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Nasdaq Salmon Index Audit Report on Compliance with the European Benchmark Regulation

Summary

EU's Benchmark Regulation (BMR) came into force in June 2016 and was applied from the 1st of January 2018. The objective of the BMR is to improve governance and control over the benchmark process, particularly in relation to conflicts of interest, and improve the quality of Input Data and methodology. The BMR covers each stage of the benchmark process, with requirements pertaining to procedures, benchmark Administrators, Contributors of Input Data, and users of benchmarks. The BMR builds on the IOSCO Principles for Financial Benchmarks, which are global standards published in July 2013.

In accordance with BMR Annex II §18, Kontali Analyse has been appointed by Nasdaq Copenhagen A/S in its capacity as the registered BMR Benchmark Administrator of commodity benchmarks to conduct the compliance audit.

Last year's audit covered Nasdaq Copenhagen's adherence to the methodology criteria for the NQSALMON as well as Nasdaq Copenhagen's adherence with the relevant requirements for the BMR, including Articles 10, 27, and Annex II of the BMR.

The scope of this year's audit, covering the period 2021 and up to the 1st semester of 2022, is narrowed, focusing primarily on 3 topics – all related to the quality of NQSALMON. The scope of the audit refers to a large degree to paragraph 5, 6 and 7 in annex 2 of EU benchmark regulation.

Following the audit, the auditor finds NQSALMON to be in compliance with the BMR for the scope of the audit. This follows an assessment of coherence to the benchmark methodology, examination of the quality and integrity of benchmark calculations, the integrity of the reporting process including procedures in relation to the contributors and submitters.

Table of Content

Summary	i
Definitions and Abbreviations	iii
0 Independent Auditor	v
0.1 Kontali Analyse.....	v
0.2 External Auditor Assignment.....	v
0.3 Independence, Limitations, and Use of Report	v
1 Introduction	1
1.1 Scope of the audit.....	1
2 Nasdaq Salmon Index - Organization.....	2
2.1 Overview	2
2.2 NQSALMON.....	2
2.3 Benchmark History and Corporate Structure.....	3
2.4 Oversight Committee	3
3 Audit scope and index compliance.....	6
3.1 Representativeness of NQSALMON.....	6
3.1.1 Contributors	6
3.1.2 Consequences of mergers and acquisitions in the salmon market.....	6
3.1.3 Geographic scope of NQSALMON.....	6
3.1.4 Auditor's Comment	7
3.2 NQSALMON - its reflection of actual market price.....	7
3.2.1 Fish quality	7
3.2.2 Discounts.....	7
3.2.3 Sustainability certification and brands.....	7
3.2.4 Ordinary quality salmon.....	8
3.2.5 Transportations cost.....	8
3.2.6 Auditor's Comment	8
3.3 Ad hoc audit on weekly data quality checks (integrity of benchmark calculations).....	9
3.3.1 Ad hoc audit for selected weeks.....	9
3.3.2 Auditor comments	11
4 Administrator follow-ups from last audit	12
5 Summary of Auditor Comments and Suggestions.....	13

Definitions and Abbreviations

Added transportation costs	The standard transportation cost to be added by Contributors to the invoiced price in the Input Data for sales with delivery within Norway for final destination outside of Norway and transportation paid by the buyer
Administrator	Nasdaq Copenhagen AS in its capacity as registered benchmark Administrator under the BMR
ASC certification	Aquaculture Stewardship Council certification (sustainability certification)
Assessor	An employee of an Administrator of a commodity benchmark, or any other natural person whose services are placed at the Administrator's disposal or under the control of the Administrator , and who is responsible for applying a methodology or judgement of Input Data and other information not reach a conclusive assessment about the price of a certain commodity
BMR	EU's Benchmark Regulation. Regulation (EU) 2016/1011 of the European Parliament and of the Council of 8 June 2016 on indices used as benchmarks in financial instruments and financial contracts or to measure the performance of investment funds and amending Directives 2008/48/EC and 2014/17/EU and regulation (EU) No 596/2014
BMR Oversight Committee	The permanent oversight function established and maintained by the Administrator to ensure oversight of all aspects of the provision of benchmarks administrated by the Administrator
Contributors	Norwegian salmon exporters and salmon producers with export licence, reporting Input Data for the calculation of the NQSALMON .
Deducted transportation costs	The standard transportation cost to be deducted by Contributors from the invoice price in the Input Data for sales with delivery outside of Norway and transportation paid
FCA	Free Carrier. Incoterm for when the seller is responsible for the delivery of goods from the seller's depot to a destination specified by the buyer.
HOG	Head on gutted. Refers to Atlantic salmon where the fish has been gutted with the head is still on
Incoterms	International Chamber of Commerce official rules for the interpretation of trade terms
Input data	The average price and volume from actual invoiced commercially based physical transactions made on arms-length basis in the Index Product , where prices and corresponding volumes have been agreed in the

	week prior to the week of invoicing or in the week of invoicing
Index product	Fresh Atlantic superior salmon, head on gutted, transported from Norway to Europe in weight classes 1-9+ kg
Index Value	The volume weighted average price per weight class and across all weight classes, and the average price in the 3-6 kg weight classes weighted 30% 3-4 kg, 40% 4-5 kg and 30% 5-6 kg.
IOSCO	International Organization of Securities Commissions
Methodology	The written rules and procedures according to which information is collected and the provisions and calculation of the NQSALMON is conducted
Nasdaq Copenhagen	Nasdaq Copenhagen A/S, the Administrator of the NQSALMON
NOS	NOS Clearing ASA
NSC	Norwegian Seafood Council
NQSALMON	Nasdaq Salmon Index family of benchmarks
SSB	Statistics Norway
Submitter	The physical person reporting Input Data for the relevant Contributor
Reporting week	The week after the week of invoicing of the relevant Input Data , when the Input Data is reported to Nasdaq Copenhagen by Contributors for calculation of the NQSALMON

0 Independent Auditor

0.1 Kontali Analyse

Kontali Analyse (Kontali) was founded in 1992 to provide objective and reliable analysis for the salmon farming sector in Norway. This market insight was gained by establishing data collection systems and developing production and market models. Today Kontali has a strong position in the market and is well known for providing reliable market intelligence regarding both aquaculture species and fish species from commercial fisheries.

Since the early 90s, Kontali has assisted Norwegian traders and exporters (and the salmon farming sector in general) in their work with maintaining and obtaining market access to the US and the EU. An important part of those assignments, which took place in the period from 1991 to 2010, was reviews of cost structure and product portfolios up against potential and actual market regulations. During this period Kontali assisted more than 50 exporters and traders. The assignments gave unique insight in trade and market dynamics for farmed salmon and trout.

Since 2014, Kontali has on behalf of Nasdaq been auditing Contributors of Nasdaq Salmon Index (NQSALMON). In January 2020, Kontali was appointed as the external auditor of Nasdaq Copenhagen, the Administrator of NQSALMON operated under BMR.

0.2 External Auditor Assignment

In accordance with BMR Annex II §18, Kontali has been appointed by Nasdaq Copenhagen A/S in its capacity as the registered BMR Benchmark Administrator of commodity benchmarks to conduct the compliance audit. The external auditor contract describes the assignment as follows¹:

“Kontali Analyse shall annually perform an audit of Nasdaq Copenhagen’s administration of the NQSALMON family of commodity benchmarks. The annual audit shall cover Nasdaq Copenhagen’s adherence to the methodology criteria for the NQSALMON as well as Nasdaq Copenhagen’s adherence with the relevant requirements for the BMR, including Articles 10, 27, 28, and Annex II of the BMR”.

As auditor it is Kontali’s responsibility to express a reasonable assurance regarding NQSALMON’s compliance with the BMR. Our engagement included an assessment of coherence to the benchmark methodology, examination of the quality and integrity of benchmark calculations, the integrity of the reporting process including procedures in relation to the Contributors, arrangements in relation to Assessors, procedures related to complaints regarding the benchmark and possible conflicts of interest.

The audit included those procedures Kontali considered necessary to obtain reasonable, but not absolute, assurance about whether Nasdaq Copenhagen is in compliance with the BMR in all material respects. The evidence supporting the assertion necessary for rendering our opinion was obtained through examination included observation, inspection, representation, inquiry, and examination on a sample basis.

The Administrator, Nasdaq Copenhagen may all request special topics to focus on in the audit. No such request has been received in advance of or during the audit.

0.3 Independence, Limitations, and Use of Report

Through the auditing process, the auditor has remained impartial with focus on completing the processes with integrity, objectivity, and confidentially while utilizing their professional competence regarding the market.

The audit is subject to inherent limitations. The audit was not designed to detect fraud or deliberate misstatements and we cannot guarantee protection against fraudulent collusion or misrepresentation.

¹ translated from Norwegian.

This report is issued to Nasdaq Copenhagen and should not be used in other contexts than with the BMR Annex II.

Kontali Analyse

A handwritten signature in blue ink, reading "Jan Erik Øksenvåg". The signature is written in a cursive style and is positioned above a horizontal line.

Jan Erik Øksenvåg
Senior Analyst

Kristiansund, 08 September 2022

1 Introduction

EU's Benchmark Regulation (BMR) came into force in June 2016 and was applied from the 1st of January 2018. Following the discovery of manipulation of LIBOR and EURIBOR, the BMR was introduced to prevent similar scandals. The objective of the BMR is to improve governance and control over the benchmark process, particularly in relation to conflicts of interest, and improve the quality of Input Data and methodology. The BMR covers each stage of the benchmark process, with requirements pertaining to procedures, benchmark Administrators, Contributors of Input Data, and users of benchmarks². The BMR builds on the IOSCO Principles for Financial Benchmarks, which are global standards published in July 2013³. Obligations for a commodity benchmark are found in BMR Annex II, which in the case of the NQSALMON benchmarks replaces the BMR Title II requirements.

NQSALMON is a family of commodity benchmarks with salmon as the underlying asset. NQSALMON is owned and operated by Nasdaq Oslo ASA and administered by Nasdaq Copenhagen A/S.

1.1 Scope of the audit

The audit conducted in 2021 was the first BMR audit of NQSALMON. The audit had a wide scope covering all operational and compliance aspects of the commodity benchmark listed in Annex II of the EU's Benchmark Regulation (BMR). The rationale of having a wide scope in the first audit was a need for the auditor to get an overview on how the administrator operated the NQSALMON and Nasdaq's internal control mechanisms and how operations were adapted to the requirements in the BMR. The audit report with descriptions and explanations by the administrator for each paragraph in the benchmark regulation and comments and recommendations by the auditor, can be found on Nasdaq web site⁴ (along with other related documents).

As indicated in the previous audit report, the scope is narrowed in the 2022 audit to focus primarily on 3 topics – all related to the quality of NQSALMON:

1. Representativeness of NQSALMON
2. NQSALMON reflection of actual market price
3. Quality checks of data from contributors

² <https://www.ashurst.com/en/news-and-insights/hubs/finance-hub/bmr/#:~:text=Financial%20Regulation%20Benchmark%20Regulation,benchmark%20and%20users%20of%20benchmarks.>

³ <https://www.lw.com/admin/Upload/Documents/EU-Benchmarks-Regulation.pdf>

⁴ <https://www.nasdaq.com/solutions/nasdaq-benchmark-administration>

2 Nasdaq Salmon Index - Organization

2.1 Overview

Nasdaq Copenhagen is a registered BMR Benchmark Administrator under the European Benchmark Regulation since the 4th of July 2019⁵. The Benchmark Administrator is under the supervision of the Danish Financial Supervisory Authority. The registration allows benchmark users to continue referencing NQSALMON which is in scope of BMR.

2.2 NQSALMON

NQSALMON is a family of eleven commodity benchmarks with the Index Product fresh Atlantic salmon of superior quality, head on gutted (HOG), transported from Norway to Europe.

The 11 benchmarks in the NQSALMON are divided into nine weight classes (1-9+ kg) which mirror the product classification used by Norwegian salmon exporters and salmon producers. In addition to the nine weight classes, Nasdaq Copenhagen calculates one benchmark with the grand total across all weight classes and one benchmark with the average prices of the 3-6 kg classes weighted 30% 3-4 kg, 40% 4-5 kg and 30% 5-6 kg. Each benchmark includes the volume weighted average prices per its weight class, defined as the Index Value.

Special products such as label rouge, ASC, and organic salmon does not qualify as index products.

Table 1 NQSALMON Family of Benchmarks

NQSALMON Indices	Index Value
NQSALMON (grand avg.)	Exporters' sales prices (all segments) volume weighted price
NQSALMON (3-6kg avg.)	Exporters' sales prices (3-4 kg 30%, 4-5k g 40%, 5-6 kg 30%)
NQSALMON (1-2 kg avg.)	Exporters' sales prices (1-2 kg) volume weighted price
NQSALMON (2-3 kg avg.)	Exporters' sales prices (2-3 kg) volume weighted price
NQSALMON (3-4 kg avg.)	Exporters' sales prices (3-4 kg) volume weighted price
NQSALMON (4-5 kg avg.)	Exporters' sales prices (4-5 kg) volume weighted price
NQSALMON (5-6 kg avg.)	Exporters' sales prices (5-6 kg) volume weighted price
NQSALMON (6-7 kg avg.)	Exporters' sales prices (6-7 kg) volume weighted price
NQSALMON (7-8 kg avg.)	Exporters' sales prices (7-8 kg) volume weighted price
NQSALMON (8-9 kg avg.)	Exporters' sales prices (8-9 kg) volume weighted price
NQSALMON (9+ kg avg.)	Exporters' sales prices (9+ kg) volume weighted price

The main characteristics of the NQSALMON benchmark family and all the nine benchmarks are:

1. Weekly calculated spot prices
2. Underlying product is fresh Atlantic salmon, HOG of superior quality
3. The market is a selection of European countries to which the underlying product is sold
4. The source is prices and volumes reported from a representative set of Contributors, based on actual invoices.

⁵ <https://www.nasdaq.com/solutions/nasdaq-benchmark-administration>

5. Delivery point is FCA⁶ Oslo
6. The calculation method is invoiced price adjusted for standard freight, tolls, and FX rates
7. Time of agreement. Sales invoiced in the reporting week are agreed during the invoicing week or the week before.

2.3 Benchmark History and Corporate Structure

The production of weekly spot prices for European salmon can be dated back to 1995 when the Fishery and Aquaculture's National Association⁷ and the Norwegian Seafood Companies' National Association⁸ compiled data for their indexes until 2008 when a business NOS Clearing ASA (NOS) took over in 2008.

The current NQSALMON was designed and developed by NOS between 2008 and 2013 when NQSALMON was taken over by Nasdaq Clearing AB as part of their acquisition of NOS the same year. NQSALMON has been fully operating under Nasdaq Clearing AB since week 13 of 2013 and until July 1 of 2021, where the benchmark ownership was transferred to Nasdaq Oslo ASA which is also the operative calculating agent of the benchmark family. There exists an outsourcing arrangement between Nasdaq Oslo ASA and Nasdaq Copenhagen A/S where Nasdaq Copenhagen A/S as benchmark Administrator has outsourced certain elements of the benchmark provision to Nasdaq Oslo ASA, the Assessor processes, the benchmark calculation and dissemination.

2.4 Oversight Committee

Nasdaq has established an oversight function, The BMR Oversight Committee, who's role is to ensure oversight of all aspects of the provision of benchmarks. The BMR oversight Committee is separate from the management body and other governance functions of Nasdaq Copenhagen.

The Oversight Committee is currently composed of five voting members and four non-voting members. The members are formally appointed by the Nasdaq Copenhagen's Board of Directors based on a recommendation from the Head of Investment Intelligence and Head of Benchmark Business. The composition of the BMR Oversight Committee is made public on the Benchmark Administrator's website⁹.

The oversight committee conducts regular reviews (at least annually) of the NQSALMON methodology. Ex-post evaluations of benchmark calculations are regularly reviewed by the Oversight Committee when the calculating agent present its' service report at the Oversight Committee's regularly quarterly meeting covering benchmark calculations and operations. About the Audit

This audit covers the period of autumn 2021 and to the first semester of 2022. The audit process consists of several parts, including contacts with the benchmark administrator and assessors, contributor audits and physical audit of benchmark administrator at NQSALMON benchmark owner premisses.

The physical audit took place at Nasdaq Oslo premisses 16th of August 2022.

As the audit on 2021 was the first audit of NQSALMON under the EU benchmark regulation, the scope of the audit was wide in terms of auditing all compliance aspects on how NQSALMON was operated. The framework for this year's audit is more focused and practical as it focuses on administrator work and procedures related to the index quality and integrity of index calculation.

The scope of the audit (mentioned in section 1.1,) refers to a large degree to paragraph 5, 6 and 7 in annex 2 of EU benchmark regulation:

⁶ Free Carrier. Seller is responsible for the delivery of goods from the seller's depot to a destination specified by the buyer.

⁷ Own translation from Norwegian: Fiskeri-og Havbruksnæringens Landsforening

⁸ Own translation from Norwegian: Norske Sjømatbedrifters Landsforening)

⁹ <https://www.nasdaq.com/solutions/nasdaq-benchmark-administration>

Changes to a methodology

5. *The administrator of a commodity benchmark shall regularly examine its methodologies for the purpose of ensuring that they reliably reflect the physical market under assessment and shall include a process for taking into account the views of relevant users.*

Quality and integrity of benchmark calculations

6. *The administrator of a commodity benchmark shall:*

- (a) specify the criteria that define the physical commodity that is the subject of a particular methodology;*
- (b) give priority to input data in the following order, where consistent with its methodologies:*
 - (i) concluded and reported transactions;*
 - (ii) bids and offers;*
 - (iii) other information.*

If concluded and reported transactions are not given priority, the reasons should be explained, as required in point 7(b).

- (c) employ sufficient measures designed to use input data submitted and considered in a benchmark calculation which are bona fide, meaning that the parties submitting the input data have executed, or are prepared to execute, transactions generating such input data and the concluded transactions were executed at arms-length from each other and particular attention shall be paid to inter-affiliate transactions;*
- (d) establish and employ procedures to identify anomalous or suspicious transaction data and keep records of decisions to exclude transaction data from the administrator's benchmark calculation process;*
- (e) encourage contributors to submit all of their input data that falls within the administrator's criteria for that calculation. Administrators shall seek, so far as they are able and is reasonable, to ensure that input data submitted is representative of the contributors' actual concluded transactions; and*
- (f) employ a system of appropriate measures to ensure that contributors comply with the administrator's applicable quality and integrity standards for input data.*

7. *The administrator of a commodity benchmark shall describe and publish for each calculation, to the extent reasonable without prejudicing due publication of the benchmark:*

- (a) a concise explanation, sufficient to facilitate a benchmark subscriber's or competent authority's ability to understand how the calculation was developed including, at a minimum, the size and liquidity of the physical market being assessed (such as the number and volume of transactions submitted), the range and average volume and range and average of price, and indicative percentages of each type of input data that have been considered in a calculation; terms referring to the pricing methodology shall be included such as transaction-based, spread-based or interpolated or extrapolated; and*
- (b) a concise explanation of the extent to which, and the basis upon which, any judgement including the exclusions of data which otherwise conformed to the requirements of the relevant methodology for that calculation, basing prices on spreads or interpolation, extrapolation, or weighting bids or offers higher than concluded transactions, if any, was used in any calculation.*

Prior to and during the audit the auditor had access to all documents relevant for the audit, including logs and minutes for selected weeks examined for the ad-hoc audit of index calculation. Some documents were provided after the audit upon request by the auditor.

3 Audit scope and index compliance

3.1 Representativeness of NQSALMON

Reference is made to section 1.1 where scope for the audit is described. The first point on the audit was the administrator focus and effort to maintain the representativeness of NQSALMON and measure to possibly improving the representativeness.

3.1.1 Contributors

During the period under audit there were 11 contributors to NQSALMON. Through the daily operation of NQSALMON the administrator has frequent contact with the contributors taking onboard inputs from them. The administrator is also in contact with other Norwegian exporters which qualify for being contributor to NQSALMON. Some of them are positive while others have not taken any position yet on becoming a contributor. The administrator has also conducted research activities with the aim of identifying potential contributors. All in all, the prospect of getting new contributors onboard is considered good in a medium long perspective. The administrator's objective is to have most possible exporters as contributors to NQSALMON.

3.1.2 Consequences of mergers and acquisitions in the salmon market

During the audit timeframe, market prices for salmon have trended on a high level and the profitability in the sector has been high. Typically, periods such as these are a trigger for acquisitions and at the time of writing, several structural changes are taking place in Norway. The administrator was asked to elaborate on their risk assessment of mergers and acquisitions among contributors and possible measures considered related to this topic.

The administrator has registered ongoing mergers and acquisitions in Norway and observed some potential ones. In a situation where mergers and acquisitions involve existing contributors, the number of contributors may be reduced. On the other hand, the spot volume could remain the same or even increase if the mergers and acquisitions involve a market player not contributing to NQSALMON prior to the mergers and acquisitions.

Mergers and acquisitions could involve other risks as well. If the process involves acquiring minority or majority share of a company in Europe acting as a buyer of salmon, it is important to identify the nature of the relation. Corporate and operational structure is on the agenda on this year's contributor audits.

3.1.3 Geographic scope of NQSALMON

The geographic scope of markets covered by NQSALMON is as per today superior salmon of Norwegian origin to markets where salmon can be transported by truck (in practical terms sales to the European market). In the market NQSALMON is used and regarded both as a spot price for Norwegian salmon and as a spot price on the European market. The administrator was asked to comment on thoughts and considerations related NQSALMON geography with the focus on index representativity.

The Benchmark Methodology document (including Key Elements) for the Nasdaq Salmon Index Family contains the following definition: Contributor means Norwegian salmon exporters and salmon producers with export licence fulfilling the requirements as set out in Section 4, reporting Input Data for the calculation of the NQSALMON.

The geographic scope in terms of markets is potentially all market to where salmon is transported by truck. Currently, 26 European markets are included in the geographical scope – including Norway (if destination of the product is outside Norway). Included in the 26 markets are 3 new markets added to the list in 2022.

New markets will be added if there are sufficient spot sales to a market. This is under continuous consideration.

3.1.4 Auditor's Comment

The representativeness of the NQSALMON is considered good, taking into consideration the number of contributors, their share of the spot market for salmon and their composition (distribution by geography and size). However, the representativeness could be further improved by having new contributors onboard. Administrator's initiatives and objective to increase the number of contributors is welcomed and the auditor recommends focusing on this topic.

With reference to section 4.1.3, new markets were added in 2022 and the auditor is confident that new markets will be added, based on inputs from contributors or research by the administrator if spot sales to a new market is sufficiently high.

3.2 NQSALMON – its reflection of actual market price

3.2.1 Fish quality

In the index methodology the index product is clearly defined, and the administrator is operating the benchmark according to the definition. In cases where deviations from standard quality norms¹⁰ are reported or identified, the administrator and its assessors make the judgement on how to handle such instances – whether to include transactions or to exclude them.

3.2.2 Discounts

Extensive use of discounts, especially types of discounts not occurring on the invoices or kick-back discounts, may impact on the calculation of NQSALMON. The administrator is aware of the risk and has conducted some research among contributors in the latest years.

At this year's contributor audits, the use of discounts is a special focus. Hereunder, the type of discounts given in the industry, how common these discounts are, and the rate of discounts given. During the audits conducted in the first semester of 2022, contributors state that discounts are used to a very limited extent and in most cases the discount appears on the invoice and is deducted before submitting data to Nasdaq.

3.2.3 Sustainability certification and brands

The benchmark methodology excludes some sustainable certified salmon from contributor's reporting to NQSALMON due to significant price premiums. As for ASC certified salmon, the production and sales volumes have been increasing over the last years, driven by demand from large scale retailers of which many require salmon to be sustainably certified.

It is expected that at a certain point of time, the price premium for sustainable certified salmon compared to conventional farmed salmon will narrow and likely disappear as sustainable farmed salmon will become a basic requirement in the market. To ensure the benchmark methodology is correct in excluding sustainably certified salmon, the contributor is asked about premiums achieved for ASC certified salmon and other sustainable certified salmon during the contributor audit.

¹⁰ Meaning quality deviations within the quality category «superior» – caused by quality issues as bright colour, long time from harvest to sales, meat texture, etc.

3.2.4 Ordinary quality salmon

There are reports indicating that an increasing number of salmon producers/processors do not use the quality grade “Ordinary” anymore and instead sell all fresh whole salmon allowed for exports as “Superior” quality grade.

So far, systematic research among the contributors on the topic has not been conducted. Selling all salmon as superior salmon likely does not impact on the market price reported by contributors as the salmon is sold for the price of superior quality salmon.

3.2.5 Transportations cost

In March 2022, transportation costs (to be deducted from the price of the index products) were adjusted significantly due to increasing in fuel costs and changes in EU road transport legislation. The level of transport cost impacts on how NQSALMON reflects actual market prices.

Since the adjustment, truck fuel prices continued to rise during the first semester of 2022 but in the first months of the 2nd semester fuel prices have stabilised and trended slightly down. How this has impacted on transportation cost is unknown.

The administrator is considering conducting freight rate assessment more frequently, for example on a quarterly basis. Furthermore, the administrator has the objective to find a more formal methodology for settling freight rates based on objective criteria. The contributors will be consulted in order to find objective criteria to be used in settling new freight rates.

Ideas and proposals will be shared with the oversight committee, index users, and Fish Pool.

3.2.6 Auditor’s Comment

From the auditor’s point of view the administrator has focus on factors which may impact the quality of NQSALMON.

One main challenge in this audit period has been transportation cost. The transportation cost has been adjusted once in the audit period but fluctuations in underlying cost elements have continued.

Developing and implementing a methodology for adjusting transportation cost based on objective criteria, allowing for more frequent adjustments, would be good for index transparency as well as for index quality in periods of volatile road freight market.

3.3 Ad hoc audit on weekly data quality checks (integrity of benchmark calculations)

In the last part of the 2022 audit, the focus is on how the administrator and its assessors conduct weekly quality checks on data reported by contributors. The rationale for having such ad-hoc audits is to see how internal procedures were followed and judgements made by the administrator in calculation of NQSALMON. Topics covered in this section of the audit were:

- Data quality checks – contributor data
- Communication with contributors
- Data deviation procedures
- Exclusion and inclusion of data – administrator/assessor judgement
- Evaluation of decisions made
- Recalculation of NQSALMON

The period covered is 2nd semester of 2021 and 1st semester of 2022.

For each week selected, a stepwise approach was used. The approach included the following:

- Contributor by contributor review and automatic data quality check indicators
- Review of remarks made by the assessor for each contributor
- Focus on written correspondence between assessor and contributor
- Judgement and action taken by assessors related to communication with contributors
- Procedures followed when action taken

The weeks subject to ad-hoc audit were both picked on random and selected (based on known re-calculations). This explains a relatively high number of deviations for the weeks subject for ad-hoc audit below.

3.3.1 Ad hoc audit for selected weeks

Week 32 of 2021

A step by step go-through of the weekly log showed that assessor data quality check indicated potential price and/or volume deviations ¹¹for all contributors except one. With one exception, all contributors were contacted in writing (according to assessor procedure) for clarifying reasons behind the deviations or potentially for discovering errors.

No errors revealed and according to the log, procedures were followed.

Week 45 of 2021

Sales-wise, week 45 is in a season where salmon is in rich supply. The logs show low prices and volume deviations. The auditor finds it positive that contributors were followed up by assessors even though no deviations were identified.

¹¹ Deviations in this context means built-in alarms in the index calculator, which shows deviations of more than +/- 5% of the average price

One contributor submitter was not formally verified in week 45.

Week 46 of 2021

The contributor 2nd line control discovered that a large quantity of salmon subject for reporting was not included in the contributor's report submitted the day before. According to the assessor, this resulted in the most significant index re-calculation so far (up to week 33 2022).

The log and minutes show that the procedures for re-calculation, including informing the involved parties, were followed. Following this event, contact was established with the contributor with the objective to tighten pre-submitting controls.

Week 7 of 2022

A deviation from the submission procedures was found for week 7. From the weekly log, one contributor has used a submitter not listed on the Authorised Submitter list. The unauthorised submitter was identified by confirmation controls conducted by the assessor. The deviation resulted in a dialogue with the contributor and training of the submitter with the objective to achieve authorised submitter status.

Week 12 and 13 of 2022

Week 12 contained re-calculation and re-dissemination of NQSALMON. The error in reporting was due to a contributor using the new version of Maritech's reporting module. For this special case, the new version was not correctly tuned in terms of customer geography, resulting in a significant amount of spot volume not reported.

The contributor notified the administrator about the discovery of the error the day after reporting deadline, i.e., after dissemination of NQSALMON. Based on updated contributor data, the administrator conducted a re-calculation of NQSALMON in order to determine if the error exceeded the threshold for re-dissemination of the index and triggered the procedure for error handling¹². The calculations showed that the error exceeded the threshold limit, and the error handling procedure was executed.

Interaction between administrator, the reporting module provider and the contributor solved the problem avoiding the same error for week 13.

Week 14 of 2022

Week 14 included detection of errors by contributor and assessor. Error detected by contributor was reported to the assessor the same evening as NQSALMON was published.

Automatic data quality control indicated possible suspicious data from another contributor. Addressing of suspicious data to the contributor led to re-reporting of corrected data.

Detection of errors led to re-calculation of NQSALMON. With reference to the error handling procedures, the deviations were found to be insignificant.

Week 17 of 2022

The weekly log and report show a wide variation in price and volume between contributors. According to the log some sales of ISA-infected salmon had some impact on spot prices on small sized salmon. No reporting errors revealed.

¹² NQSALMON-BenchmarkStatement_version1.3_March-16-2022.pdf, page 7- Error Handling

Week 25 of 2022

6 of 11 contributors were contacted by the administrator based on quality controls of data reported by the contributor.

The capping rule was triggered this week as a contributor sales volume exceeded 25% of the total spot volume reported in NQSALMON. The cap factor was calculated and logged.

Week 33 of 2022

In addition to the weeks selected above, the auditor attended the weekly Tuesday reporting procedures managed by the assessors, including the following activities:

- Request explanations from Contributors if suspicious deviations are identified
- Test disseminations, capping checks
- Closing of registration in portal
- Submittance of preliminary log to Supervisor
- Assessor meeting with supervisor
- Dissemination of NQSALMON
- Information to Contributors and Fish Pool

No errors were found in the data.

3.3.2 Auditor comments

The auditor found 2 observations in the weekly logs related to submitter eligibility. These are considered of minor importance as it had no impact on NQSALMON calculation. It should also be underlined that in one of the instances, action was taken by the administrator to give submitter adequate training for becoming an authorized submitter.

The log document itself show that huge effort is being made each week in order to strengthen the integrity of index calculations.

From the auditor's point of view, it is a strength that quality controls by both the assessors and contributors have revealed errors. Especially, errors discovered in contributor's 2nd line controls underlines the contributor's effort and interest of maintaining high integrity of index calculation.

The ad hoc audit also shows the need of being able to interpret inputs from the contributors in the weekly data controls and follow-ups by assessors of contributors and in the work of understanding potential changes in market conditions.

With reference to section above, the auditor underlines the importance for the administrator and assessors of having strong in-depth knowledge about all aspects of the industry, especially related to exports of salmon to the European market. The administrator and the assessors are providing judgement related to the calculation of NQSALMON every week and strong industry knowledge contribute to strengthen the integrity of the calculation of NQSALMON.

Even though the combined knowledge in the team operating NQSALMON is regarded as strong, the auditor encourages the team to further strengthen their knowledge by visiting primary processors and exporters in order to increase practical sector knowledge.

4 Administrator follow-ups from last audit

In the 2021 audit report, the auditor made some comments and suggestions which could be considered by the index administrator to improve the overall aspects of the index.

The administrator stated during the audit that all suggestions have been implemented.

In particular, the previous audit report commented: "Though it is not a specific requirement in article 27, the auditor is of the opinion that it would add value in terms of transparency if the identities of the Contributors were included in the Benchmark Statement". Following the previous audit, the benchmark administrator implemented the suggestion from the auditor. Contributor names are now listed in the Benchmark statement. The auditor welcomes the administrator's effort and focus on being transparent in its operations.

It is also noticed that the section in the Benchmark statement describing "Market or Economic Reality" has been updated, according to recommendation by the auditor. The recommendation was adding the number of benchmarks in the benchmark family, add details on the weighting of the three sub-benchmarks which the 3-6 kg class benchmark is composed of and add information on index coverage index (share of market).

The implementations were made in Benchmark statement on March 16, 2022.

5 Summary of Auditor Comments and Suggestions

The auditor finds the integrity of benchmark calculations to be good with procedures in place for Administrator and its Assessors and thorough documentation of the benchmark calculation process and Administrator/Assessors data quality checks. The integrity of the benchmark calculation is further strengthened by the fact that the data reported to NQSALMON are actual sales transactions extracted from Contributors integrated sales systems.

When having good procedures for data quality checks and benchmark calculation, it is important that the procedures are followed. Reference is made for 2 findings in the weekly log reports related submitters to NQSALMON.

The auditor also welcomes the administrator's objective and work on having more Norwegian salmon exporters contributing to NQSALMON. As per today, the representativeness of NQSALMON is good by increasing the number of contributors will further increase the representativeness.

The auditor impression after being present during the calculation process of the NQSALMON and auditing a selection of weekly logs is that the administrator has strong focus on following up contributors and submitters and conducting data quality checks – in other words following internal procedures in order to calculate NQSALMON correctly. Even though procedures are followed, there is some room for judgement by the administrator in a limited number of cases not covered by the benchmark methodology. Even though the auditor finds the administrator and assessor common knowledge and insight good, strengthening of the knowledge/insight on the supply chain for salmon is recommended for making the best possible judgements. This may also be useful in discussions with contributors and other industry players on possible developments of the benchmark.

The last suggestion is strengthening knowledge about software most contributors use when submitting data to NQSALMON (Maritech trade module). Connecting with the module developer could provide new insight on module strengths and limitations, new module version and it could be useful for a potential development of the module.

A last comment from the auditor is on follow-up on transportation cost. The transport cost was adjusted and published on March 2022 because of rise in fuel cost and new EU legislation on road transportation which led to rise in transportation cost – especially driver cost. In the last audit report the auditor proposed to “consider different methodologies which can be used as basis for adjusting transportation cost when needed”. It has come to the auditor's knowledge that the administrator has an ongoing work of considering different tools/methodologies that can be used as basis for more frequent adjustments of transportation cost, when needed. The auditor is curious on the outcome of this work.