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# **The Long and Winding Road: Norway's Approach to ITQs**

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## **Abstract**

Individual transferable quotas (ITQs) are primarily tools to achieve economic efficiency and do not amount to ownership of fish stocks. The 200 mile exclusive economic zone (EEZ) went a long way to establish national jurisdiction over fish stocks, and without this ITQs would not have been possible. Shortly after the EEZs were established, Norway and the neighboring countries agreed on the sharing of fish stocks in the EEZ. The road to ITQs in Norway has, however, been long and winding. The paper discusses the obstacles to ITQs in general and how they have played out in Norway in particular. Despite not being conservation tools, individual vessel quotas have been considered helpful in enforcing overall catch limits. The driving forces behind transferability are partly the capital gains quota holders can make, and partly the fleet rationalization that transferability generates. Main obstacles are controversies over initial allocation and ideological opposition against privatization and reliance on market forces.

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## **ITQs: What they are**

Since this is a gathering not just of fisheries economists, but of agricultural and resource economists, I should perhaps not assume that everyone is equally familiar with what are called individual transferable quotas in the fisheries. Let me therefore begin with a few words about what individual transferable quotas are and why they are useful. Many fish stocks are now controlled by limiting how much can be caught from each stock each year. These overall catch quotas have in many cases been subdivided into individual entitlements, usually determined as shares of the total quota. If the quota holders can lease their quotas temporarily or sell them permanently (or both) the quotas are transferable.

Individual transferable quotas (ITQs) do not amount to property rights to fish stocks. Under ITQs the right to set the total catch quota is still in the hands of the government or the agency it may have authorized to deal with that question. ITQs do not amount to sole ownership where the owner of a fish stock weighs the benefit of setting aside some fish today to improve the growth of the stock against the benefit of catching more fish now and cashing them into money. Control over the fish stock requires collective action by the quota holders, but they are not in a position to exert any such control, unless explicitly authorized to do so, except if they elect to catch less fish than the total quota set by the government or its agency.

Nevertheless, while ITQs fall short of fully-fledged property rights they can be very useful. They provide incentives to maximize the value of the fish one is entitled to catch and to minimize the cost for catching them. One aspect of minimizing costs is to limit investment in fishing boats to what the fish stocks can support in the long term. One might think that this would occur more or less automatically, since no one would have an incentive to invest in a bigger boat than he needs to take his quota. It can be shown, however, that there will be a tendency to overinvest when fish quotas fluctuate and the labor employed on the fishing vessels is paid a share of the catch value instead of a fixed wage (Hannesson, 2000). This system of remuneration is commonly used in the fishing industry.

Hence, ITQs are primarily tools for achieving economic efficiency. For conservation, all that is needed is to set the limit on the total catch appropriately. Even if not primarily a tool for conservation, ITQs can be useful in this context as well. Individual quotas will presumably be helpful in enforcing a limit on the total catch, by making it clear who can fish what. Furthermore, transferable quotas are likely to foster a stewardship attitude to fish stocks, because transferable quotas have a market value that depends on how well the stocks are managed. Quota holders will therefore have a collective interest in lobbying the authorities for a resource management that preserves the productivity of the fish stocks. Some commentators believe that quota holders associations could evolve into resource owners in their own right, setting the limits for how much can be caught from each stock and otherwise be responsible for its management. For this to happen the authority to do this, and to frame other fisheries regulations, would have to be devolved to the quota holders.

## **The 200-mile exclusive economic zone**

Needless to say, individual transferable quotas require that somebody has the authority to set and enforce limits on the total catch. The 200-mile exclusive economic zone has, with some important exceptions, made that possible. This concept was endorsed by the UN Law of the Sea Conference in the 1970s. Many coastal countries around the world, although not all, established such zones in the latter part of the 1970s. In some cases this enclosed fish stocks

within the zone of a single country and enabled that country to control the fishing of those stocks. New Zealand and Iceland are cases in point. Being islands at far distance from the nearest lands, many bottom dwelling fish stocks are confined to the economic zones of these two countries. It is therefore not surprising that those two countries have been in the forefront among nations in establishing individual transferable quotas in fisheries.

But full national control of a fish stock is not a necessary requirement for an ITQ system to be set up. All that is needed is that the nations between whose zones the fish migrate agree on how much should be fished from each particular stock and how to divide it. Each nation involved can then further subdivide her own share of the total into individual allotments and authorize whomsoever she chooses to catch the fish. The rights to the individual allotments can be made good for whatever time period that is deemed desirable, and the holders of these allotments can be authorized to lease them or sell them permanently if that is deemed desirable. Many stocks migrate between two or more countries, and for some of them management agreements have been reached, but major problems remain with fish stocks that can be caught outside the 200-mile zone. These problems are unlikely to be solved unless the 200-mile zone is further extended until nothing remains of the high seas.

Early on, Norway and her neighbors agreed on how to share the catches from the fish stocks that migrate between the respective zones. The first agreement was concluded with the Soviet Union, with which two important stocks were shared, the Arcto-Norwegian cod and the Barents Sea capelin. Both stocks migrate between the Norwegian and the Russian economic zones. On the basis of catch history, Norway and the Soviet Union agreed already in 1977, when they established their zones, to share the capelin 60-40, with the larger share going to Norway, and to share the cod equally, after setting aside a small amount for third countries that traditionally had fished in the areas concerned.

Agreements with the European Community took longer to achieve, undoubtedly because the member states needed several years to agree among themselves and formulate what became known as the Common Fisheries Policy. The agreement with Norway was based on the so-called zonal attachment principle (see Engesæter, 1993). Fisheries biologists from both parties investigated how much of its life history each fish stock spent in the two parties' zones and set the catch shares on that basis. An interesting thing about this is that the zonal attachment principle is not necessarily a credible solution from a game-theoretic point of view (Hannesson, 2006, forthcoming). That economists were not consulted perhaps helped the agreement, which by and large has withstood the test of time.

Despite Norwegian national quotas having been determined early on for most of the important fish stocks, the movement towards individual transferable quotas has been slow and started late, and has experienced setbacks. Transferability has been allowed only reluctantly and with major restrictions. What could be the reasons for this? To find out, let us look first at the driving forces behind ITQs and the obstacles that are likely to be met.

### **Forces for and against ITQs**

In the late 1970s most and possibly all the major fish stocks exploited by the Norwegian fishing fleet were overexploited. Overexploiting a fish stock means that the catches taken from the stock can be increased in the long term by allowing the stock to grow. To accomplish this it is necessary to reduce catches in the short term. Overexploitation occurs because there are too many boats and too many fishermen employed in the industry. Hence,

coming to grips with overexploitation requires elimination of unnecessary fishermen and boats. Just reducing the intensity with which fishing boats are used (by limiting the number of fishing days, for example) may save the fish stocks but accomplishes nothing from an economic point of view. Furthermore, such overcapacity constitutes a latent threat of reverting to overexploitation, even if fish stocks have been rebuilt.

What happens if ITQs are introduced in a situation like this? Recall that ITQs are not primarily tools for conservation and rebuilding stocks; this is accomplished by setting the overall quota appropriately. If the overall quota is set conservatively, to allow for some rebuilding of the stock, there will not be enough fish for all boats to be fully used. If the total quota is not individualized, the boats will compete for the given amount of fish, which will lead to a shorter fishing season than necessary and perhaps a temporary glut in the market. This is why we have often seen an individualization of the total quota, which in fact did happen in Norway. But the individual quotas have not always been made transferable, and initially that was not done in Norway.

If the individual quotas are transferable and the overall catch quota is too small to allow all boats to be fully used, some boatowners will be tempted to rent or to buy quotas permanently from other boatowners. There are always some boatowners who can catch fish more profitably than others, and some may want to retire from the industry. In either case we have a basis for a mutually beneficial transaction. There is a net gain in efficiency, as the given amount of fish can be caught at a lower cost, and it often turns out that it can be sold at a higher price as well. Accompanying this gain is a transfer of money to those who lay up their boats temporarily or permanently.

This transfer of money has caused much opposition to ITQs, in Norway as well as elsewhere. Fish quotas have usually been handed out for nothing, and those who have leased them or sold them to others have therefore cashed in a windfall gain. What this ideologically-driven criticism overlooks is that this windfall gain is generated by the quota system itself and not taken at anyone's expense. Those who sell or lease their quotas to others would otherwise be incurring costs in going fishing. The "windfall gain" they receive replaces their expenditure on fuel and other inputs they would otherwise be using. This is a net gain for society.

Because ITQs allow for a mutually beneficial exchange among quota owners, one would expect the industry players themselves to be the main driving force behind ITQs. Nevertheless, this is not typical. The initiative to ITQs has probably more often come from politicians and civil servants, which is a bit surprising, since neither politicians nor civil servants would seem to have much to gain from ITQs. Politicians usually have most to gain by pandering to special interest groups, whose interests often go against the interests of society at large. In New Zealand the ITQ system was a part of a general drive towards increasing the efficiency of the economy and regain the pride of place in the league table of GDP per capita. In other places such as Iceland and the Alaska halibut fishery it had become difficult almost to the point of the absurd to cope with a much greater fleet capacity than needed to take the permitted quantity of fish. But in no case has an ITQ system been put in place, or maintained, without the support of a critical mass of the industry. Plans to introduce ITQs in Chile around 1990 foundered on opposition from the industry (see Peña-Torres, 1997). An ITQ system in the Faeroe Islands was abandoned after a few years, again because of opposition from industry.

What, then, accounts for the opposition from industry? Some of it appears to be ideologically motivated, but may on closer inspection turn out to be based on a perception of economic interest. Some industry players argue for preserving open access, but in many and perhaps most cases these are the ones who would get little or no quota, or have got nothing, in the initial allocation. Crewmembers without boats are the prime example, as quotas have usually been given to boatowners and not to crew. These people often aspire to becoming boatowners, but find that difficult when they also need to buy quotas. Then there may be some who fear that they might be forced to sell out of the industry because of bad luck and would find it difficult to reenter if they had to buy their way back in.

This gets us to the question of initial allocation of quotas. This is less straightforward than might be thought at first glance. It seems simple enough to just hand out shares in a total quota that are based on previous catch history. This would make it possible for the fishermen to go on with their business much as they would have otherwise. If the total quota is cut, they would get the same share as in the past, which they would be likely to get anyway. Being able to trade quotas allows them to get a further gain, either by selling out or by increasing their quota holdings. This would seem to be an example of a Pareto-sanctioned change where some gain and no one loses.

But things are rarely so simple. Some may recently have established themselves in the industry with an expensive boat and no catch history. Some might have been temporarily absent, or caught little fish, for some extraordinary reason. Some might expect to do better than in the past in a competition for an overall quota. Some might hope that advancing some special reason, such as being a small scale operator or living in some particular place, might get them some extra allocation. There will therefore be fights over the criteria to be applied in the initial allocation. It is quite possible that the industry players will be more preoccupied with this fight than with the overall gain that they would collectively realize. This has indeed happened in a number of cases and has certainly been a factor in Norway. One vexing issue has been the allocation of the Norwegian quota between the inshore and offshore fleet. It was only after this allocation was agreed under the auspices of the Fishermen's Federation in 1994, and further cemented in 2001, that the critical steps towards liberalizing the transferability of fish quotas were taken.

### **The Norwegian fishing industry in the 1970s and 1980s**

As argued above, ITQs are primarily tools for achieving economic efficiency. If this is high on the policy agenda, those responsible for fisheries policy might take the initiative to establish ITQs, as indeed they did in New Zealand. Economic efficiency was not high on the fisheries policy agenda in Norway in the 1970s and early 1980s. An illustration is provided by a policy document called a long term plan for the Norwegian fisheries (St.meld. No. 18, 1977-78). This document listed three primary policy goals and a number of sub-goals. Efficiency and profitability were not among them. The three primary goals related to preserving good workplaces, preserving the pattern of settlement along the coast, and safeguarding the fish stocks. It can be argued that the first two are incompatible with economic efficiency, although they are broad enough to be open to interpretation. Since most fish stocks in Norway were already fully exploited or overexploited there was limited scope to increase the total revenue. In a situation like that, the only way fishermen's incomes can continue to grow on par with other occupations in an economy with overall growth in productivity is by sharing the given income among fewer and fewer fishermen. This is indeed what has happened in Norway; the number of fishermen has declined almost continuously since the middle of the last century

(Figure 1). This goes against preservation of workplaces, although not “good” workplaces if the latter means jobs with incomes on par with other occupations. Fewer boats and fishermen would seem to mean fewer viable fishing villages. A further illustration of the low priority of economic efficiency was that one of the sub-goals of this so-called long term plan was phasing out the factory trawlers. At the time they were the most profitable of the Norwegian fishing vessels, and have been so for long periods after that.

Another illustration is provided by the subsidies given to the industry in the 1970s and early 80s (Figure 2). These subsidies were originally introduced to provide an income for fishermen on par with comparable occupations. They were initially intended to be phased out after a few years, but became entrenched and institutionalized through annual negotiations between the government and the Fishermen’s Federation. The subsidies continued to rise until the early 1980s when they reached about 70 percent of value added in the industry. This escalation was due to the fishing industry lagging behind in productivity, and the subsidies were self-perpetuating because they hindered a necessary restructuring of the industry. The subsidies given to Norwegian agriculture were a model for this arrangement, but one difference is that while Norwegian agricultural products are mostly consumed domestically the fishery products are almost all exported. One can argue that the electorate may through the ballot box choose to buy its food from expensive, domestic sources, but it is more difficult to understand why they would want to subsidize exports of food.

Ultimately the subsidy carousel in the fisheries came to a halt (it is still going around in agriculture). To no small measure this was due to the sharp drop in oil prices in 1986 and the precarious situation in Norwegian public finances that resulted; in the years immediately before the drop in oil prices about 20 percent of government income came from the oil and gas industry, but this almost disappeared in the late 1980s. Curiously, the price of oil and the subsidies to the fisheries were for many years almost perfectly correlated (Figure 3). One way of interpreting this is that politicians spend the money they think they have, without paying too much attention to what it is spent on. So, in good years, more trickled down to the fisheries.

Rather than economic efficiency, the primary goal of fisheries policy in Norway was to prevent the depopulation of fishery-dependent communities, particularly in the northern part of the country. Maintaining employment in the fishing industry was seen as a vital and perhaps the only possible instrument for this purpose. A policy like that faces an uphill battle, however. Many of these communities are disadvantaged in being small, isolated, with few alternative employment opportunities and much bad weather. The advances in fishery technology tend to promote large boats with relatively fewer people employed and with a wider range of actions, so that settlements in isolated places as close as possible to the fishing banks are no longer necessary. One likely reason why this policy nevertheless was and still is high on the public agenda is that rural areas are overrepresented in the Norwegian parliament.

### **Initial development towards ITQs**

The development towards ITQs began in the purse seine and the bottom trawl fisheries. In 1970, after the collapse of the Atlanto-Scandian herring stocks and the mackerel fishery in the North Sea, it was clear that there was not enough fish to keep all the boats in the purse seine fishery fully employed. Entry into the fishery was closed and, three years later, a licensing system was introduced. The licenses were denominated in hectoliters of cargo capacity, and boats could not be renewed unless a corresponding number of hectoliters was

decommissioned. Because large boats were more profitable than small boats, the licenses got a market value. Boats could be bought, stripped of their licenses, and the licenses amalgamated to provide a license for a bigger boat.

A few years later, individual but not transferable quotas were introduced for capelin and were later extended to most other pelagic stocks. The quotas were determined on the basis of the licensed cargo capacity of the boats. The schemes applied differed slightly at first, according to fish species and sometimes fishing season, but soon a universal scheme came to be used, shown in Figure 4. As can be seen from the figure the quotas increased regressively with the cargo capacity, so that the largest boats were disadvantaged. The philosophy behind this was equalization of incomes, the large boats being more profitable than the small ones. Because licenses could be traded, the fish quotas became tradable indirectly through trading in licenses. There was for a while a lively trade in licenses, but whether it was more due to the attraction of getting more fish quotas or a bigger and more cost-effective boat is impossible to say. Figure 5 shows how over time the small boats were phased out and replaced by bigger boats.

In the bottom trawl fisheries, individual vessel quotas were introduced in the late 1970s. After 1980 these vessel quotas became transferable together with the vessel, and sometimes in the short term between vessels (one vessel could be laid up temporarily and its quota used by another vessel, usually but not always within the same company). The rules for transfers were liberalized gradually in the 1980s and 1990s.

### **The crisis 1989-90**

By the late 1980s the Arcto-Norwegian cod stock had been depleted almost to an all time low. In fact the stock dipped even lower in the early 1980s, but a sense of crisis comparable to the one that developed in the late 1980s was not perceived at that time. There were in fact expectations that the stock would quickly recover, prompting some boatowners to invest in new boats, but the recovery did not materialize as expected and soon a new decline set in. It was deemed necessary to cut the overall catch quota severely. The so-called coastal fleet that had not earlier been subject to any catch restrictions was now reigned in. In 1989 the Lofoten fishery for the spawning run of the cod was stopped half way through the season, and the next year the boats were put under individual quotas. The quotas were determined on the basis of boat size; the boats were divided into classes according to length and each boat in each class given the same quota. Contrary to procedures in many other countries catch history did not matter, except that those who had fished less than a certain amount in the reference years were put in a special category called Group II and allowed to compete for a small overall quota.

The quotas were not transferable and were in fact abandoned after a few years, as the cod stock recovered, but the division of the boats into Group I and Group II was retained and turned out to be important. Even if individual quotas were abandoned there were limits on how much the boats could fish. First, the total catch was divided between the trawlers and the coastal boats. The trawlers had individual quotas which were transferable on certain conditions. The quotas of the coastal boats were divided between Group I and Group II, and between the length classes in Group I. The Group I boats were given much more generous quotas than the Group II boats, so membership of that group became a valuable asset and in practice transferable together with the boat. There was a limit on how much each boat in Group I could catch, but this did not quite amount to individual quotas, because the boats in each length group were allowed to compete for a common quota.



The crisis in 1989-90 was a golden opportunity to reform the fishery management system and bring in individual transferable quotas. Usually such changes come in response to a crisis of some kind. The Ministry of Fisheries did in fact take the initiative to put in place an ITQ system and prepared a policy paper arguing for such a system. At the last minute the left wing of the Labor Party, in government at the time, managed to persuade the party leadership to change its mind. The result was a policy paper where the concluding section contradicted the preceding text, and the ITQ plans were scrapped (St.meld. nr. 58, 1991-92).

That notwithstanding, the problems identified in the policy paper did not go away. There was still a perceived mismatch between available fish quotas and the fishing capacity of the fleet. In 1996 the rules on quota transfers for the purse seiners and the trawlers were liberalized. Those who bought a vessel and stripped it of its quota could retain a part of its quota for 13 years (18 if the vessel was destroyed). The part that could be retained depended on whether the quota was moved from Northern Norway to Southern Norway or vice versa, or stayed within the area. In support of the allegedly disadvantaged north, 50% of the quota was lost if moved from north to south but only 5 if the movement was the opposite. The quota that was taken away reverted to the pool of quotas for the entire vessel group.

From the late 1990s onwards transferability of quotas was gradually introduced for other boats, except the smallest ones (less than 15 meters). This led to a lively trade in boats and a corresponding transfer of quotas; over a few years the number of long line boats fell by one-half. The boats acquired a high market value due to the value of their quota rights; in a much-quoted case a boat was sold one day for 90 million kroner, stripped of its quota rights, and bought back by its previous owner the next day for 10 million (reported in the newspaper "Fiskaren," November 1, 2002, p. 2).

Not surprisingly, the quota rights bought in the long-line fleet appear to have been largely financed by borrowed money. Figure 6 plots total debt against total assets for the boats in this category. There is a positive correlation between the two. This increased debt has, needless to say, led to increased financial costs and cut into the profits that the boatowners would otherwise have realized through buying quotas. This has led some commentators to remark that the ITQs are a failed strategy, because they do not raise the profitability of the industry. But ITQs cannot be expected to permanently enrich the industry, nor should they. In the long term the return on capital in the industry will be the same as in any other competitive industry, with an adjustment for risk. The higher profits due to larger quotas will be translated into a normal rate of return through the value of quotas being determined as the capitalized value of excess profits made possible by the quotas.

As the trade in quotas has been liberalized, the controversy about this has increased. The arguments against transferability are that they lead to fewer boats, more concentrated ownership, depopulation of certain areas, enrich those who get quotas for nothing and then sell out, and raise the debt and the financial costs for those who remain in the industry. None of this is wrong, but how relevant is it? There is no added value generated by employing more people and boats than needed in the fishing industry. Continued technological progress in the fishing industry will necessitate some decline in the number of boats and the people employed, if they are to earn an income comparable to other industries and subsidies are off limits. ITQs would, however, lead to still less employment and fewer boats; the fish stocks exploited by Norway are undoubtedly capable of generating some resource rent. Currently this rent is absorbed by excessive capital expenditure and employment; fishermen are earning

an income on par with comparable occupations, but some of this income is in reality financed by the resource rent which could be realized if fewer people and fewer boats were used. A number of people connected with the industry or the rural areas where it is located are on record for having said that this is the appropriate use of the resource rent. One wonders whether they have thought it through that this rent reflects value of the additional goods and services that could be produced by a more efficient use of manpower and capital.

The new Labor-led government that took over in October 2005 put the current trading in quotas on hold and initiated a review of the fisheries policy. At the time of writing it is still uncertain what it will decide. But it is unlikely that we have come to the end of the road.

## **Conclusion**

Individual vessel quotas have been widely and increasingly used in Norway to avoid the race for fish that accompanies competition for an overall quota. On the other hand, transferability has been permitted with great reluctance and many restrictions. The origins of this are partly ideological; there is opposition to allow people to sell for their own benefit privileges they got for free, even in voluntary transactions between two players. Strangely, perhaps, there has also been opposition to having the government rent out or sell fish quotas, thus avoiding windfall gains to individuals. There is still strong support for a policy that tolerates excessive employment in the industry for the sake of keeping small and isolated fishing villages inhabited.

Industry players were late converts to ITQs. Support for ITQs began to gain ground in the 1980s, and pressure from industry is one factor behind the gradual liberalization of transfers that took place after the mid-1990s. There is also understanding among civil servants and politicians that ITQs promote efficiency. But without pressure, or at the minimum support, from the industry, it is doubtful that any liberalization of transferability would have taken place. The support of ITQs is not unanimous within the industry any more than it is unanimous among politicians. Opposition against ITQs is strongest among small scale fishermen and fishermen in the northern part of the country.

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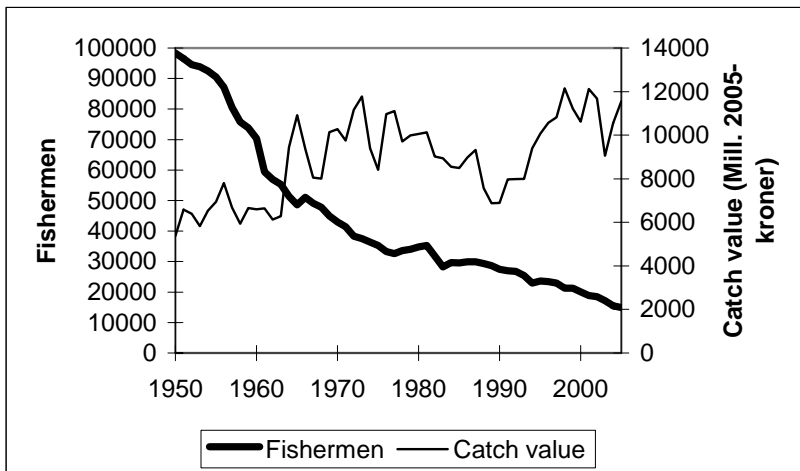


Figure 1

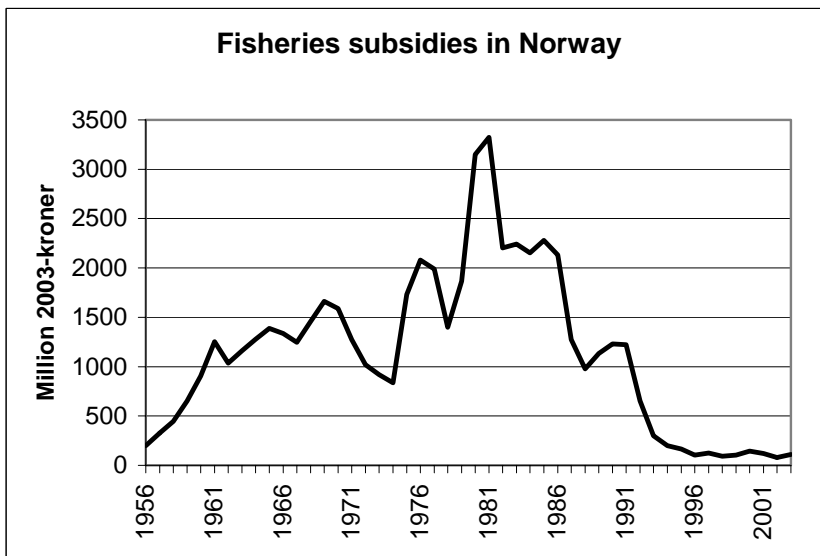


Figure 2

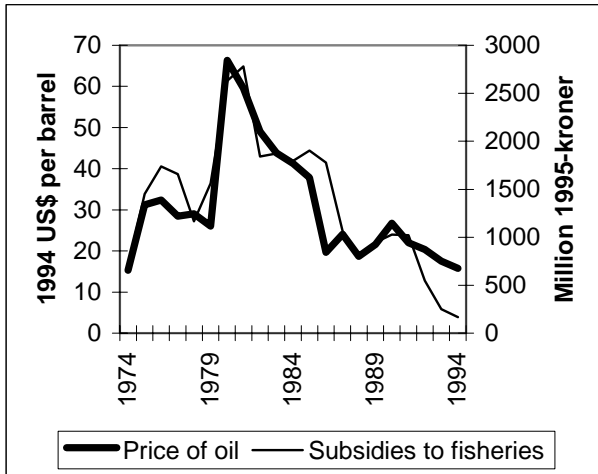


Figure 3

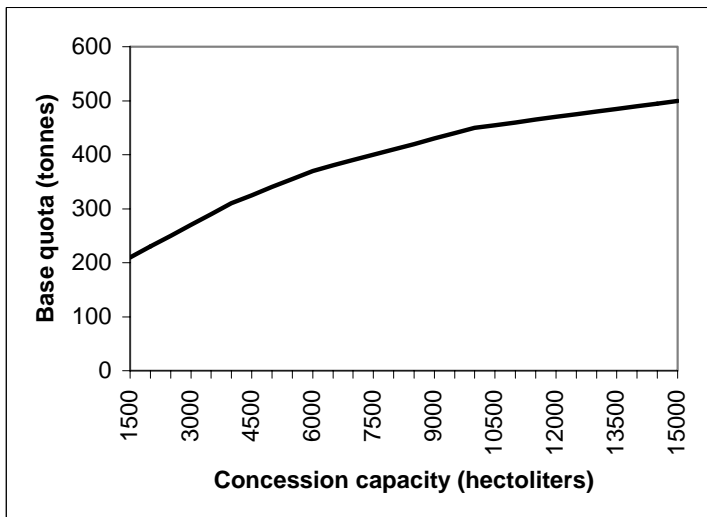


Figure 4

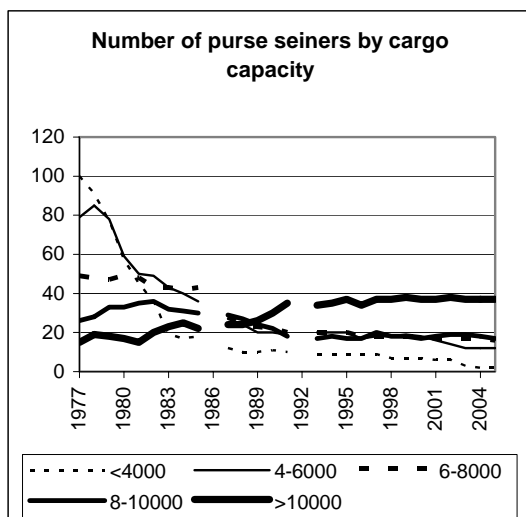


Figure 5

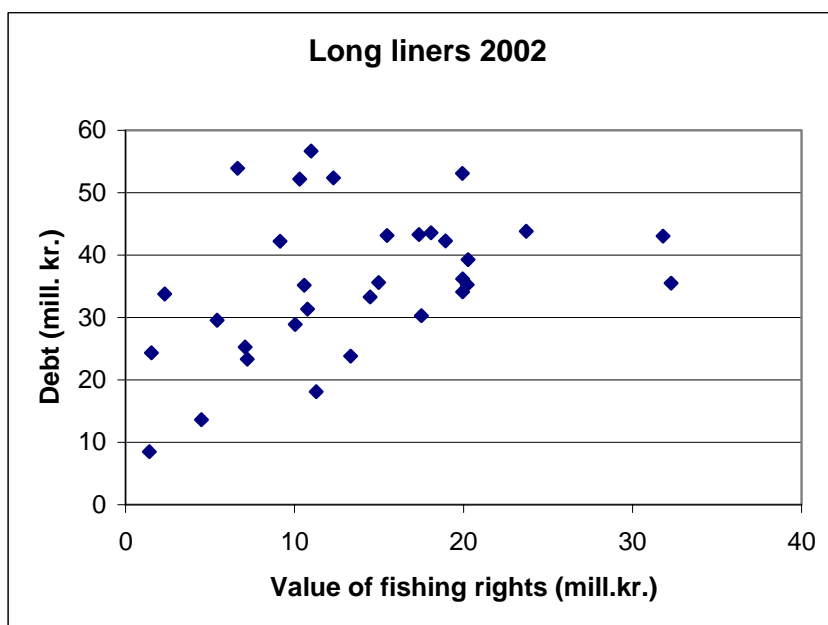


Figure 6