

FAQ that are answered in this document:

- How to understand the NASDAQ Salmon report, example week 51 in 2020:..... 2
- Who are the contributors of input data?..... 3
- What formalities secures the calculation of the Nasdaq price? 3
- What information is used from each exporter in producing the price? 4
- What standard information is used to calculate the NASDAQ price?..... 4
- Example – how to come from 7,00 EUR/kg DDP to 73,18 NOK/kg Oslo? 4
- What are the standard freights used in the calculation?..... 5
- Freights from Oslo used from Jan 2023: 5
- Why do you use 1,30 NOK/kg as add-on to Oslo from all over Norway? 5
- Why are you not using the correct freights registered for each customer by the exporter?..... 5
- What controls are there of the reported figures? 5
- Conclusions from the Kontali audit of the contributors 2021..... 6
- How can I use the NASDAQ price to calculate my selling and buying price?..... 6
- Why is salmon sold to overseas markets by air-freight not included? 6
- Is the Nasdaq price a correct market price? 7
- When is the volume that is reported slaughtered and what is done with unsold salmon? 8
- When is the price that is reported agreed? 8
- How is the average weekly currency EURNOK, GBPNOK etc calculated?..... 8
- How much volume is reported, and are there volume limits? 9
- What product is reported and to what markets? 9
- How much of the total export volume is included in the Nasdaq report? 9
- Why is Fish Pool using 30% SUP3-4, 40% SUP4-5 and 30% SUP5-6 in the settlement of contracts?10
- Where can I find more details about spot prices for salmon? 11
- FAQ concerning the old NOS/FHL – price and the new NASDAQ price: 12

How to understand the NASDAQ Salmon report, example week 51 in 2020:

NASDAQ Salmon Index - Prices Per Weight Class

Weight Class (kg)	Price (NOK/kg)	1 Week Change	Distribution %	St.dev.
1-2	36.87	-1.47	1.19	1.13
2-3	40.32	-0.40	7.03	1.10
3-4	42.90	1.45	20.69	0.77
4-5	43.55	1.69	28.93	0.61
5-6	43.75	2.17	27.21	0.96
6-7	43.11	1.92	11.05	0.99
7-8	43.21	2.37	3.11	0.88
8-9	43.63	2.00	0.70	1.17
9+	43.18	0.69	0.09	1.95
NQSALMON	43.11	1.59		

- **NQSALMON** for week 51 was **43,11** NOK/kg average price all sizes. This is a volume weighted calculation. (price SUP1-2 of 36,87 * 1,19 % + price SUP2-3 of 40,32 * 7,03 % ... + price SUP9+ of 43,18 * 0,09%). **Week change. 1,59 NOK/kg** higher than in week 50
- **Distribution**, This is % of reported volume (not slaughtered volume). Remember that only export to Europe is included. Volume sold by air-freight etc is not included
- **St.dev.** Standard deviation is a mathematical formula of the variation in the prices reported. A low st. dev means that the exporters reported quite equal prices. A very easy example with 2 exporters. Average price 50,60 NOK/kg and st.dev 0,49. According

	Volume	Price	Average Price	Price dev.	Square 0,60*0,60	Mult with volume 2000*0,36
Exp A	2000	50,00	50,60	-0,60	0,36	720
Exp B	3000	51,00	50,60	0,40	0,16	480
	5000					1200
			Variance/kg (1200/5000)			0,24
			Standard deviation(v of 0,24)			0,49

to the mathematics 68% of the reported volume is within 50,60 NOK/kg plus/minus 0,49 NOK/kg. The mathematics needs a lot of statistics to give a correct answer, but st dev is a good indication of the spread in prices reported from the exporters.

- Average St.dev for SUP3-6 kg salmon was 1,08 NOK/kg in 2020 and 1,04 NOK/kg in 2019.

Page 2 shows the SUP3-6kg price of **43,42 NOK/kg** used for settlement of Fish Pool contracts:

NASDAQ Salmon Index 3-6kg weighted 30/40/30

Week 51/2020



NASDAQ Salmon Index 3-6kg weighted 30/40/30

NQSALMON 3-6kg (NOK/kg)	43.42	
1 Week Change	▲ 1.76	+4.23%
4 Week Change	▼ -2.34	-5.11%
12 Week Change	▼ -5.61	-11.44%

Who are the contributors of input data?

Nasdaq receives (January 2023) contributions of input data from the following contributors. Kontali estimates that these exporters cover 55-60% of the spot volume sold to Europe:

- Bravo Seafood AS
- Cermaq Norway AS
- Fram Seafood AS
- MOWI Markets Norway AS
- Norwell AS
- Nova Sea AS
- Norway Royal Salmon ASA
- Polar Quality AS
- SalMar AS
- Seaborn AS
- Sjør AS

What formalities secures the calculation of the Nasdaq price?

Both Nasdaq Copenhagen and Fish Pool are registered formally as Benchmark administrators in the EU, European Union. The Financial Supervisory Authority has thus checked all formal procedures and controls to secure that the Methodology for calculating the index has high quality, integrity, auditing and transparency and that conflicts of interest is avoided etc. Here is a link to the Nasdaq Methodology <https://www.nasdaq.com/solutions/nasdaq-benchmark-administration> Here is link to the Fish Pool Index (Benchmark regulation) procedures <https://fishpool.eu/trading/benchmark-regulation/>



Homepage > Benchmarks administrators > Register details

Benchmarks administrators - Details

Full name	Legal entity identifier	Country	Supervising authority	EU/EEA status	Relevant authority
Fish Pool ASA	213800EH1X00WX1VYBV42	NORWAY	Norwegian Financial Supervisory Authority (Finanstilsynet) - NOFI	Registration under Art. 34	Norwegian Financial Supervisory Authority (Finanstilsynet) - NOFI
Nasdaq Copenhagen A/S	549300WY2UL5PLJ8E17	DENMARK	Finanstilsynet - DKFI	Registration under Art. 34	Finanstilsynet - DKFI

What information is used from each exporter in producing the price?

Information from the invoices is used in the report. The NASDAQ – report is calculated using only the following information on each invoice. Example for the calculation:

- Volume in kg. Ex: 1.110 kg SUP3-4
- Invoiced amount in currency. Ex: 7.770 Euro
- Incoterms. Ex: DDP
- Country of delivery: Ex: Germany

What standard information is used to calculate the NASDAQ price?

The following information is used to calculate the standard price:

- Average standard currency for the relevant week. (all exporters use exactly the same average currency rate)
- Freight from Oslo to each country (average freight estimate. The same standard freight is used for full-loads, part-loads and pallets transported, same freight all over the country)
- Custom 2% into EU and export fees 0,60%

Example – how to come from 7,00 EUR/kg DDP to 73,18 NOK/kg Oslo?

Pink figures: info from IT system of exporter			
Red figures: standard figures for all exporters			
Country	Germany		
Incoterm:	DDP		
Product	SUP3-4 kg		
Invoiced	7 770 Euro		
Weight	1 110 kg		
Amount	7,00	Eur/kg	
EURNOK	11,0000		Average currency for the week
In NOK	77,00	NOK/kg	
Freight	-1,50	NOK/kg	Same freight all over Germany
Price EU border	75,50	NOK/kg	
EU-cust 2%	-1,48	NOK/kg	Customs to EU is 2%
Added	-0,03	NOK/kg	Calculated as 2% of customs
Exp duty 0,60%	-0,45	NOK/kg	Market 0,30%, science fee 0,30%
Fixed 400/order	-0,36	NOK/kg	400 NOK divided by kg - here 1110kg
Oslo price	73,18	NOK/kg	

What are the standard freights used in the calculation?

When the seller pays the freight, the invoiced amount includes freight costs. To calculate Oslo prices a standard freight rate is deducted. For deliveries in the European countries, the following freight rates are used.

This is an estimated average of full-loads, pallets etc. Much sales to east-Europe are sold FCA and EXW packing station, where the customer collects the salmon. Freight is thus not included in the invoice. All salmon sold at FCA and EXW terms are **added 1,30 NOK/kg** (increased from 1,10) as standard freight rate to Oslo (same standard 1,30 NOK/kg wherever in Norway the customer collects his salmon)

Freights from Oslo used from Jan 2023:

The previous freight update was done in March 2022.

Country	New	Old									
Swed	1,05	0,94	Poland	1,30	1,21	Austr	2,40	2,40	Portu	3,50	3,30
Denm	1,05	0,94	Germ	1,50	1,35	Switz	2,40	2,40	Ukraine	3,00	2,75
Finl	1,50	1,10	Belg	2,00	1,65	Italy	2,60	2,50	Belar	3,00	2,75
Estl	1,40	1,21	Neth	1,65	1,65	GB	2,80	2,75	Czech	2,40	2,40
Latvia	1,40	1,21	Lux	1,65	1,65	Irel	4,00	3,60	Slovak	2,50	2,40
Litau	1,40	1,21	France	2,10	2,00	Spain	3,10	2,90	Greece	4,10	3,30
									Romania	3,80	2,75

Why do you use 1,30 NOK/kg as add-on to Oslo from all over Norway?

For all salmon sold delivered outside Norway (DDP and DAP) the 1,30 NOK/kg is not used at all. The freight costs are included in the invoiced price, and the deduction method, see above, is used.

The add-on to Oslo is only relevant for salmon sold FCA and EXW, where the buyer collects the salmon in Norway. The invoice does not contain freight, and 1,30 NOK/kg is thus added to calculate an Oslo price. Much of the salmon sold to Eastern Europe (and Russia) is sold FCA or EXW. For these sales 1,30 NOK/kg is added, wherever in Norway the salmon is collected, packing station or Oslo.

Why are you not using the correct freights registered for each customer by the exporter?

The exporters normally register all costs on each order and has thus a more correct calculation of costs than these standards on each single invoice. The Nasdaq price is thus not an exact calculation of Oslo price, but “the law of big numbers” means that the average is close to correct. Standards are used to secure control as no internal information other than invoiced amount and weight is used from each exporter. It is thus easy to audit and secure correct calculation, as all is standardized. Kontali Analyse audits both invoices included in the Nasdaq Salmon index, and volume not included (fixed price contracts etc)

What controls are there of the reported figures?

There is a weekly control when each company is reporting. There are ongoing audits done annually of Kontali Analyse AS of the reporting companies, where almost all contributors were audited 2020-2022, and the audit report is made public. See <https://fishpool.eu/compliance/> “Benchmark regulation” for audit reports. Only small technical deviations have been found in the audits. The quality and correctness of the reporting has been documented as high.

Conclusions from the Kontali audit of the contributors 2021

Summary of audits: 11 exporters (March 22) report to NQSALMON, they represent together 55-60% of the Norwegian export volume to Europe

HOG export in total from Norway was 946' tons in 2021. 83% to Europe, that was 785' tons. Volume reported in NQSALMON was 250' tons. 32% of HOG volume delivered in Europe was reported in NQSALMON

All sales are audited, both volume reported in NQSALMON and volume not included in the report

Volume **not** included in NQSALMON:

- Kontali estimates 30% as fixed price contracts,
- Special qualities (ASC, Organic, ORD-quality etc)
- Internal deliveries within a group with same owner, owning more than 50%
- Other exporters not in the group of 11 contributors

Adding new contributors to the 11 exporters reporting may improve credibility and strengthen the index. But it is expected to have limited effect on the actual values (prices reported in NQSALMON)

Standard Deviation, STD, between the contributors for SUP3-6kg was 1,69 NOK/kg in 2022, mainly due to STD of 2,46 for SUP5-6kg. (up from 1,19 NOK/kg in 2021 and 1,08 NOK/kg in 2020). The low STD confirms the solid representation of NQSALMON and that the contributors operate in the same weekly market.

Kontali has audited almost all contributors in 2020 and 2021 and found some "minor inconsistencies", (mostly product definitions) but they were of no significant consequence to the integrity of the benchmark

Conclusion from audits: Contributors show satisfactory knowledge of the reporting procedures and demonstrate detailed expertise on the internal procedures and systems to meet the reporting criteria

Kontali conclusion: NQSALMON is highly representative for the spot market for fresh head-on gutted superior quality salmon sold from Norway to the European market

How can I use the NASDAQ price to calculate my selling and buying price?

The new NASDAQ Salmon Index will give a correct estimate of the prices in the physical market. Fish Pool recommends all buyers and sellers to calculate the difference between the price they sell at packing station or buy DDP delivered own plant and the NASDAQ price. This is important for comparing a fixed price delivery contract DDP your plant with a financial contract with reference Oslo. NASDAQ prices are calculated using standard freight rates etc. buyers should be careful in expecting that a cost calculation using the exact transport costs from Oslo to your plant will give an exact price for a DDP delivery.

Why is salmon sold to overseas markets by air-freight not included?

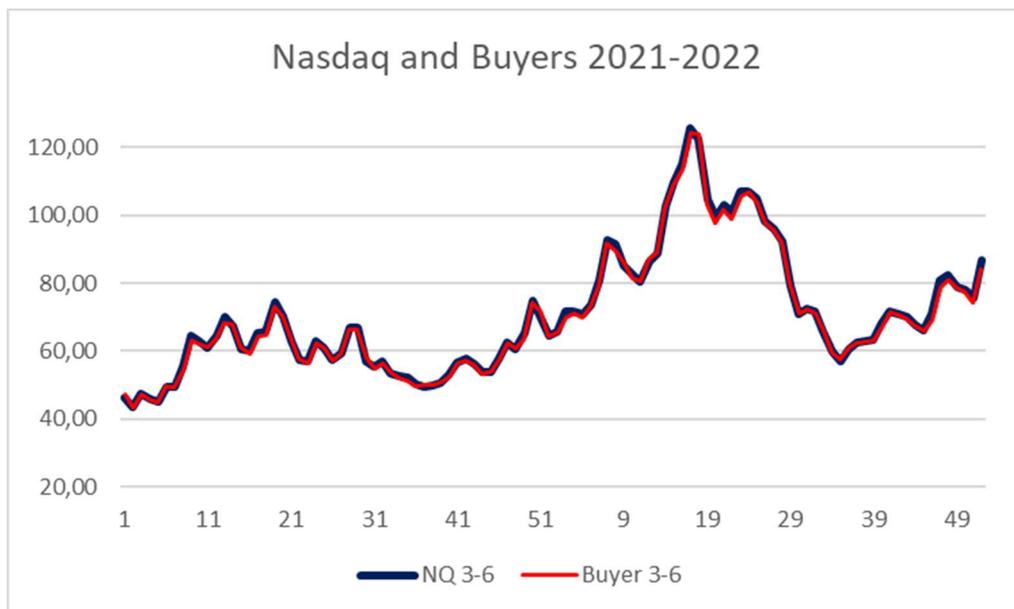
Salmon sold by air-freight to overseas markets are not included in the NASDAQ price calculations. The freight costs are a large part of the invoiced amount. It would be impossible to use standard

calculations for salmon transported by air-freight and the errors in calculating an Oslo price would be too high.

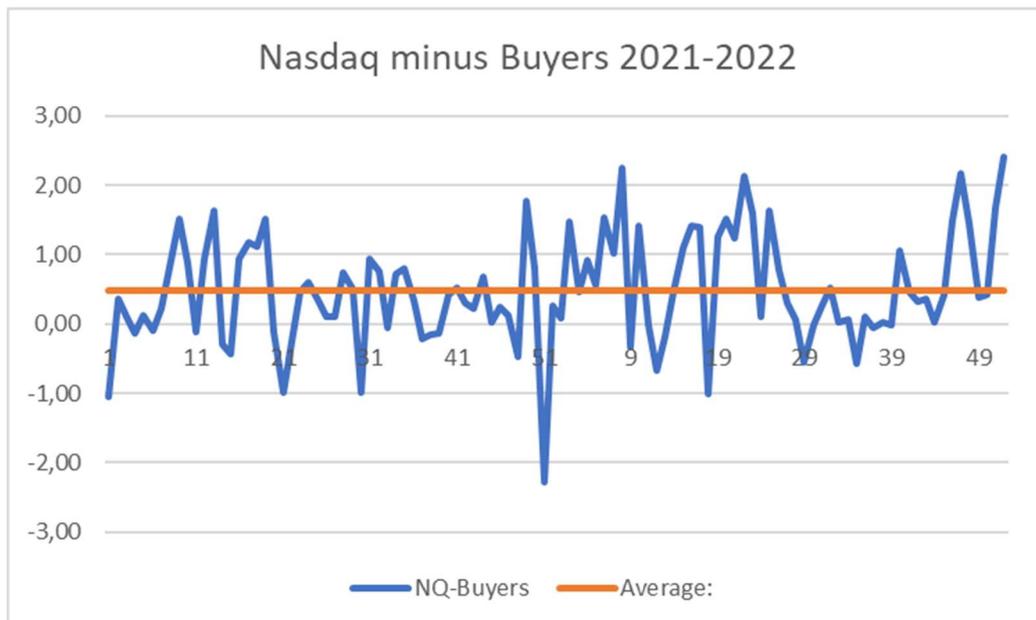
Is the Nasdaq price a correct market price?

The Nasdaq price is calculated based on actual invoices sent from exporters to European customers (all passing customs clearance). There is a complete audit trail: Example the SUP4-5 price of 43,55 in week 51 is calculated as the documented SUP4-5 price from each exporter, and the SUP4-5 price from each exporter is documented by invoices sent. See calculation example below.

Both Nasdaq and Fish Pool has engaged Kontali Analyse AS as auditor of the indices, controlling the figures and procedures. The Nasdaq price is based on selling price from Norwegian exporters. An important comparison is the Fish Pool European Buyers Index where more than 40 large buyers in 13 countries report their purchasing prices. Average weekly volume reported in 2022 was 1.879 tons. These prices are calculated back to Oslo based on the same procedures as the Nasdaq price. Below you see the 2 indices compared for 2021 and 2022.



Below you see the difference between sales price (Nasdaq) and buyers' price (Buyers Index). On average the Fish Pool European Buyers Index was 0,48 NOK/kg lower than the Nasdaq price. As the buyer's index consists of large buyers only, min 1 full-load per week, the average price is historically slightly lower than the Nasdaq price containing all invoices, full-loads, pallets etc. Statistically important is that there are no trends, only random deviations confirming that both indices reflect the same market price.



Please contact Fish Pool if you want to participate in the Buyers index, the benchmark report is free of charge.

When is the volume that is reported slaughtered and what is done with unsold salmon?

The price reported in the NASDAQ price is (almost 100%) volume slaughtered in the reported week. Day of invoicing is decisive: ex week 51-2022. The volume reported was invoiced in week 51, Monday to Sunday. All exported volume must be followed by an invoice to be custom cleared.

There is a possibility that salmon slaughtered in week 51 was not sold and thus invoiced Monday - Tuesday etc week 52. If so, the volume will be reported in week 52-2022 as day of invoicing is decisive for the NASDAQ –report. Sometimes a Pro-forma invoice is used to send unsold salmon to Denmark etc. Pro-forma invoices are not included, the correct invoice is used. Normally sent the following week.

When is the price that is reported agreed?

The price is agreed between exporter and customer in Europe at very different times. Some volume is agreed the week before delivery, and some volume is agreed on the day of slaughtering and transporting. Ex week 51-2022, a lot of the volume invoiced is agreed on Thursday and Friday in week 50. When the NASDAQ price is sent you by email Tuesday week 52, the NASDAQ price will reflect a market price agreed from 10 days to 5 days ago.

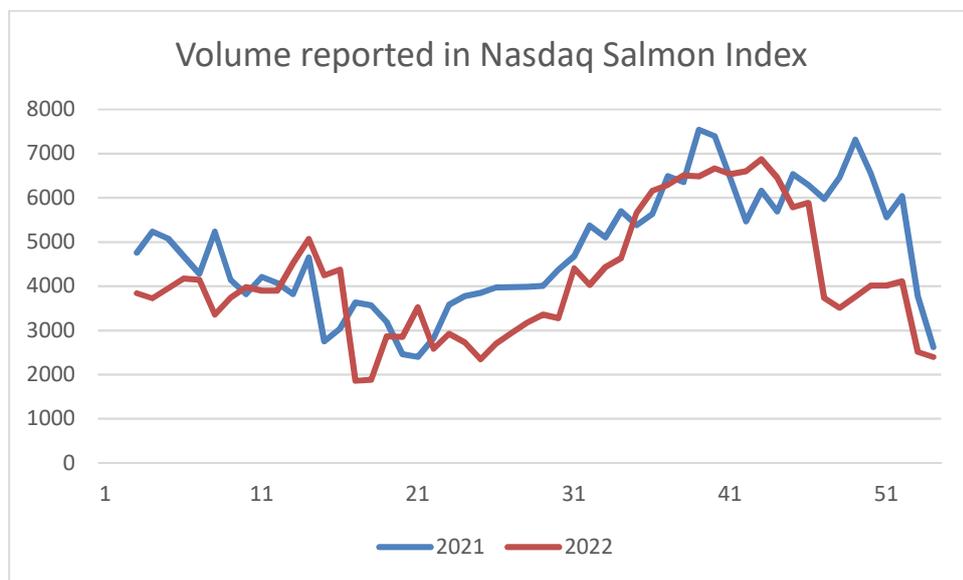
How is the average weekly currency EURNOK, GBPNOK etc calculated?

60% is Monday-Thursday in the spot reference week, 40% is the Friday the week before. Ex week 51 -2022 from Mon Dec 19th to Fri 23th : Friday 16th weights 40% and Monday 19th to Thursday 20th weights 15% each.

How much volume is reported, and are there volume limits?

In the NASDAQ price all exporters selling more than 5 trucks HOG/ week, (app 5.000 tons/year) to Europe may report. In 2022 an average of 4.182 tons/week (in 2021 on average 4.807 tons/week) was reported.

There is a 25% volume limit per reporting company on total reported volume (not per size). Ex: One week 6.000 tons is reported from several exporters, one exporter reports 1600 tons (thus 27%). This exporters volume is reduced to 1500 tons (thus 25%) by reducing volume of all sizes by 6,3%. His reported prices are not changed. For the small volumes, SUP1-2, SUP7-8 etc it may happen that one exporter has much more than 25% of the total volume of these sizes.



What product is reported and to what markets?

Standard SUP – salmon, including Global gap, but not ORD-quality, Label rouge, organic and ASC (they are normally sold on fixed price contracts and thus excluded). Not air-freight, fillets and other non-standard whole gutted salmon products. Also, not fixed-price contracts, nor promotions like 2-3 weeks fixed prices. Not sales within Norway, to other exporters or Norwegian clients. Either place of delivery or customer address must be in one of the listed European countries below.

How much of the total export volume is included in the Nasdaq report?

Exporters representing approximately 2/3 of the export volume participates in the Nasdaq report. In 2021 a total of 1532' tons WFE were slaughtered and 1040' tons exported from Norway, 848' tons to Europe. On average 20.008 tons (1040'/52 weeks) were exported weekly to EU and 4.807 tons reported as standard spot sale to Nasdaq: (HOG means head on gutted, appr 90% of the round weight, WFE):

Salmon volume 2021	Average weekly	%	Total tons 2021	
Slaughtered volume round weight	29 463		1 532 100	tons
Export fresh salmon HOG	20 008		1 040 401	tons
Export outside Europe	3 706			
Export to EU-27 incl UK	16 302	100 %	847 715	tons
30% to fixed prices	-4 891	30 %		
18% ORD, ASC special products	-2 915	18 %		
10% internal deliveries / Nasdaq indexed	-1 630	10 %		
Total sale standard salmon EU to spot prices	6 866	42 %		
30% non-reporting exporters	-2 060			
Spot sale to EU reported to Nasdaq	4 807	29 %		
Average weekly volume reported to Nasdaq	4 807			

The reported weekly volume to Nasdaq is down 3% compared to 2019, and we “guesstimate” that increased share of ASC and special deliveries is the main reason. If all other variables are kept equal, an increase from 10% to 18% of special deliveries to Europe can explain the reduction of reported volume from 2019 to 2021.

Fish Pool previous “guesstimates” from 2019 (4.970 tons were reported weekly to Nasdaq):

Salmon volume 2019:	Average weekly	%	Total in 2019	
Slaughtered volume round weight	25 962		1 350 000	tons
Export fresh salmon HOG	17 129		890 712	tons
Export outside of EU-27	-3 093			
Export to EU-27	14 036	100 %	729 857	tons
30% to fixed prices:	-4 211	-30 %		
10% ORD, ASC. etc special	-1 404	-10 %		
10% internal deliveries + Nasdaq ind	-1 404	-10 %		
Total sale EU to spot prices	7 017	50 %		
30% exp non-reporting companies	-2 047	-15 %		
Spot sale to EU from reporting comp	4 970	35 %		

29% of the total fresh export volume to EU was reported to Nasdaq for 2021. The following volumes are not included. Fish Pool has estimated the % in the calculations above:

- Fillets, frozen, ORD; ASC etc (only Head on gutted incl Global Gap)
- Sales outside EU-27 and sales to Norwegian buyers
- Internal deliveries within a company and Nasdaq indexed sales contracts
- Fixed price contracts

Why is Fish Pool using 30% SUP3-4, 40% SUP4-5 and 30% SUP5-6 in the settlement of contracts?

The SUP3-6 kg salmon are the standard sizes used by the salmon processing industry. Around 80% of the exported volume of salmon to Europe are in these sizes. Of the SUP3-6 kg volume in the Nasdaq price in 2020 the distribution was as follows (2019 figures in parenthesis):

- SUP3-4 kg **29,4%** (35,1%) Fish Pool uses 30% when calculating the settlement price
- SUP4-5 kg **41,2%** (39,9%) Fish Pool uses 40% when calculating the settlement price
- SUP5-6 kg **29,4%** (25,0%) Fish Pool uses 30% when calculating the settlement price

Where can I find more details about spot prices for salmon?

Click the following link to Fish Pool spot information: www.fishpool.eu Price information. Historical Nasdaq spot prices can be found at: <http://fishpool.eu/price-information/reports/nasdaq-salmon-index-archive/> On this page, you will also find a link to historical NASDAQ and NOS/FHL prices back to 1995. Please note that this is a paid service from Nasdaq.

Before 2013 the NOS/ FHL price was the agreed price between farmer and exporter, adding transport costs from packing stations in Norway to Oslo. Thus, **buying** price Oslo.

The Nasdaq price is the price agreed between exporter and European customers, thus **selling** price FCA Oslo including margin to exporter and transport costs from packing stations in Norway to Oslo.



The price reporting has a 25 years history with transparency. All prices are available in Excel:

Year	Week	Price						
		1-2	2-3	3-4	4-5	5-6	6-7	7+
1995	1	32,26	32,81	31,89	30,98	29,9	30,23	33,57
1995	2	33,43	32,88	31,44	30,48	29,7	29,57	32,42
....

FAQ concerning the old NOS/FHL – price and the new NASDAQ price:

What is the main difference between NOS and NASDAQ price?

NOS price was an exporter **buying** price. Price paid by exporters buying from external farmers in Norway. (*external* means farmers not owned by the exporters). NASDAQ price is an exporter **selling** price. Price paid by European buyers to exporters.

Was the NOS/FHL price an exact purchasing price Oslo?

The NOS price reported price paid to farmer at packing station. A standard add-on for freight to Oslo was used for all; South Norway 0,50 NOK/kg, Nordland 1,00 NOK/kg and Troms/Finnmark 1,30 NOK/kg. If a lot of salmon was transported from the north of Norway eastbound, and from the west of Norway south and westbound, the exporters may have had lower costs than the standard NOS calculation to Oslo indicated.

Is the NASDAQ price an exact selling price Oslo?

Only salmon transported by truck is included in NASDAQ, (around 80-85% of volume exported in 2011-12). Figures from SSB – Export Statistics Norway indicate that salmon sold by air-freight is sold at higher average prices. The NASDAQ report uses standard calculations and rates for freights, duties etc. The real costs for each exporter may vary.

What is exporter's margin?

Exporters margin is normally defined as sales price minus purchasing cost and all costs that can be allocated to each order; transport, duties, terminal costs etc. (Fixed costs like salary, rent, phones etc are not included when defining the margin)

What was the difference of 0,75 NOK/kg between the NOS and NASDAQ price?

This is the estimated difference between the old NOS price and the new NASDAQ price. From week 29 in 2012 until week 13 in 2013 the exporters had a parallel reporting of both NOS and NASDAQ price. Kontali did an additional analysis for 3 exporters for the whole of 2012. In total, we estimated a historical difference of 0,75 NOK/kg, and Fish Pool thus added 0,75 NOK/kg on the NOS price for SUP3-6 kg to convert to Nasdaq Oslo.

Please note that the NASDAQ price is a completely new price at a new point of measuring with very different exporters reporting. It is thus not correct to say that the difference between NASDAQ and NOS is selling price minus buying price and thus exporter's margin.

The NASDAQ price is a completely new price at a new point of measuring with very different reporters reporting. The concept of standard calculations, see above, also indicates that the exporters margin cannot be defined using NASDAQ and NOS as reference.

The NOS price stopped in week 13-2013. That comparison can no longer be done.