

On commodity derivatives and the Norwegian initiatives to create a fish derivatives market

Gunnvald Grønvik, special adviser, Norges Bank Financial Stability*

Hedging against future price movements can be important both for those producing goods and for those buying them. Commodity derivatives may be employed as a hedge against price risk, and this is one of the reasons behind several initiatives to establish fish derivatives markets in Norway. This article discusses the general terms for establishing commodity derivatives markets. There is seldom more than one derivatives market for a commodity. The success of a Norwegian fish derivatives market will depend on global competition between such marketplaces, and this competition will determine whether and what type of initiative that will succeed.

Norwegian (and European) legislation for commodity derivatives appears to be adequate. The markets are well organised and Norwegian legislation ensures that transactions involving standardised products are settled in a clearing house and that netting rules apply. This contributes to ensuring financial security in the commodity derivatives markets. The market positions held by financial institutions are otherwise too small to threaten general financial stability.

1. Introduction

During the past decade, power and freight derivatives markets have developed in Norway and efforts are currently underway to establish a salmon derivatives market. All of these markets are based on the participation of buyers and sellers in many countries. Authorities worldwide are increasingly focusing attention on commodity derivatives markets. In the 1997 Tokyo Communiqué, supervisory bodies from 18 countries recommended standards for the regulation and supervision of commodity derivatives markets. The Markets in Financial Instruments Directive¹ provided the EEA countries with a common standard for regulating these markets (which is in accordance with the Tokyo Communiqué). In Norway, the Directive was implemented through a new Act on securities trading which came into effect in the latter part of 2007. As a basis for discussing such markets, it may be useful to explain how these markets function.

A *derivative* is a contract to buy and/or sell an asset at a predetermined date at a price determined at the contract date. The asset to be delivered is called the *underlying asset* for the derivative or simply the *underlying*. Goods and services are the assets underlying *commodity derivatives*, whereas other financial instruments or foreign currency are the assets underlying *financial derivatives*. In principle, the derivative's underlying asset should be delivered, but most derivatives markets today only involve a financial settlement. In cases where physical settlement of the underlying asset is required, the market usually provides a delivery facility so that purely financial investors can also participate in the market for the purpose of hedging price risk or speculation.

In derivatives markets, the most common types of forward contracts are futures and forwards. The most important difference between futures and forwards is

how the contracts are settled. Both contracts involve a future purchase where the price, quantity and quality of goods and the time and place of delivery are predetermined. The value of a *futures contract* is set daily at market value and buyers and sellers are credited or debited daily in relation to the changes in value. In a *forward contract*, the entire settlement takes place when the contract matures.

We also differentiate between derivatives that are traded directly in an organised market (exchange traded) and over-the-counter (OTC) derivatives. When derivatives are traded in organised markets, the product is fully specified. The contracts traded are the same size, the maturity date is the same, and counterparty risk is eliminated since all transactions go through a clearing house which is the central counterparty, etc. This may be compared to the purchase of off-the-shelf items in a supermarket (e.g. 1 kg of sugar). With an OTC transaction, the product can be specially adapted just as the grocer can customise a product to our wishes when we go to the cheese counter and ask for a centre-cut, medium-sized piece of Gouda. The market participants offering OTC contracts are usually brokers, and trading directly in the organised market where they can reduce the risk of their OTC transactions is often an element of their risk management. Therefore, successful marketplaces for commodity derivatives often live in symbiosis with brokers dealing in OTC contracts.

When a clearing house participates in a transaction as central counterparty, it acts as an intermediary between the buyer and seller. Both parties sign contracts with the central counterparty rather than with each other. In this way, all market participants only have counterparty risk in relation to the clearing house. The clearing house performs this service for a small fee but also demands collateral for its activities either in the form of a daily margin payment in accordance with the contract's daily

* I would like to thank Trude Myklebust and colleagues at Norges Bank for providing useful comments to this work. Any remaining errors are the responsibility of the author. The views expressed are my own and should not be interpreted as views held by Norges Bank.

¹ The Markets in Financial Instruments Directive (Directive 2004/39/EF) was published in the Official Journal on 30 April 2004. It was incorporated in the EEA agreement on 29 April 2005 by resolution 65/2005.

price movements or a guarantee which covers the maximum loss on the portfolio of contracts held by the market participant.

Central banks focus most heavily on financial derivatives and in particular exchange rate and interest rate derivatives. These are clearly the largest derivatives markets and are also the markets that can have the most substantial impact on central bank activities in the areas of monetary policy and financial stability. Nevertheless, there is also considerable activity in the area of equity derivatives and credit derivatives. The standard of good practice for central counterparties involved in securities trading, which has been developed by central banks, the Basel Committee on Banking Supervision and supervisory authorities, also applies to clearing houses involved in commodity derivatives trading, cf. CPSS (2004).

Internationally, there is a large group of derivatives whose underlying assets are commodity prices. Contracts similar to today's commodity derivatives contracts were first traded in the 1100s. The first organised derivatives markets where the underlying assets were agricultural products appeared around 1850. The market participants included farmers and their sales cooperatives (future sellers) and the food and canning industry (future buyers). For both parties, security surrounding future prices had an independent value – the farmers increased the security of payment for seed grain and fertilizer while the canning industry increased the security of its pricing strategy and sales efforts. Commodity derivatives markets provide a hedge against unfavourable price movements and this has an independent value for both parties. Consequently, the transaction is more than a zero-sum game. The value of this hedge depends on the extent of the commodity's price fluctuations.

Markets have developed in pace with demand, and at present there are global commodity derivatives markets with a range of underlying commodities. One large group of underlying commodities is agricultural products (grain, coffee, beef, food oil, orange juice, etc). Another group is metal and semi-finished goods (aluminium, copper, rubber, etc.). The group of underlying that receives most attention in Norway is energy products (crude oil, electricity). A number of indices (credit risk, equity indices, freight indices in shipping) are also used as the underlying. Some of these index products are naturally classified together with financial derivatives.

2. On the development of new commodity derivatives markets

In addition to the traditional commodity derivatives markets, new markets are also being developed. There

was little knowledge of commodity derivatives markets in Norway before the liberalisation of the electricity markets through a new Energy Act. In 1995, Nord Pool established a financial market for derivatives based on wholesale electricity prices. The market for hedging energy price risk² is now well established and is regulated by changes made in the Securities Trading Act in 2001.³ A Norwegian marketplace for shipping freight derivatives, Imarex, was established in 2000.

Both of these markets have experienced dramatic events.

- There was a dramatic increase in electricity forward contracts, considerable need for hedging and particularly extensive trading on Nord Pool at the end of April 1999. Because price movements were abnormally volatile, Nord Pool increased margin requirements and accepted wider deviations between the market makers' bid and offer prices. Nevertheless, one of the market makers reneged on his obligations. The others continued their activity and thus the market continued to function so that it was still possible to hedge price risk.⁴
- A Greek market participant with substantial positions on Imarex went bankrupt and could not meet his obligations to NOS Clearing in June/July 2004. The loss amounted to nearly NOK 60 million and led to a critical situation for NOS. The Financial Supervisory Authority of Norway (hereafter FSA Norway) demanded the introduction of measures to improve financial strength. The owners also recognised the need to improve the company's capital backing. Early in 2005, a new share issue raised nearly NOK 65 million. Subsequently, the activities of Imarex and NOS Clearing ASA could continue.⁵

It appears now that both Nord Pool's power derivatives market and Imarex's shipping freight derivatives market are securely established.

At present, there are several initiatives to establish a fish derivatives market. The need to hedge the risk of fluctuations in salmon prices is the primary reason for establishing a new market. International sales of various kinds of frozen white fish (blocks) are also considerable and a derivatives market for frozen white fish is also conceivable.

Another possibility is timber which is also important in Norway and the Nordic countries. One of the reasons that there is no derivatives market for timber, may be that Norwegian forest owners used to own the processing industry. Thus, the security that a derivatives market can provide existed internally in the value chain. However, around 1990, the direct ownership of the processing industry ceased as the industry became

² After the Energy Act was liberalised in 1991, Nord Pool was established as a marketplace for electricity in 1994 and financial futures were introduced in 1995. The joint Norwegian-Swedish electricity market was established in 1996 and financial forward contracts with clearing were introduced in 1997. Finland joined the Nordic energy market in 1998 and Denmark in 2000.

³ Deliberations on the proposal from the Commodity Derivatives Committee NOU (1999:29) were completed and amendments based on the proposal entered into force 1 July 2001, cf. Proposition to the Odelsting no. 53 (2000–2001) and Recommendation O. no. 104 (2000–2001).

⁴ This episode is discussed in paragraph 4.8 of NOU 1999:29.

⁵ Refer to NOS' annual report for 2004: http://www.nos.no/section.asp?section_id=556&intArticleID=801

Table 1. Prices for forward freight agreements (FFA) from Saudi Arabia to Japan on Imarex

Items	Specifications
Clearing House	NOS
Underlying Index	Baltic Exchange Dirty Tanker Route 3 – TD3 (260.000 metric tonnes of non heat crude from Ras Tanura to Chiba)
Lot (contract) Size for trading and clearing	1,000 metric tonnes
Minimum Price Fluctuation	0.25 WorldScale points
Minimum lots size for trading and clearing	0.1 lots = 100 metric tonnes
Mark-to-market and daily settlements	All contracts are marked-to-market using the IMAREX forward curve which is set in Oslo (GMT+1) at 18:30 CET. Mark-to-market credits and debits are payable daily at the latest by 15:00 CET the following business day.
Trading Hrs	Electronic trading: 24 hours Market place service: Oslo: 08:00 – 18:00 Singapore: 09:00 – 22:00 Houston: 07:00 – 16:00
Trading Hours on Last Trading Day	N/A
Last Trading Day	Trading terminates at the close of business on the 20th day of a given month, the last day of the first month of a quarter and the last day of the first month of a calendar contract. If the last trading day falls on a weekend or public holiday, the last trading day will be the nearest trading day prior to the last trading day.
Margins	Margin requirements are determined by NOS. Initial margins can be paid by cash or by Letter of Credit (LoC), whilst variation margins are settled in cash at the end of each trading day.
Final Settlement	Financial only. All contracts settle on the last day of the period using the average value of all index days in the period. For a list of non-index days please refer to the IMAREX holiday calendar.

more international. A market for futures contracts in wood pulp already exists in Chicago where the standard unit is 20 (metric) tonnes of wood pulp and the price is based on a European price index. Whether this market covers all relevant hedging needs is uncertain.

Demand for this kind of hedging requires that price fluctuations are so extensive that there is a genuine need for protection. Certainty about future prices thus has an independent value. Development of a commodity derivatives market requires a clearly defined price against which the derivative can be settled. This will be explained in the next paragraph. The hedging product supplied by the market must be inexpensive and the counterparty risk must be low. The contracts must be standardised so that the market can become liquid. Achieving this requires organised trading, formulation of contracts and a settlement system.

The final settlement price is usually standardised against a spot market for the underlying commodity. The size and quality of the lot to be secured must be clearly defined. For example, there are a number of

derivatives for various kinds and qualities of grain. Prices from the grain exchange for the physical delivery of the grain are used as the underlying for the derivatives. The expiry date of the derivatives contract (once a month or the like) must be specified. To guarantee execution of the contracts, the exchange requires collateral or completion of the contracts through a clearing house which requires a margin payment as collateral. In CPSS (2004), recommendation no. 4 is that margins shall cover losses in all normal market situations, and that the parameters used to calculate margin requirements should be based on risk and reassessed regularly.

Some commodity derivatives are not based on an underlying commodity that is traded in a market. The price against which the derivatives contract is settled is an index that has been established in such a way as to provide enough security that market participants are willing to purchase hedging products against the index. This is the case, for example, for freight indices which are traded on Imarex. Imarex uses the Baltic Exchange⁶, among others, to establish settlement prices.

⁶ The Baltic Exchange is a London-based marketplace for freight rates. They gather information daily on completed contracts and maintain a code of conduct for market behaviour. For additional information, refer to their website: <http://www.balticexchange.com/default.asp?action=article&ID=1>

Specifications of the underlying commodity, a standard contract including collateral requirements for settlement, are available on the marketplaces' websites. Table 1 shows the prices for forward freight agreements on Imarex's website.

The marketplace must establish a product that is clearly defined and suited for trade. It must also ensure sufficient activity to generate enough liquidity that prices are so clearly established⁷ that the portfolio may be rebalanced without huge expense. Efforts to acquire liquidity are particularly important in the start-up phase because this determines whether the market is attractive enough to be profitable. In marketplaces where all interest is focused on one product, the life expectancies of the market and the product are the same. In some of the major marketplaces for commodity derivatives (London, New York and Chicago), several products are traded. Products are listed and de-listed on the basis of interest and profitability for the marketplace. As a result of global financial integration, the liquidity of a product has largely been gathered in one or a few global marketplaces. If a market survives the first hurdle, one can assume that it will attract business from everyone globally who needs to hedge the specific price risk traded on that market. When seemingly similar products are traded, they are often in reality different. The difference may lie in the geographic area of delivery or in the quality of the commodity. This is the case, for example, with various oil derivatives and grain derivatives.

To establish the initial activity, the initiators have close contact with those who are assumed to be natural users. They will be large manufacturers or large consumers of the commodity. Like stock markets, commodity derivatives markets have members who receive information from the market and have access to trade in the market. Unlike stock market members, many members of commodity derivatives markets are often end users. The system of having a fixed group of members also contributed to settlement security at one time. Today, international recommendations on the use of a clearing house are usually followed. This reduces risk and allows markets to be accessible to more participants. Among these participants are speculators who take positions on the basis of their assessments of future prices. Such speculation increases liquidity and has a positive effect on the establishment of deep, liquid markets. Contracts that oblige particular market participants to quote bid and offer prices for a certain minimum volume on a continuous basis, is one important way of securing liquidity. Markets that have such market-makers are by definition liquid. In commodity derivatives markets, it is the marketplace that must take the initiative to find market participants who are will-

ing to take on these obligations. In financial derivatives markets, also the issuer of the underlying may take the initiative as they also have an interest in deep and liquid markets for their security.

3. Regulating commodity derivatives markets

In Norway (and the Nordic countries), commodity derivatives have been defined as financial instruments for a number of years. With the MiFID, which by now is implemented throughout the entire EEA, this is the European standard. Therefore, in most European countries, the same supervisory authority that supervises the securities markets also supervises the commodity derivatives markets and their activities.⁸ Commodity derivatives markets are also strictly regulated in the US, Canada and Japan. In these countries, there are special organisations that supervise these activities. These countries and the European regulations follow the standards that were established in the Tokyo Communiqué.

The first Norwegian regulation came in 2001 and was based on a proposal from the commodity derivatives committee (NOU 1999:29). This committee based its proposal on the fact that the need for an organised and well-functioning market which had the confidence of the general public indicated that the activity must be regulated by legislation. The committee chose a general regulation rather than a specific regulation for power derivatives, where the need for regulation was most pronounced, because they could not dismiss the possibility that other commodity derivatives would be developed. The possibility of salmon derivatives contracts was mentioned in particular.

In accordance with the proposal from the committee, commodities derivatives were defined as financial instruments in the Securities Trading Act. Initially, only some of the provisions in the Act were in force. These included the netting rules, which contributed to keeping the bilateral positions of market participants at a low level. It was also decided that the use of a clearing house would be required for all investment firms trading in regulated marketplaces. This reduced financial risk. The commodity derivatives committee stated that commodity derivatives activity cannot in itself have an impact on financial stability.

Commodity derivatives are also defined as financial instruments in the new Securities Trading Act. This means that the rules in the new Stock Exchange Act also apply.⁹ Thus, firms operating a regulated marketplace for commodity derivatives must be licensed as a regulated market or stock exchange and only investment firms can operate as an organised intermediary.¹⁰ The

⁷ Prices are clearly established when there is little difference between purchase price and sales price.

⁸ The EU committees ESC (European Securities Committee) and CESR (Committee of European Securities Regulators) deal with commodity derivatives issues.

⁹ The laws are the Securities Trading Act and Act on regulated markets (Stock Exchange Act) respectively. Both acts were adopted on 29 June 2007 and came into force on 1 January 2008.

¹⁰ Providing investment services such as buying and selling commodity derivatives for the general public requires authorisation. Nevertheless, both the old law (Section 7-1) and the new law (Section 9-2) allow for the participation of specialised commodity brokers in the market. The new law does not require authorisation for firms where "the main activity is own-account trading of commodities or commodity derivatives assuming that the firm is not part of a group where the main activity is providing other investment services or banking services."

ordinary rules of behaviour in the Securities Trading Act, the requirement of good business practice and the rules on supervision and sanctions also apply for commodity derivatives trading.

Rules prohibiting insider trading were among those that were not put into force in connection with the initial legislation. The rules were not adopted in part because the definition of inside information at that time did not suit commodity derivatives.

The difficulty of defining inside information for a commodity derivative may, for example, be illustrated by a plan for extensive maintenance of hydro-electric power stations. In general, one must assume that such a plan may have an impact on the market for electricity and power derivatives. Knowledge of these plans would qualify as inside information and employees at the power company would be privy to this information. However, if there is perfect competition in the energy market, other energy producers will change their production schedule in order to realise the gain that results from higher prices in the spot market. Consequently, the equilibrium price will remain unchanged. This means that there will be no net effect on the spot price or on forward prices against which the derivatives market is designed to provide a hedge. Information that can affect prices in the commodities market is not necessarily information that is relevant to prices in the commodity derivatives market. Knowledge of the maintenance plan may therefore be called inside information in the underlying commodities market, but this market is not regulated by the Securities Trading Act. This knowledge will only be inside information for prices in the financial forward market if the market for the underlying commodity does not function perfectly.

Nevertheless, there may be other information with limited distribution that can provide an unreasonable information advantage. One example might be knowledge of planned changes in the regulation in force (due to climate changes or the like). It is not the distributor or producer of the underlying commodity but the employees at the regulatory authorities who may have access to such information before it becomes public information. It is important to prevent misuse of such information. Clarification of the rules¹¹ indicates that FSA Norway would categorise trading in financial instruments by individuals with this type of information as insider trading. With regard to salmon prices that are listed in Norway, knowledge of changes both in the Norwegian regulations and in the trade regime for salmon (maximum prices to the EU, ban on sales to Russia or opening up for trade with the US) qualifies as inside information. This indicates that the public authorities should also have strict rules to ensure that market-relevant information reaches the market in an appropriate man-

ner. In this area, the Norwegian authorities must also cooperate with the authorities in other countries.

In 2005, a specific definition of inside information for commodity derivatives was given and the rule prohibiting insider trading was applied. This was an adaptation to Directive 2003/6/EC of the European Parliament and of the Council of 28 January 2003 on insider dealing and market manipulation (market abuse) and the rule has been implemented in the new act.¹² Whether the new rules solve the actual difficulties of defining inside information for commodity derivatives is not clear.

Investment firms' transactions in financial instruments (including commodity derivatives) in a regulated marketplace must be settled in a clearing house (Section 10–8 of the new Securities Trading Act). The same requirement does not apply to other market participants but companies that are not subject to an authorisation requirement (cf. note 10) will not have substantial activity aimed at the general public. The clearing house will be the central counterparty in derivative settlements and they will calculate and charge the necessary margins. The legislation on netting still applies. The settlement requirements, which are in accordance with international recommendations, contribute to opening up markets for a larger number of participants. Since the netting rules apply, the clearing houses can operate with very limited risk, and this will also make it easier to make arrangements with market-makers.

The two Norwegian initiatives to establish a salmon derivatives market received authorisation for their activities under the old Stock Exchange Act with the status of authorised marketplaces. The authorisations were converted to apply to regulated markets under the new Stock Exchange Act. When the word "stock exchange" is not used, the regulation regime is simpler. One important difference is that there is no ban on ownership exceeding 10 per cent of the share capital for regulated markets as there is for stock exchanges. In regulated markets, advance notice to FSA Norway concerning such acquisitions is required. FSA Norway can stop the acquisition if the buyer is considered to be fit and proper.

4. New Norwegian initiatives to establish a marketplace for seafood derivatives

For some time, there has been interest in establishing a salmon derivatives market in Norway. The commodity derivatives committee explained the potential to the Ministry of Fisheries and Coastal Affairs (see NOU 1999:29, p 10). Subsequently, the matter was followed up by Øiulfstad (2004), among others. The newspapers have reported on initiatives to establish such market-

¹¹ Refer to item 3.1.4 in FSA Norway's Circular no. 14/2005 "Securities Trading Act – some comments to Chapters 2 and 3".

¹² Section 3–2 (4) of the new act states: "(4) Inside information concerning commodity derivatives means precise information that is not publicly available or generally known and which directly or indirectly concerns one or more commodity derivatives and which participants in the market where commodity derivatives are traded will expect to receive in accordance with that which FSA Norway considers to be accepted market practice in the market concerned. Information which participants will expect to receive means information that is normally available for market participants or information that is to be announced as a result of legislation, including private-law (civil) regulations and practice in the commodity derivatives market involved or the underlying commodity market. The Ministry may stipulate more detailed rules on inside information in connection with commodity derivatives and accepted market practice in regulations.

places in three Norwegian cities. The status is as follows:

- Oslo: European Fish Exchange has given up its attempts to establish a market.
- Tromsø: On 2 March 2007, FishEx ASA was licensed to operate an authorised marketplace for trading of salmon derivatives. At the same time, Nord Pool Clearing ASA's authorisation was broadened to include clearing of salmon derivatives.
- Bergen: On 11 May 2007, Fish Pool ASA was licensed to operate an authorised marketplace for trading of salmon and seafood derivatives. On 19 April 2007, a press release announced that Fish Pool ASA had entered into an agreement with NOS Clearing ASA to handle settlements.

In other words, there are two companies with settlement agreements in two different clearing houses that have been authorised to operate regulated marketplaces.¹³ They each have contact with their clearing houses which have been granted broader authorisations to cover netting and settlement of such derivatives. The one firm has been engaged in OTC trading for more than a year and the other firm started organised electronic trading of standardised products in autumn 2007. Based on information from and direct contact with the company¹⁴, the following picture emerges:

FishEx in Tromsø has been established primarily to create more predictable conditions for the fish farming industry by offering products that hedge the risk of fluctuations in salmon prices. The company received authorisation as an "authorised marketplace for commodity derivatives based on fish and seafood as the underlying commodity". FSA Norway demanded an increase in the capital base before the company could start up operations, and a capital increase was completed recently. Following this capital increase, the ownership structure is as follows: Sparebank 1 Nord-Norge Invest 22 %, KapNord Fond (owned by banks and the business sector in Northern Norway) 19 %, Marinvest (i.e. Råfisklaget), 16% Troms Kraft Invest 16%, Oslo Børs 9%, SR Investering (i.e. Sparebank 1 Rogaland) 9%, Sildinvest (i.e. Sildesalgslaget) 8%.

FishEx began its trading activities during the last week of October 2007 when they decided that they had the necessary minimum of paying members, and additional members have joined since the marketplace opened. Members pay an annual fee of 750 euros and participation in the market also requires a clearing agreement with a guarantee of 20 000 euros. The Norwegian members are producers or buyers who purchase for further distribution, whereas the foreign members represent the salmon processing industry. Nearly all members have a solid foundation in the underlying salmon market,

but recently an ordinary securities firm has become a member. Some of the members have previously hedged price risk in the OTC market through FishPool or Direct Hedge, a Danish-Swiss company that was the first to offer OTC trading in salmon derivatives. Since the market opened, trading and settlement have according to their own statements, run smoothly.

The product traded in this marketplace is a forward contract at an average price per week. The contract covers the price of one metric ton of salmon delivered in a week referred to here as D (for delivery week). FishEx believes that week contracts provide the most satisfactory hedge against volatile prices. For example, in December the price fluctuations between the weeks before Christmas and the period between Christmas and New Year dominate, and month contracts would not capture this fundamental uncertainty. The price in the settlement will be based on price figures from Statistics Norway's export statistics. Thus, domestic sales of fish will not be part of the basis for the index. From the beginning, FishEx listed forward contracts for salmon prices every week for a period of six to seven months ahead. At all times, there will be forward contracts for individual weeks covering the next four to seven-week period. Weeks further ahead will be collected in blocks of four weeks. Thus, as many as twelve forward contracts will be listed, and all trading on FishEx will be in these standardised products. The trades are executed anonymously which means that the clearing house acts as central counterparty for both parties involved in the transaction.

The contracts refer to the average price for trading in week D. It is possible to enter into contracts at this price until Friday of week D-1 and the price is announced when Statistics Norway publishes its statistics on Wednesday of week D+1. The settlement will go to the settlement bank on Thursday of week D+1 and since the transaction was in forward contracts, the entire settlement will be concluded at once. The contracts will be listed in euros and the clearing house, Nord Pool Clearing, will use the same settlement system for both electricity and fish derivatives.¹⁵ The exchange rate will be the average rate at 2:15pm during the week of delivery.

Turnover on FishEx during the first weeks is not known and so far the market can hardly be referred to as liquid. Establishing an open, liquid market requires a larger number of participants. At the very least, commodity brokers and/or investment firms must be members and the general public must be informed about prices and turnover in the market.

The company has not explained whether or how they will publish market information. Due to competition, they have been cautious about public announcements. The market participants receive information on the volume of various contracts, offer price and highest bid and offer price. Two companies, both of which are in the industry, are market makers and quote bid and offer

¹³ The name and terminology from the new act will be used here.

¹⁴ From <http://www.fishex.no/> and <http://www.fishpool.eu> respectively.

¹⁵ For more information about the system of netting and settlement, see Nord Pool's website: <http://www.nordpool.no/nordpool/clearing/index.html>.

prices with a small spread. The binding volume underlying the prices is generally low. FishEx has an agreement with the market makers for all listed contracts. It is likely that interest will be highest for three- to six-month forward contracts. Market makers pay a lower transaction fee, but otherwise have no advantages in relation to the other members.

The company's first priority now is to attract more members and increase the liquidity of already existing products. Later, the company will focus on adapting salmon derivatives to market demands. It may be attractive to list seasons that consist of three blocks making it possible to hedge prices up to one and a half years ahead. Subsequently, the company may consider expanding their product range to include derivatives based on other types of fish. Forward contracts on herring, mackerel and other white fish may be of interest.

FishEx is convinced that there will be no problem of inside information about salmon prices at regulators. If the company begins trading in contracts based on white fish or other fishing products, knowledge of quotas and quota allocations may lead to problems relating to regulators with inside information.

Fish Pool in Bergen aims at creating a global marketplace for hedging the risk of price fluctuations for fish and seafood products. The company was initially established by important participants in the business sector, including the financial industry in Bergen. In February 2007, Imarex NOS ASA purchased 34.3% in a share offering and at the same time secured the right to increase their shareholding to 50.1%. Their website also lists the following shareholders: Bergen Energi AS (20.4 %), GC Rieber AS (11.7 %), Sparebanken Vest (5.8 %), DnB NOR Bank ASA (5.3 %), Nordea Bank Norge ASA (5.3 %), Fana Sparebank (5.2 %), Holberg Fondene (3.8 %), Sparebanken Sogn og Fjordane (2.5 %).

Fish Pool started trading in April 2006. Since then, Imarex NOS has provided capital and can provide experience in the area of electronic trading and settlement solutions. Fish Pool publishes daily reference prices for contracts. Fish Pool reports a steady flow of new members since start-up. The first member joined shortly after the marketplace opened, and at present Fish Pool has more than 130 members. They include fish farming companies, fish processing companies and financial brokers. There is no membership fee, but companies must provide a credit rating or a special settlement guarantee. The membership list is not public information due to competition.

Fish Pool trades futures contracts for the average monthly price in NOK. In many respects, Fish Pool may be described as an intermediary, and in autumn 2007 contracts and interest in contracts until summer 2009 were mapped out. Interest is highest in the shortest contracts, i.e. a half year ahead. Interest in hedging against price fluctuations further ahead has fallen. In October 2007, Fish Pool announced that a number of contracts

expiring at the end of 2007 and year contracts for 2008 had been traded. They had not executed any trades in futures contracts with expiration dates in 2009. Prices for these contracts are partly based on registered interest for these contracts and partly on Fish Pool's own estimates. The reference price used in the settlement of these contracts has been calculated on the basis of a detailed specification which ensures that the quality of the underlying product does not change. A special committee supervises the calculation of this price.

A one-month contract may be entered into until the last day of the month of expiry. At that time, the basis for the price is generally known so there is limited trading towards the end of the month. The reference price is stipulated on the 15th of the month following the expiration of the contract. Fish Pool currently offers trades that are netted through a clearing house and trades that are settled directly between the buyer and seller. Since the trades that are settled through the clearing house are futures contracts, margins are paid in on a daily basis. Therefore, the final settlement of the contracts often involves only a small sum and is executed on the 16th of the month. For contracts that do not go through a clearing house, Fish Pool sends out a letter with the reference price and the settlement amount. This letter will serve as a voucher in the private billing of such contracts.

Fish Pool does not publicise sales figures due to competition. On their webpage in March 2008, however, Fish Pool announced record turnover in February, with contracts for more than 1200 metric tons of salmon. They stated that the contract value of the month passed NOK 1 trillion. Compared with the news-letters released a few months ago, it appears that activity has increased considerably.

Fish Pool uses the same electronic trading system that is used by Imarex. This system is also used by commodity derivatives markets in other countries. Due to limited activity and know-how about the system, many members place their orders by phone, fax or e-mail and Fish Pool's employees place the orders into the electronic trading system. Whether parts of the market can today be called liquid is a matter of opinion. The majority of trades involve futures contracts with expiry dates in the next twelve months. In efforts to establish a liquid market, the marketplace has close contact with market participants to map out hedging needs and price assessments.

One way to strengthen liquidity would be to establish a market maker system. Fish Pool would like to have such a function connected to the marketplace. So far, however, they have been unable to find anyone willing to take on the risk of continuously quoting two-way prices with a minimal spread between bid and offer prices. Regulatory uncertainty is considered to have little impact on price movements. Price movements are driven by fundamental changes in supply and demand.

In those cases where a clearing house does not execute the settlement, the parties must approve each other. Settlement of the trade is based on mutual credit limits which may, for example, be based on bank guarantees. When the clearing house (NOS Clearing) is involved, they will make daily calculations and require regular margin payments. Fish Pool provides daily closing prices for this market settlement.¹⁶ The information concerning price and trading volume distributed by Fish Pool to all market participants is based on all trades regardless of whether they have been netted through the clearing house or not.

5. Conclusions and future perspectives

Commodity derivatives markets provide a means of hedging against the risk of unfavourable fluctuations in prices for a particular commodity. For some commodities, this protection has in practice proved to be important for the development of the value chain from production to final sale to end users. Since this is a private, organised market that provides hedging products, the government budgets are not affected. The public authorities make their contribution by establishing an adequate regulatory framework which ensures that markets are well-organised and that the threat of collapse is reduced. The application of netting rules and adequate financial soundness and supervision of the clearing houses connected with derivatives trading are particularly important for financial stability.

In Norway, the marketplaces for power and freight derivatives have been in operation for twelve and seven years respectively. After experiencing dramatic episodes, both marketplaces have established their activities as a useful means of hedging price risk. It is important for international users of the marketplaces that regulation and supervision of these activities in Norway are in line with good international standards. As a result of the legislative decisions in 2001 and implementation of the MiFID, the legal framework – both in Norway and the EEA – is now in place. FSA Norway has six years' experience as a supervisory body and is thus well qualified to ensure that such markets develop in Norway without destructive scandals or dramatic events.

With regard to the development of fish derivatives markets in Norway, the activity surrounding the two initiatives appears to indicate a need for products that hedge the price of salmon. Competition between the two marketplaces has not been clarified, but a great deal will probably be in place soon.

The authorities need not be concerned about the outcome of this competition. The existence of a market-based system to hedge price risk may be an advantage since it would probably reduce the need for other measures initiated by the authorities. The authorities should have a relaxed attitude about the creation or loss

of investor values as long as the regulatory framework or supervision is not responsible for creating or destroying assets. One area where some public agencies may require training is information processing. If financial markets for additional commodity derivatives are developed, equal access to relevant information will be a critical factor. With new underlying commodities, new public agencies may come into the "line of fire". Since well-functioning procedures already exist in parts of government administration, the necessary skills development should not pose any particular problems.

Those with interest in the initiatives to establish a market for fish and seafood derivatives, can on a day-to-day basis monitor the success of their initiative (and assess their possibility for a financial loss). Observers outside the industry can at the same time follow the future of the two initiatives and the potential market. If a lasting market is established it will be proof that the possibility for a price hedge for salmon is a useful contribution to the industry.

References

- CPSS (2004): *Recommendations for Central Counterparties. Third report by Task force on Securities Settlement Systems*. Bank for International Settlements & International Organisation of Securities Commissions, November 2004
- NOU 1999:29 *Varederivater* (Commodity Derivatives) Report from an advisory group with mission and appointment from the Ministry of Finance 7th of July and 25th of September 1998. Final report to the Ministry 8th of September 1999. Statens forvaltnings-teneste
- Tokyo Commiqué (1997): *Tokyo Communiqué on Supervision of Commodity Futures Markets*. Annex 1, pp 118–133 in NOU 1999:29
- Øiulfstad, Bjørn O. (2004): "Etablering av markedsplass for oppdrettslaks" (Establishing a marketplace for farmed salmon), pp 89–93 in *Årbok 2004–2005*, Law firm Steenstrup Storange DA

¹⁶ More information about this clearing is available on NOS Clearing's website: <http://www.nos.no/frontpage.asp>.