhaus (1997) demonstrated in an entertaining article on the price of light how the value of quality improvement is hard to capture and may entail underestimation of growth. As a result of underestimation and overestimation, effects may cancel out. Regardless of how skeptical we are, the growth of GDP estimates does reflect an enormous increase in standards of living.

The increase in the gross domestic product is mind-boggling. The changes seen during the last century probably surpass the accumulated changes of the millennium before. During the last century, Norwegians escaped the tyranny of necessity and entered the land of plenty, in hordes. This is seen, for example, by the fact that the average budget share for food has fallen from a very high two-fifths to an easily accommodated one tenth. There are few Norwegians today who cannot get by fairly decently in their lives. Overall, Norwegians live better and longer. That is demonstrated by the increase of life expectancy at birth. It is up from 57 years to 81 for women, see Table 1. It means that life expectancy for women soared by almost one half over the century. Such a number, implicitly, tells a story of welfare, of enjoyment, of longevity, of security, and of decades of greater satisfaction. Further, we see that military recruits have gained 10 centimeters on their former peers. Stature reflects general conditions in hygiene and nourishment. Thus, access to food and the quality of foodstuff have improved greatly over the century. Crippling illnesses have been eradicated or successfully treated in modern hospitals. Infant mortality is down from 80 per thousand to less than four. Any parent would subscribe to the opinion that such a reduction entails an enormous increase in welfare. The loss of a newborn is a tragedy, and many such sorrows are hinted at by the statistics of a century long-gone. A society that finds ways to prevent lives from ending before they even started has managed to contribute greatly to the general well-being of its population. It is not an understatement to say that economic development has opened up a whole new window into the joy of life. While people in the past had to spend much of their time working and worrying over how to fill hungry mouths, today people may visit friends, watch TV, read books, hike in the mountains, or ponder the meaning of it all.
Moreover, we see from Table 1 that the number of students has increased during the last hundred years. It reveals how Norway has transformed its resource allocation from primary to tertiary industries. Before, Norwegians were fishermen, loggers and farmers. Now, Norwegians work in services, with technology, and in sectors that are factor-intense on human capital. We see in Table 1 that the number of passengers transported each year has gone up dramatically. Norwegians today travel for business and pleasure, and they travel frequently and long-distance. There can be no doubt that the Norwegian economy has improved remarkably over the last century.

But so has every other Western economy. What is remarkable in Norway's progress towards prosperity is its speed. Klette (2000) shows how Norway caught up with and overtook OECD GDP per capita over the last century. He pinpoints three stages: 1900-1920, 1920-1970, and 1970-today. In the first and the third stage, Norway gained much ground, relatively speaking. In the second, the catching-up was markedly slower. In the third, there was an acceleration in closing the gap and taking the lead. Many commentators focus on oil as the single most important explanatory factor for the rapid expansion in the third stage. Unfortunately, commentators have been less concerned with the sources of growth in the first stage. Nevertheless, Hodne and Grytten (1992) try to explain the early stage of growth. They say the emergence of electricity and an electricity-based industry comprised a basis for the development during the first decades of the twentieth century. Interestingly, then, we see that each time Norway's growth accelerated relative to other countries, it was due to, or associated with, a valuable combination of technology with a natural resource (water and oil).

In the third stage, GDP per capita grew fast and overtook many other countries. Klette (op. cit.) conjectures that the growth in GDP per capita has less to do with access to labor and capital and more to do with productivity. He goes on to say that it is unclear which were the most important factors in understanding productivity, and suggests education, research, and a fertile mix of private and public enterprise. Below, we will return to this question.

Let us dwell a bit more on the economic indicators. We see in Table 1 that exports and imports are relatively more important today than they were a century

2 For example, when you and I cut our own wood, our effort is not included or registered in the Gross Domestic Product (GDP) because it has not gone through market transactions. But if you and I swapped, so that I cut yours and you cut mine, both services would be included in the gross domestic product as long as we paid each other for the trade. Since modern economies rely on specialization, services are filtered through an exchange system of markets. Service exchanges between individuals are registered as production and sales, and they are counted in the gross domestic product. Earlier, many services were rendered but not counted because they did not go through a market channel. Instead, they were labor arrangements between man and wife, sister and brother, or farmer and neighbor.

Table 2: International comparisons today

Statistic	Norway	Sweden	Great Britain	Germany	Italy	United States	Australia
Unemployment, 2000	3.5	5.9	6.3 (1998)	6.5	11.3 (1999)	4.0	6.6
Work Force % of Population 15-64, 1999	80.6	78.5	76.3	71.2	59.6	77.2	73.6
TVs per 1000 citizens, 1997	462	519	521	567	528	806	554
Visits to Movie Theaters per citizen	2.6 (1999)	1.8 (1998)	2.3 (1998)	1.8 (1998)	2.1 (1998)	4.6 (1994)	3.9 (1995)
GDP/cap, (PPP) relative to OECD=100, 1999	121	99	98	102	99	145	-
Cars per 1000 citizens, 1998	400	426	443	507	543	485	478
Taxes % of GDP, 1998	43.6	52.0	37.2	37.0	42.7	28.9	29.9
People per sq. km, last population size	14	20	244	230	191	29	2
Life Expectancy at Birth	78.4	79.6	77.5 (UK)	77.6	78.4	76.8	78.8
UN Human Development Index	939	936	923 (UK)	921	909	934	936

Source: Statistical Yearbook, Tables 636, 647, 648, 649, 650, 654, 665, 676 and Human Development Indicators, UNDP.

ago, at least in terms of their size compared to gross domestic product. Exports are up from 14 percent of GDP to 46 percent.[3] One might be tempted to believe that Norway has become more open simply because the rest of the world has become more open. However, the reader is encouraged to recall that in year 1900 the world was already an open place, in terms of trade. It was not until the inter-war period and subsequent Bretton Woods arrangement that restrictions were enforced internationally, which curtailed trade and capital movements, see e.g. Eichengreen (1996b). Not until quite recently has the world become as open a place as it was on the eve of WWI. Thus, we realize that the fact that Norway engaged in relatively little trade may hint of its being in the first stages of modernizing, industrializing, and specializing. It hints that Norway was less industrially developed. One may quite correctly think of Norway a hundred years ago as a pretty backwards country. It was closed, almost hostile in its preoccupation with its own things. Norway did not amount to much. It was poor, it belonged to the periphery of European nations, its inhabitants were uneducated, and it was not even a country of its own. However, Norway soon became one. In 1905, it separated from the union with Sweden. In the years to come, Norway would make good choices.

From Table 1 we also see that public spending increased tremendously during the twentieth century. Governmental consumption doubled in the period 1900-2000, from one tenth to one fifth of GDP. Of course, that reflects Norwegians' increasing reliance on collective solutions and services from an ever-increasing public sector. It is important to ponder the ramifications of this. Fruits of growth are channeled through and distributed by a governmental sector, which offers necessary services such as education and health, but also redistributes income. Dani Rodrick (1994) has shown how governments and governmentally targeted investments helped South Korea and Taiwan industrialize. In Norway, an earlier story of collective investments into schooling and health is quite similar and we will discuss the underlying policies in the next section.

By now, the reader will point out that it is clear that Norway today is much different than it was, but that it remains to be seen how Norway compares to other countries today. In Table 2 we tabulate some comparisons.

From the last row in Table 2 we see that Norway scores highest on the *United Nations Human Development Index*. One factor contributing to the high Norwegian standards of living is the fact that Norway utilizes much of its work force, as is shown by the first two rows. In the countries we list, it has the lowest unemployment rate. In other words, most people work. That is fortunate, because every single little effort, every hour, counts towards the size of the pie at the end of the day. However, in many other respects Norway does not stand out. Life expectancy is not the highest. Norway lags behind leading countries in modern day technology-level indicators such as TVs and cars per thousand citizens. On the other hand, remember that these are average numbers. The distribution of goods and pleasures matters too. Notice that if some households have many TV sets and several cars, it will increase the average, but the average will not report the inequity of distribution. Indeed, Barth and Moene (2000) show that Norway has a remarkably compressed distribution of income. Equality of means may add to the welfare of all. Naturally, any cross-country measure of standards of living is bound to be controversial, as is the Human Development index from the United Nations. Nevertheless, let us agree that Norway today has improved compared to historical times and has managed to become at least on a par with the most advanced economies in the world.

Was it inevitable? Could it have gone otherwise? Yes. Economic history teaches us that prosperity is fragile.

[3] Do not be confused if the numbers do not add up. For technical reasons of accounting, the net percentages do not sum to one hundred. See details on national accounting in e.g. Statistics Norway (2001).

It can be found by patient exploration of options available, but it can also be lost easily through rivalries and suppression. Progress is by no means automatic. Progress may be hindered, torpedoed, and reversed. It may also be fostered, stimulated, and encouraged. It all depends on policy, culture, and people's inclination. Consider some historical centers of knowledge and invention. The Chinese dynasties around the year 1000 were world leaders and produced scientific results that Western thinkers only reached ages later. Yet Landes (1998) argues that Chinese policies stifled growth. Its science stagnated and regressed. Later, in the Renaissance, Northern Italy took the lead. It produced spectacular fine art, novel science, and philosophy. Then Spain and Portugal, Antwerp and Amsterdam took over and led the world in navigation and commerce. In the end of the eighteenth century, England played host to the Industrial Revolution, only to be overtaken by Germany, the United States, and Japan in the two following centuries. What is the lesson? Nothing lasts forever. Progress is sensitive to institutional set-up, incentives, cultural allowance for free thinking and initiative, governmental intervention and support, and the regulation of markets. In order to achieve, society must be arranged such that its inhabitants seek to deliver. So, when we observe that Norway caught up with the big performers during the 1900s, it is necessary to disentangle the choices Norwegians made so that other countries may emulate them if they wish to do so.

Everybody likes finding a single explanation for a phenomenon. As humans, we tend to avoid complex stories. So, when we say there is no one sole factor behind Norwegian standards of living, we challenge our inclination for one-liner solutions. Here are some candidates for the explanation of the high standards of living. The truth, unfortunately, is a combination of factors. The list below describes some advantageous facts about the state of the Norwegian economy. In the next section, we will deal with the policies that achieved those states.

1. Knowledge. Norwegians are highly educated. Everybody reads and writes. They can do the math. They speak languages, read books, and study newspapers. When the Ford Motor Company, a maker of automobiles, changes the fuel injection system in their cars, mechanics can easily adjust to new instructions. In many parts of the world, that is not the case. In Norway, knowledge is utilized everywhere and at all times. Knowledge improves the accuracy, the speed, and the quality and quantity of output.

2. Technology. Behind each Norwegian is a multiplicity of machines. Machines amplify human effort. They enhance the power and effectiveness of the human finger. In Norway, things are automated. For the economy, it means we are highly productive. The more machines a nation uses, the higher the output. When man tamed nature in the Industrial Revolution and learned how to use inanimate energy to assist wind, wave and muscle, humans became powerful. When inventors came up with the transistor and the chip people could add power to their brains. Communication and calculation took seconds, not months. Computations are now done instantaneously, not laboriously. Then hands and heads are put to work elsewhere, and that is what is done in Norway.

3. Law. There is a rule of law. There are property rights. There is contractual enforcement. If an entrepreneur breaks a contract she will be pursued and potentially sued. Therefore, she keeps the contract. That is a highly effective way of doing business. In many parts of the world, business(wo)men do not expect contracts to hold, so they do not make any contractual agreements, or they make them with the expectation that they will not be kept. Oftentimes then, nothing is done. No deal is struck or bad deals are made. Alternatively, huge efforts are exerted to avoid being cheated.

4. Incentives. In Norway, there are opportunities and incentives. If you apply yourself, you get ahead, at least modestly. Economic history shows it is an effective way of enticing people to achieve, perform, and pull out all their talents, see Landes (1998).

5. Equity. There is an implicit social contract in Norway between inhabitants and the nation. It says that if you try to excel, but fail, you will be taken care of. In fact, no matter why you experience hard times you will receive support. There is a tacit agreement of cooperation. There exists a so-called *dugnad*-spirit of comradeship, collective effort, and community. The economic system fosters solidarity between groups of workers and empathy between people. There is, as always, a flip side. In Norway, there are strong forces of conformity and homogeneity. In the short run, likeness induces team spirit. In the long run, however, likeness may preclude invention and adaptation. We turn to these issues below.

6. Culture. Nobel laureate Robert Solow allegedly said that all debates in economics about the sources of growth dissolve into sociology. Max Weber pointed to the importance of the so-called 'Protestant Work Ethic' in understanding the Northern European mentality. Some people have said Norwegians are less fun-driven and more guilt-pushed than many other people. The culture instills that people should do their duty and deliver the goods. Moreover, cultural forces strongly favor honesty, cooperation, and acceptance. As a result, there might be less of a tendency to employ the judicial system to settle disputes. Potentially, there are gains to be reaped from that. Additionally, a social arrangement based on trust and honesty is effective because it utilizes little resources in avoiding and preventing theft and unlawful expropriations. As one example, Zak and

Knack (2001) study the relationship between trust and investment across countries, and find—not unexpectedly—that social and economic environments with high level of trust come with high rates of investment. Ultimately, they find an association between cultural indicators of trust and economic growth.

7. Opportunity. Philosophers believe society ought to strive towards the place in which people are responsible only for actions of will and should bear the consequences only from such actions. Factors outside their reach and control ought not to impede them from living a fulfilling life. It is fair to say that when you are born in Norway today you are given a fair chance. It may perhaps be added that that chance is less affected than elsewhere in the world by who your parents are, what color is your skin, what faith you endorse, or what capacities you possess.

8. Gender equality. Encouraging women to participate in the production process stimulates the economy by making available a higher percentage of the population's labor hours and by allowing entrepreneurs to tap into the total pool of talent. In Norway, the appearance of women on the job market has greatly increased the nation's capacity. A prerequisite for that to happen was the emergence of an attitude of gender equality.

9. Resource endowment. Norway is fortunate to have many waterfalls, large forests, considerable stocks of fish, and a generous amount of oil and natural gas. If used wisely, natural resources will be exactly that – resources.

We do not know which of these nine factors are necessary or sufficient conditions for good standards of living. Unfortunately, economists have not yet been able clearly to identify the preconditions of growth and prosperity. Probably, a healthy mix of the nine would get any society far. Some claim the mix is a good one in Norway. But we need to study how the conditions and states came about since they are hard fought for.

5. Getting It Right or: Was It Inevitable?

The Norwegian performance relative to other countries and the policies that shaped it are two main themes of this article. One way to describe the inherent surprise in this performance is to ask the reader to imagine the already mentioned guess put forward in the year 1900. If you asked informed observers which countries would be among the top three richest in the world a hundred years hence, nobody would have suggested Norway. In fact, if somebody had suggested Norway they would likely have been asked if they were of sound mind or if Norway was a part of England. Indeed, one of the most likely candidates might have been England. England—at the time—was a dominant, innovative force and had many good channels for financing novel ideas for innovative contraptions. England had a well-educated populace and one of the longest traditions in the world for democracy and meritocracy. In addition, England led a huge empire, from which it extracted resources and from which it benefited economically, however unjustly. Yet, after the problems of gold parity of the 1920s, England never really recuperated. (That is another story altogether.)

Another likely candidate might have been Germany. It was rapidly expanding, had industries which emerged rapidly thanks to a close connection between the finance sector and corporations, benefited from an impressive work ethic, and Germans were educated and high-achievers. Germany was booming, in chemicals and mechanics. Germany had world-class mathematicians, authors, philosophers, and scientists. Yet another likely candidate might have been the United States. The young nation was performing well and was expanding. Observers were impressed. They saw new industries and contagious enthusiasm generated by innovators. It had centers of finance, it had completed transcontinental railways, and people immigrated by the millions.

One would have been strangely inclined to pick Norway as a candidate. It was poor, had few entrepreneurs, and had an immature financial sector in which money did not chase good ideas with much energy or frequency. It had few educated people. Its towns were small and inconsequential. In addition, the towns were spread far apart from each other. There were few centers of knowledge and few rich investors to sponsor upcoming entrepreneurs. In fact, good ideas did not even chase money because ideas were few and the available money insufficient. There was a shortage of highly educated leaders, bad infrastructure in a hostile nature, and no system for transforming newly acquired knowledge into novel production. In fact, Norway's economy was based less on the value added to raw materials by applying humans knowledge and clever manipulation, and more on simply shipping raw materials. Norwegians dealt in timber, minerals, fish, and agriculture. Norwegians did not know much about the technology frontier abroad and contributed little to expanding knowledge. Admittedly, Norway had a powerful commercial fleet and an impressive knowledge of the seas and of navigation. Norway did have world-class authors who made their marks on world literature. But overall, Norway was a backwards place a hundred years ago. If the UN had existed and it had issued a human development index, Norway would have been a long way from the top. What happened?

Let us conjecture. We believe the following policies and decisions —put forward at different times during the last one hundred years—contributed to twentieth century Norwegian growth:

- Political solutions were implemented to meet strong labor movements. Rights were admitted, security guaranteed, and votes granted to all adults. It created a sense of comradeship and common goals.
- There was cooperation between workers and employers to avoid internal strife. Institutions were established that encouraged people to pull together in collective effort. There were few strikes and disruptions of production—especially in the second half of the century. Norway enjoyed the power of accumulated exertion. Slowly, but surely, modern production methods came to substitute for manual labor.
- Political decisions were made to invest heavily in education. Mass education, as well as higher- and specialist-education grew. Schools, colleges, and universities multiplied. The nation's human capital grew solidly and was put to efficient use.
- Investments were directed to accumulate physical capital. Machines were acquired, electric generators built, and power lines put up. This enabled labor to produce more output per unit.
- Norway imported a catch-up of technical expertise. Norwegians copied the inventors and emulated the innovators. Norway tapped into existing knowledge. This was an inexpensive way to progress.
- Powerful political parties, movements, and coalitions established a consensus for reducing inequality. An attitude of sharing the fruits of growth spread through the spectrum of political convictions and income brackets. This contributed to creating healthy and harmonious people who were willing to work hard.
- Public hospitals, health institutions, and governmental agencies were founded to increase individual health, nourishment, and hygiene. All citizens were given treatment, access to vaccination programs, and participation in public insurance schemes. This meant that more people could participate more often, with more energy, and even into older age, in the production of what the nation needed.
- The country's physical infrastructure was constructed. Roads, railways, pipelines, sewage systems, telephone lines, and tunnels were built. Non-naval and non-muscle transportation of people and commodities became widespread, affordable, reliable, quick and safe. The result was mobility, flexibility, and quick diffusion of state-of-the-art techniques.
- The bureaucracy was staffed with efficient and educated public servants. The staff was expanded throughout the century. The public sector delivered public goods necessary or useful for the production of private goods, welfare, and security. Vital public goods stimulated the growth processes.
- A trade policy was put in place. It was one that aimed at maintaining openness in the Norwegian economy and allowed Norway to reap the benefits of international specialization and exchange. The policy may also have stimulated a cultural affinity for foreign ideas, and contributed to make Norway not only import goods but also ideas, knowledge, and insights of any kind.
- Policies to handle the oil wealth efficiently and equitably were implemented. Resources and the ensuing financial wealth might have been difficult to deal with because of the temptation to use it immediately, regardless of the long-term consequences for society and the short-term effects on the business cycle. Prudent policies and sound strategies may have turned the resource gift into a blessing, rather than a curse in disguise.
- Policies towards gender equalization were introduced. Legislation and surveillance agencies were established to prohibit discrimination and monitor adherence. As a result, attitudes changed. The reward was a leap in production capacity by putting female talent to work where it contributed the most.

The list is not exhaustive. It is of course difficult, if not impossible, to summarize century-long versions of policies and development plans in a few words. Growth and progress still puzzle economists (see Clark (1987). Some would say it is foolish to even attempt. Others would say any attempts are surely false by default; you cannot capture several hundred million human years lived in a few sentences. However, we believe it is possible – maybe even imperative – to attempt to construct the list.

Part of it is trivial. The short answer in explaining Norwegian growth is identical to all short answers for rapid development: productivity. A difference of one or two percent of productivity growth for a century may be the difference between affluence and squalor. To help fix ideas, let us do some simple calculations. If we take a production total of 100 units and let it grow by 1 percent for a hundred years, we end up with 270 units. Not bad, really. If we let it grow by 2 percent for a hundred years, then we might be impressed. We get 724 units. If we had managed to increase production by 4 percent annually, we would have ended up with 5050 units. The intermediate answer for Norwegian economic growth lies in the power of accumulated productivity growth. It is the "answer" because productivity invariably coexists with and causes prosperity. This answer is "intermediate" because the relation between productivity and prosperity is so close that what we say is a cause may simply be a part of the result. The power of accumulated productivity will yield prosperity but it begs the question of why productivity itself developed as it did if it did not do so in other countries.

If a country keeps growing, accumulating, investing, reinvesting, and learning it will eventually become one to be reckoned with. Norway has not done much that was spectacular for a hundred years, yet it is one of the richest countries in the world. It has never been a star miracle economy like Japan or South Korea, the envy of the whole world. It has not spurred inventions nor has it seen particularly big leaps, although the oil boom has been considerable. It has grown steadily and equitably. If you share responsibility and benefits, good things will eventually happen. If you are patient and work, you will succeed. While some countries have developed in explosions of growth and productivity, Norway grew steadily.

Norwegian Productivity

We said that to name productivity as a cause of economic prosperity was not really to explain progress. Productivity growth itself must be understood. There is a long-standing debate in the literature about whether or not development, and therefore productivity growth, can be projected down to stages. The economic historian Rostow (1960) put forward the theory that every process of growth goes through the same stages. His suggested stages were: 1. The traditional society. 2. Preconditions for take-off. 3. Take-off. 4. Drive to maturity. 5. The age of high mass-consumption. In a somewhat related spirit, the economic historian Douglass North (1981) tried to capture the essence of industrialization when he offered the generalization that the Industrial Revolution was due to two important factors: a) property rights and b) markets. Potentially, then, those two conditions could and can be repeated to yield similar effects in many countries. Recipes for growth have received much criticism because growth stories in different countries seem so distinct. For recent accounts of the insights to prosperity and problems with growth and its theories, see Dornbusch (2000) and Easterly (2001). For a long time, authors have focused on the disparities between countries. The economic historian Alexander Gerschenkron (1962) claimed that every development process was unique and had idiosyncrasies, depending on the country's history, culture, and resource endowment. According to his theory, each country will find its own path to industrialization. For example, the financial structure in England made it a suitable host to the industrial revolution. The financial structure in Germany was different from the onset, but made Germany ideal for a catch-up country. In Russia, sociological patterns and culture made the path to development altogether different. Gerschenkron's key terms are substitutions of prerequisites and spurts of latecomers.

The United States saw its development coming from abroad, financially and in terms of manual labor. Japan grew by way of a culture for hard work and achievement, education and performance. South Korea grew in what experts have called export-led growth by combining education and governmental hands-on investments, see Rodrik (1994). The Norwegian growth was quite unique also, as we have suggested by the policies above. However, the Norwegian experience shares some features with the South Korean experience. For example, education and the role played by the government were core elements.

The sources and paths of growth are nebulous and explanations for them are tenuous. Authors have investigated a wide range of factors possibly related to progress. One example is a recent article by Fölster and Henrekson (2001) who study the growth effects of government expenditure and taxation in rich countries. There seems to be a positive association. Of course, which way causation works is open for debate. Nevertheless, a plausible story involves the interaction between growth and governmental assistance in the form of services and provision of growth enhancing public goods. The idea is relevant to our study since the investments Norway undertook by expanding the services rendered by the public, fertilized the soil in which private initiative could grow. The policy choice to construct the Norwegian economy as a coordinated market economy – with many and far-reaching governmental companies and collective solutions – may have suited the Norwegian disposition and culture well. One lesson is that it is wise to arrange the way the economy work in tandem with the historical background and cultural heritage, much in line with Gerschenkron's thinking.

Economists disagree, of course, on the relative contribution of the different factors. The timing of growth is another puzzle. Implemented policies and technological development in Norway during the 1900s seemed well timed. Or perhaps not timed at all, if it is the case that they simply could not happen earlier. Before the 1900s, the means of transportation were slow and resource-intensive. During the 1900s, easy energy led to highly efficient ways of moving people, goods, and even ideas around. In the Netherlands, for example, that would not have been such a huge gain since people and goods were already closely knit together. In contrast, the construction of a transportation network in, say, America amounted to a huge gain, and many economic historians have made the point that without the transcontinental railway, the US would not have developed as rapidly as it did – or in the way that it did. Similarly, we believe transportation is important to understanding the Norwegian development. Ships and horses were not sufficient means of transportation in such a long and mountainous country. Railways, roads, cars, and telephones made connections easier, faster, and more frequent. Transportation was a necessary and an important, but not a sufficient, precondition. It opened up the possibility of overcoming geographical distance, which had previously been a large hurdle. Before the age of mass communication, countries with easy travel were at an advantage. After the introduction of cheap and accessible transportation, the advantage shrank. Notice that the transportation infrastructure was put in place as a result of deliberate policy decisions and immense collective efforts.

The observant reader will notice that, in a way, we are saying that Norway did what Europe did. In order to understand how Norway could catch up with Europe and eventually surpass its European neighbors, we may hypothesize that Norway simply did more of a good thing. It copied Europe and did so zealously. Thus, if we come to understand what Europe did, we are positioned to understand the Norwegian development also. Many authors have sought to understand the European development after World War II. For example, Abramovitz (1986) hypothesizes that Europe caught up with America because of what he calls *social capabilities*. These are, first of all, institutions of education. But they are also a special profile of political, commercial, industrial, and financial institutions that pull together. Our line of explanatory factors is similar to those suggested by Abramovitz.

Education does play a leading role among the institutions that an economy can set up to foster growth (for interesting empirical growth accounts, see for example investigations by Makiw et al. 1992, and Barro 1996). Democracy is another. In fact, there is usually a strong association between the two. For example, Tavares and Wacziarg (2001) investigate the relationship between democracy and economic growth. They find that democracy improves growth through accumulation of human capital and by lowering income inequality. DeLong and Schleifer (1993) offer a fascinating historical investigation into centralization and decentralization of power. They study the historical connection between growth, distribution of power, and taxation in Europe for several hundred years. Not surprisingly, they find that concentrations of power hinder growth through excessive taxation. Economic policies in Norway during the twentieth century were focused on democracy, education, and public rather than private power. In fact, the sharing of responsibility and the distribution of control were policy goals.

Those ideas lead us to a core issue: equality. Norway has the most compressed wage structure in the world, according to Barth and Moene (2000). It is an interesting coincident that Norway focuses much attention on equity and at the same time is so rich. Coincidence is not causation, although there is research investigating possible causal structures, starting with Kuznets (1955) original research into the relationship between economic growth and income distribution. Here, we will dwell on the relationship between the size of the slice each person in an economy has at her disposal and the total size of the pie.

During the last century, Norwegians focused on the total size of the pie, not the individual size of each slice. They did so knowing that the size of each individual slice did not vary much. Economic history shows that when a society pulls together to increase the pie, good things happen. Conversely, when members of a society become more concerned with increasing the size of their own slice at the expense of the size of another's slice, bad things happen. There is likely to be social unrest, strikes and fights. There may even be revolutions. Labor strife, corruption, beggar-thy-neighbor strategies, and disruption of production often have roots in perceived inequality and a desire to rectify the injustice with physical confrontation if necessary. The economic historian Barry Eichengreeen (1996a) argued that European countries, perhaps especially Scandinavian countries, struck a deal between workers, factory owners, and the government. He claims that Europe entered into a social pact in which everybody did his and her part. The government controlled prices, owners reinvested profits, and workers abstained from destructive work conflicts in a commitment mechanism to ensure growth. The deal was that workers should not strike or disrupt production in attempts to get higher wages and owners should not take all profits and run away with them for private indulgence. Profits should be reinvested into expanding and improving the production structure. That way workers and owners both enjoyed the fruits of growth. Eichengreen proposes that large investments were made possible by a post-war recipe: wage moderation and export growth. That may explain the Abramovitz hypothesis of European catch-up of America in general, and the Norwegian catch-up and overtaking in particular. In fact, Barth and Moene show measurements that indicate the reason why Norway has been in a position to create equity: coordination of pay. The way wages are set in Norway is highly centralized. They demonstrate by pointing to empirical studies of the wage-setting process in other countries. In Norway wage formation involves large unions of workers and employers meeting to negotiate, and it attains the highest degree of centralization by the OECD scale. The claim that equity is closely associated with growth may also be testable, in principle. Norway may have gotten more equal over the century and such a tendency could be associated with growth. Unfortunately, we do not have all the data we would need to construct a test, so we shall have to await further research.

After World War II, Norway was still not at the forefront. It was half-decent at best. In Klette's (2000) terminology, Norway was in the second stage and only very slowly closing the gap between it and the rest of the industrialized world. If anything, Denmark and Sweden were the Scandinavian performers. What happened? Oil was found. Add the ingredients of the above to a goblet of oil and things happen. A highly valuable export commodity can buy you state-of-the-art technology abroad. You can confidently micro-manage the business cycle and watch the effect of having all people work all the time. Oil gives you an opportunity to secure valuable means for import regardless of disturbing business cycles abroad. And when all people work every year, it adds up. In comparison, Sweden had to go through a painful readjustment of its welfare state. The Swedes suffered from high unemployment rates and tough burdens on the generous welfare economy. Norway did not. Thus, oil obviously plays a leading role in the Norwegian success story.

We must pay some attention to the implemented policies to manage the oil wealth. After all, stories about resource gifts do not always turn out for the better. Sachs and Warner (2001) study whether countries excel or not when natural resources are discovered. They find that natural endowments are not observed with a plethora of consumption possibilities for all of the citizens in suddenly rich countries. Oftentimes, this national wealth is a cause for competition and disagreement and a source for private enrichment among the elite (see Auty 2001). Cappelen et al. (2000) study the Norwegian experiences with oil and how it may have done without it. Fortunately, Norway avoided some of the pitfalls of nouveau riches, and has now instituted rules for how much to spend of its natural and financial wealth, when, and in what ways. Norway has managed the oil wealth quite well, so far. They were lucky to find it, and smart in dealing with it properly and prudently.

A somewhat neglected component in accounts of Norwegian growth is the emergence of female labor. The significance of the fact that Norwegian women showed up on the job market in great numbers and offered their skill in the production of the nation's total sum of goods and services cannot be overstated. Possibly, and for the benefit of all, Norwegian women showed up in greater numbers than in many other places. Imagine the loss to society when great talent remains undiscovered and unused because it was granted a person who traditionally (and arbitrarily) does not participate in production. It is essential that societies allocate scarce skills and knowledge to positions where they make an impact.
Norway did just that.

Making conjectures and stating refutations are essential elements in generating knowledge. Above, we conjectured that the presented elements were probably necessary and possibly sufficient in understanding the tapestry with which Norwegian economic prosperity was woven. Our claims may not easily be refuted because there are general in nature. The result of such generality is that the policies examined are not readily operational for other countries to use. We regret that.

Further, we must ask how the agreement to pursue the policies came about? At what times did what people decide to implement what suggestions for arranging the institutions that created the elements of growth? We cannot answer that satisfactorily. The answer – when or if it comes – will involve a story of how Norway, in a combination of deliberate actions and good luck, was able to hit just the right mixture of policy, culture, resources, neighbors, and pure providence.

6. Getting It Wrong or: What Can Be Improved?

Probably, Norway did not get everything right. We do not possess a counterfactual trajectory of the perfect development, so investigations into what could have been improved upon must be hypothetical. And critique has been launched. Claims about ill-designed policies have been put forward. Here, we will list proposals from critics, then comment upon the economic content. The following comprise a bouquet of critical remarks recently suggested.

- The business climate is inhospitable to private initiative and there are few incentives to excel
- The infrastructure needed to support our pattern of spread-out residence is too resource demanding given what the populace really want
- The level of agricultural production is above the optimum, given what people would prefer if they knew the costs
- Grants to research and development are small, infrequent, and misdirected
- The welfare system is too generous to be sustainable
- The ongoing de-industrialization is precarious
- There is too little reliance on market solutions, and thus too little competition
- There exists an environment of hostility towards ambitions and achievement

Such claims are heard from politicians, commentators in media, economists, journalists, or business leaders. Let us shed light on them. First, observers often maintain that Norway has failed to establish laws for business that welcome initiative and innovation. Some business leaders say the business climate in Norway is tough and inhospitable. Politicians are eager to equalize outcomes, not outsets, they say. In the desire to create equality, a penalty has been put on performance, critics warn. As an example of this position we can point to the international consultancy *Jones Lang LaSalle*.[4] The consultancy ranks Oslo only the 50th most attractive city in Europe for investment purposes, down 14 notches from last year, ending far behind sister cities in Scandinavia among the 85 surveyed.

[4] Dagens Næringsliv, September 28th 2001, p. 18.

They cite little research and development, uninviting framework for business, and non-membership of the EU as reasons for their low ranking. Further, critics are not only skeptical of taxes on effort, they also say there are subsidies of shirking. Performance based pay is discouraged, uncommon, or non-existing, it has been said. The picture drawn is one consisting of powerful unions that block desires to link pay with results. Unfortunately, the apparatus with which to measure these claims is imprecise. However, the claims may be made plausible or implausible, possible or unlikely. Regardless of the empirical content, economists do acknowledge and emphasize the importance of mechanism design and the existence of incentives. People will adapt to penalty and reward schemes. So, in order to extract talent, encourage effort, discourage exploitation of the welfare system, and avoid social losses by too strict demands on the unfortunate or the unwilling—in order to reach acceptable levels of well-being for all—policymakers must thoroughly contemplate the regulations and requirements they impose on business. It is legitimate to believe that Norway can improve.

Second, critics point out that the infrastructure needed for spread-out and scattered residence is demanding in resources, and that Norway has probably not found a sustainable solution. While a spread-out pattern of residency may be good for defense purposes and even desirable from a standard of living point of view, there is no avoiding the fact that it is costly. Transporting parts of cities into the woods and mountains—which is basically what having villages there amounts to—requires labor, time, fuel, roads, electricity gates, schools, administrations, and additional infrastructure. There are economies of scale to be reaped from urbanization. Still, Norway subsidizes people who decide not to live in cities.

Third, Norwegian agriculture is expensive. The argument is essentially that by transferring resources to other sectors and purchasing the products abroad, Norway would improve efficiency of resource allocation given the preferences of the population. Obviously, some places are better suited for agricultural activities than others. Critics say Norway is not one of them. However, the cost of production per unit is only one aspect of agriculture. There are others. For example, people derive pleasure from knowing that Norway can deliver some of its own food. People find comfort in knowing—or believing—that a certain quality of the food is assured. These are externalities not computed in cost analysis and often neglected by critics. It is difficult from an economic point of view to identify the optimum level of agricultural activity.

Fourth, critics put forward the observation that Norwegians spend a small share of the gross domestic product on research and development. Thus, Norwegians do not generate new ideas, acquire familiarity with international research results, or maintain the knowledge they once gained to the same extent others do. Historically, nations that focus on knowledge do well. Naturally then, Norwegian policymakers must contemplate the future benefits of investing into knowledge acquisition and generation. Economically, it is difficult to assess the validity of the criticism. Let it suffice to say that research is a cornerstone activity in any modern society. Lack of funding of research will have consequences later.

Fifth, critics say the welfare system is too generous. It is a long-standing claim in the literature that welfare schemes neither encourage effort nor discourage free-riding. Critics point to Sweden, and its welfare system reforms that became necessary in the early 90s because of unsustainable benefits. So far, Norway may have avoided some of the uncomfortable realities about budget constraints because of the escape offered by oil revenues. In the long term, warning voices ask of us to understand that Norway may not be able to escape reforms either. The demographic composition of the Norwegian population develops in a way such that fewer people produce for a growing number of other—mostly older—people. Norwegians spend more and longer time as students and Norwegians allow themselves an increasing number of years as retirees on public pensions. In addition, Norwegians want shorter hours and longer vacations. Moreover, they want to have paid leaves of absence when ill. Critics, of course, make legitimate points. There is an—already voluminous—expanding list of desires, and the weight of it will be felt.

Sixth, although not suffering from the so-called Dutch disease[5], Norway is dismantling industry in order to allow the growing public sector to acquire labor. Imports are financed by the sale of the natural resource wealth. The question the skeptics demand answered is what might happen if—or rather, when—revenues from oil shrink. Another point is that the present consumption displaces future consumption. However, it is no trivial task to distribute wealth over generations. Ultimately, it must depend on what the future is expected to hold, and expectations are frail. Neither the present nor the future should make sacrifices for the other. Economically, it is difficult to know whether or not Norway has relied too much on a public sector in a world that becomes more interconnected and competitive.

[5] The Dutch disease refers to the experience the Netherlands made some decades ago. In the Netherlands, decision-makers let industry be dismantled as nature resource revenues flowed in. When the resource flows dried up, they were left with little industry to support imports.

Seventh, market reliance is too low and too infrequent, say commentators. As a result, the economy may become inflexible and stagnant. A recent example may be found in the magnesium plant at Herøya. Because of high labor costs, Norwegian companies cannot meet Chinese sale prices. Thus, the Norwegian companies are not competitive on international markets in this industry. Still, demonstrators protest against closure and there is political resentment towards reallocation of production resources. Instead of transferring labor to sectors in which Norwegians can compete, people wish to keep the structure of status quo. If the Norwegian strategy is too inflexible, Norway may forgo income in the long run. Such a view is valid since plants and industries in a vibrant and efficient economy must be closed down when they no longer compete successfully. On the other hand, retraining costs and job switching costs are real costs faced by the workers. They comprise the necessary investments any economy must make in order to enjoy the productivity that comes from flexibility. However, there is an asymmetry of burden. It is perceived to be unfair that a few must make sacrifices for the many. Granted, one way of sharing the burden is to redistribute income through taxes and subsidies. Economists say it is an efficient way. The economic rationale prescribes two instruments when one has two goals: one for flexibility, another for distribution. On the other hand, only so much financial redistribution is politically feasible. An alternative way is to look for possible second-best solutions. An example is to accept some losses in flexibility by allowing firms to phase out more slowly instead of forcing prompt closures. That would ease the burden of superfluous workers in transit to retirement or new work, and it would be less politically straining. In practice, politicians must balance competing goals, see Røed Larsen (2001) for a contemporary example on the dilemmas facing public interest in both stimulating innovation and spreading the results when there may be a trade-off. Balancing external and internal goals when international competition is at odds with national employment is both an intricate and a delicate task politicians face. For an account of competing and non-competing sectors and the relation to employment, see Rødseth (2000).

Eighth, there is, reportedly, a culture of mistrust of getting ahead. This is a popular view, but hard to demonstrate. Economics can contribute little to answering this question, and quantitative illumination is hard. Allegedly, Norwegians believe the overachiever is eccentric, irritating, or unlikable. Writers have pointed towards the desire in Norway that everybody walks at the same pace. To some extent, such comments ring true for Norwegian society. The question is, however, whether this is anything unique. Granted, there exist strong forces of conformity and homogeneity in Norway. For historical reasons, Norwegians are not ethnically diverse or culturally various. And homogeneity may hinder acceptance of diversity, a paucity of which does not foster innovation and novelty. Historically, places with many cultures and variegated attitudes have been centers of invention because people learn new ways when they meet those who are different. So, *if* there exists a Norwegian tendency of forcing sameness there would be a price-tag on it. Additionally, mistrust of achievement may prohibit a healthy variance of pay. Paradoxically, in Norway it is accepted that soccer players and skiers, rock stars, and lottery winners enjoy large incomes. Large salaries are less acceptable for business leaders. Public resentment runs deep when the media reports seven digit incomes in the business sector. Paradoxically, it does not when sport heroes obtain large incomes.

Such is the thinking of the economic skeptic. Along these lines critique is fired against Norwegian orthodoxy. As we see, some of the forces behind Norwegian development and prosperity are among the forces of friction as well. How can that be? After all, equity cannot both be good and bad for economic progress. Well, it may. The point is that a good thing might not be good in large dosages. One pill a day may save the patient, ten will kill him. Economics is all about identifying optimum levels. Another point is that what is desirable today, might be undesirable tomorrow. An arrangement of institutions, say taxes and subsidies, that is designed for an era of little mobility may not be suited for times of widespread relocation and globalization. In other words, Norwegians may have been sheltered against realities that now come into effect because it used to be the case that culture, language, and geography were barriers to exit. Now, Norwegians may move if they find policy mixes too hostile and threatening. This is part of the argument made by the critics. Time will show.

7. Concluding Remarks

The Norwegian economy is performing well, and on measurable parameters Norwegians are among the richest in the world. It was not always thus. Less than a century ago, Norway lagged behind the rest. Yet, despite a modest outset Norway has become a modern, fully-fledged industrialized economy. In this article, the claim has been that success is due to a good portion of luck. However, deliberate institutional arrangements and the implementation of core policies have also played their part. Without them, Norway might still have been relatively poor. The existence of relatively non-advanced countries in Europe today bears testimony to that claim. The Norwegian catching-up and overtaking of other industrialized OECD countries can be understood only by scrutinizing the policies that were implemented. We have mentioned education and investments in physical capital. Another factor, the mentality of sharing prosperity in the form of wage moderation and modest capitalists, as realized in a tacit social pact as the economy marched forward, has played a leading role. Interestingly, mentality and policy are interdependent. For example, the income distribution and school policies have contributed to a desire for equality. The existence of equality in turn may have led to policies to maintain, or even increase, equality of pay and the homogeneity of the school system, see Barth and Moene for perspectives on the propensity for equality.

Pre-requisites to Norwegian growth were law and order, property rights, incentives, a tradition — written in legal code — that encouraged parties to enter into contracts, and a system that allowed contractual enforcement. The natural resource gift, oil, was a lucky strike. However, the prudent way Norwegians handled the riches, was not. It was a feat of well-targeted decisions.

Norway successfully put itself on a trajectory towards economic progress and prosperity. When the essential ingredients were in place, the economy grew slowly, but surely. Identifying the ingredients does not constitute a recipe for others to copy and imitate. But getting the ingredients ready and putting them within reach is a start. In Norway, the pie grew larger each year and – fortunately – each slice was cut equitably for each inhabitant. That, in turn, probably affected the size of the following year's pie. Thus, a core lesson of Norwegian economic policy is that sharing the fruits of prosperity establishes an atmosphere of security, identity and belonging, and ensures that an individual believes in the *opportunity* to make use of her energy and talents. Instead of fighting over the distribution of the pie, people then cooperate to increase the pie. The good thing with this good thing is that it is replicable.

References

Abramovitz, M. (1986): Catching Up, Forging Ahead, and Falling Behind, *Journal of Economic History*, **46**, pp. 385-406.

Auty, R. M. (2001): The Political Economy of Resource-driven Growth, *European Economic Review*, **45**, s 839-846.

Barro, R. (1996): Determinants of Economic Growth, *NBER Working Paper* No. 5698.

Barth, E. and K. O. Moene (2000): Er lønnsforskjellene for små? [Are the Wage Differences Too Small?] in NOU 2000:21 *En strategi for sysselsetting og verdiskaping*

Cappelen, Å., T. Eika og I. Holm (2000): Resource Booms: Curse or Blessing? article presented at the annual meeting of American Economic Associations, memo, Oslo: Statistics Norway.

Clark, G. (1987): Why Isn't The Whole World Developed? Lessons From the Cotton Mills, *Journal of Economic History*, **47**:1, pp. 141-173.

De Long, J. B. and A. Schleifer (1993): Princes and Merchants: City Growth Before the Industrial Revolution, *Journal of Law and Economics*, **36**, 671-702.

Diamond, J. (1997): *Guns, Germs, and Steel. The Fates of Human Societies*, New York: Norton.

Dornbusch, R. (2000): *Keys to Prosperity. Free Markets, Sound Money, and a Bit of Luck.* Cambridge, Massachusetts: MIT Press.

Eichengreen, B. (1996a): Institutions and Economic Growth: Europe After World War II in N. Crafts and T. Toniolo (eds): *Economic Growth in Europe Since 1945*, New York: Cambridge University Press, pp. 38-72.

Eichengreen, B. (1996b): *Globalizing Capital*, Princeton University Press.

Easterly, W. (2001): *The Elusive Quest for Growth. Economists' Adventures and Misadventures in the Tropics*, Cambridge, Massachusetts: MIT Press.

Fölster, S. and M. Henrekson (2001): Growth Effects of Government Expenditure and Taxation in Rich Countries, *European Economic Review*, **45**, pp. 1501-1520.

Gerschenkron, A (1962): *Economic Backwardness in Historcial Perspective.* Cambridge, MA: Harvard University Press.

Hall, P. A. and D. Soskice (eds.) (2001): *Varieties of Capitalism: the Institutional Foundations of Comparative Advantage*. Oxford: Oxford University Press.

Hodne, F and O. H. Grytten (1992): *Norsk økonomi 1900-1990 [The Norwegian Economy 1900-1990]*, Oslo: Tano.

Klette, T. J. (2000): Økonomisk vekst [Economic Growth], in NOU 2000:21 *En strategi for sysselsetting og verdiskaping*, pp. 510-526.

Kuznets, S. S. (1955): Economic Growth and Income Inequality, *American Economic Review*, **45**, pp. 1-28.

Landes, D. (1998): *The Wealth and Poverty of Nations. Why Some Are So Rich and Some So Poor*, New York: Norton.

Mankiw, N. G., D. Romer, and D. Weil (1992): A Contribution to the Empirics of Economic Growth, *Quarterly Journal of Economics*, **107**, pp. 407-437.

Nordhaus, W. D. (1997): Do Real-Output and Real-Wage Measures Capture Reality? The History of Lighting Suggests Not in Bresnahan, T. F. and R. J. Gordon (eds.): *The Economics of New Goods*, NBER Studies in Income and Wealth, Vol. 58, Chicago: University of Chicago press, pp. 29-66.

North, D. (1981): *Structure and Change in Economic History*. New York: Norton.

Rodrik, D. (1994): Getting Interventions Right: How Sought Korea and Taiwan Grew Rich, *Economic Policy,* **20**, pp. 53-101.

Rostow, W. W. (1960): *The Stages of Economic Growth*, New York: Cambridge University Press.

Rødseth, A. (2000): Konkurranseutsette og skjerma næringar [Competing and Non-competing Industries], in NOU 2000:21 *En strategi for sysselsetting og verdiskaping*, pp. 527-545.

Røed Larsen, E. (2001): Patenter, medisiner og økonomi [Patents, Medicine, and Economics], *Økonomisk Forum*, 6/2001, pp. 8-9.

Sachs, J. D. and A. M. Warner (2001): The Curse of Natural Resources*, European Economic Review*, **45**, s 827-838.

Statistics Norway (1995): *Historisk statistikk 1994 [Historical Statistics 1994],* Oslo: Statistics Norway.

Statistics Norway (2001): *Statistisk årbok 2001 [Statistical Yearbook 2001],* Oslo: Statistics Norway.

Tavares, J. and R. Wacziarg (2001): How Democracy Affects Growth, *European Economic Review*, **45**, pp. 1341-1378.

Zak, P. J. and S. Knack (2001): Trust and Growth, *The Economic Journal*, **111**, pp. 295-321.