

Discussion Paper: Consideration of Operational Costs in the Crab Arbitration System

April 2017¹

1. Introduction.....	1
2. Crab Markets Pre-rationalization.....	2
3. Quota in the Crab Rationalization Program.....	3
4. The Arbitration System.....	4
4.1 Market Report and the Non-Binding Price Formula.....	5
4.2 Binding Arbitration.....	5
4.3 Arbitration Standards.....	6
4.4 Interpretation of the Standards.....	8
4.5 Previous Consideration of Cost in the Arbitration Standards.....	9
5. Alaska Minimum Wage.....	12
6. Possible Council Action.....	14
7. References.....	15
Attachment 1.....	17

1. Introduction

In June 2016, the North Pacific Fishery Management Council (Council) directed staff to produce a discussion paper on the non-binding price formula that is a part of the Arbitration System in the Bering Sea/ Aleutian Islands (BSAI) crab rationalization program (CR Program). The Council asked that the discussion paper analyze the changing operational costs of crab individual fishing quota (IFQ)/ individual processor quota (IPQ) holders and the impacts of maintaining the historical distribution of first wholesale revenue between crab harvesters and processors, given the possible changes in operational costs.

The analysis was also directed to review the current criteria used by the non-binding price formula arbitrator in order to allow the Council to determine if operational cost changes to the participants in the crab fisheries should be considered in setting the non-binding price formula.

This discussion paper provides background information on the crab market pre-rationalization, the CR Program and Arbitration System, explains the issue around a static price formula based on the historical

¹ Prepared by: Sarah Marrinan, Council staff, with review from Keeley Kent and Glenn Merrill, NMFS SF, and Lauren Smoker NMFS GC, and with input from John Sackton, Joe Sullivan, John Iani, and Mark Fina

distribution of first wholesale price that does not allow for the consideration of operational costs, and the previous Council attention to this issue. The discussion paper also highlights the specific example that has been raised in public testimony of increasing processing labor costs due to a series of increases in the Alaska minimum wage. The discussion paper concludes with a brief discussion of possible action on this issue, if the Council deems action is warranted. Attachment 1 provides additional insight and comments from the non-binding price formula arbitrator.

2. Crab Markets Pre-rationalization

Prior to the CR Program, both the harvesters and the processors had slightly different tools and tactics available for negotiating crab ex-vessel price compared to business under the CR Program.

Prior to CR Program implementation, harvesters in the BSAI crab fisheries coordinated most price negotiations. From the early 1990s to rationalization, the Alaska Marketing Association (the AMA) represented a substantial share of harvesters in price negotiations in the largest BSAI fisheries— the Bristol Bay red king crab, the Bering Sea snow crab, and the Bering Sea Tanner crab fisheries. Informal discussions have indicated that AMA membership ranged from 25% to 95% of crab vessel owners over the years (NPFMC 2010).

Approximately one month prior to each season opening, AMA representatives met with each of the major crab processors informally to discuss the markets for crab products. Based on this information and information gathered through its own market research, the AMA determined an expected price for crab, which it communicated to the processors. The AMA then solicited price offers from each processor, which it submitted to its members for a vote. This process of soliciting prices continued until a price offer acceptable to AMA members was received. Receipt of an acceptable offer from a single processor typically drove pricing of all processors. Pre-CR Program, with unrestricted deliveries, processors had an incentive to match the accepted offer to maintain market share. Prices generally remained constant in the short season fisheries.

To create an incentive for higher offers, in the 2001 Bristol Bay red king crab fishery AMA members informally agreed to reward the processor that offered the accepted price with additional deliveries. This was the first time AMA members had offered such an arrangement. A similar arrangement was offered in the 2002 Bering Sea snow crab fishery. Prior to CR implementation, if an acceptable price was not received prior to the seasoning opening, catcher vessels would not begin fishing.

In the 2000 and 2001 Bering Sea snow crab season harvesters did not begin fishing until several days after the announced opening because an acceptable price offer was not received from a processor. Although not all vessel owners were members of the AMA, in these years all catcher vessels remained at port after season openings until an acceptable price was received by the AMA. Catcher/processors, on the other hand, did not abide by these “stand downs” but began fishing at the opening of the season.²

² Catcher/processors do not receive an ex-vessel price so they were unaffected by the price negotiations and are not currently part of the arbitration process. Fishing by catcher/processors, however, may weaken the negotiating

Prior to the CR Program, the division of first wholesale value was variable year to year. According to the data shown in the first king and snow crab price formula (Sackton 2005), pre-CR Program processors sought to create more stability in their business model by negotiating a higher percentage of the first wholesale value in years where the first wholesale price was expected to decline. When the processors predicted the first wholesale price to increase, compared to the prior year, they were more likely willing to accept a smaller percentage of the first wholesale price. This behavior is based on the perception of risk. In a rising market, processors were more confident that their projected price would actually be met, and as a result, they would be willing to pay a higher percentage.

Prices also varied regionally among processors in the crab fisheries, pre-CR Program. Regional price differences have several sources. In fisheries where vessels make several deliveries, the availability of goods and services in a location were important to harvesters. Food, bait, fuel, and a good port facilities made a processor more attractive to vessels wishing to offload harvests. Processors in locations that offer less goods and services sometimes had to pay price premiums to induce fishers to sell their harvests. Processors that are distant from grounds would also need to pay a premium price to compensate harvester for time away from the grounds while making deliveries.

The Aleutian Islands golden king crab fisheries had many fewer participants than the Bristol Bay red king crab and Bering Sea snow crab fisheries. Seasons in these golden king crab fisheries also last several months, in contrast to seasons shorter than one month in the Bristol Bay red king and Bering Sea snow crab fisheries. As a result, ex-vessel pricing practices differed substantially in the Aleutian Islands golden king crab fisheries.

To an unknown extent, price negotiations and delivery patterns were (and still are) influenced by relationships between harvesters and processors. Some harvesters tendered salmon and herring for processors. Maintaining this contract might have required the harvester to continue to deliver crab to the processor. Similarly, some harvesters received financial support from processors. Whether formalized or not, some of these harvesters had a perceived obligation to deliver crab harvests to the processor with whom they have the financial relationship. The extent of the impact of these relationships and obligations on prices and delivery patterns is not known.

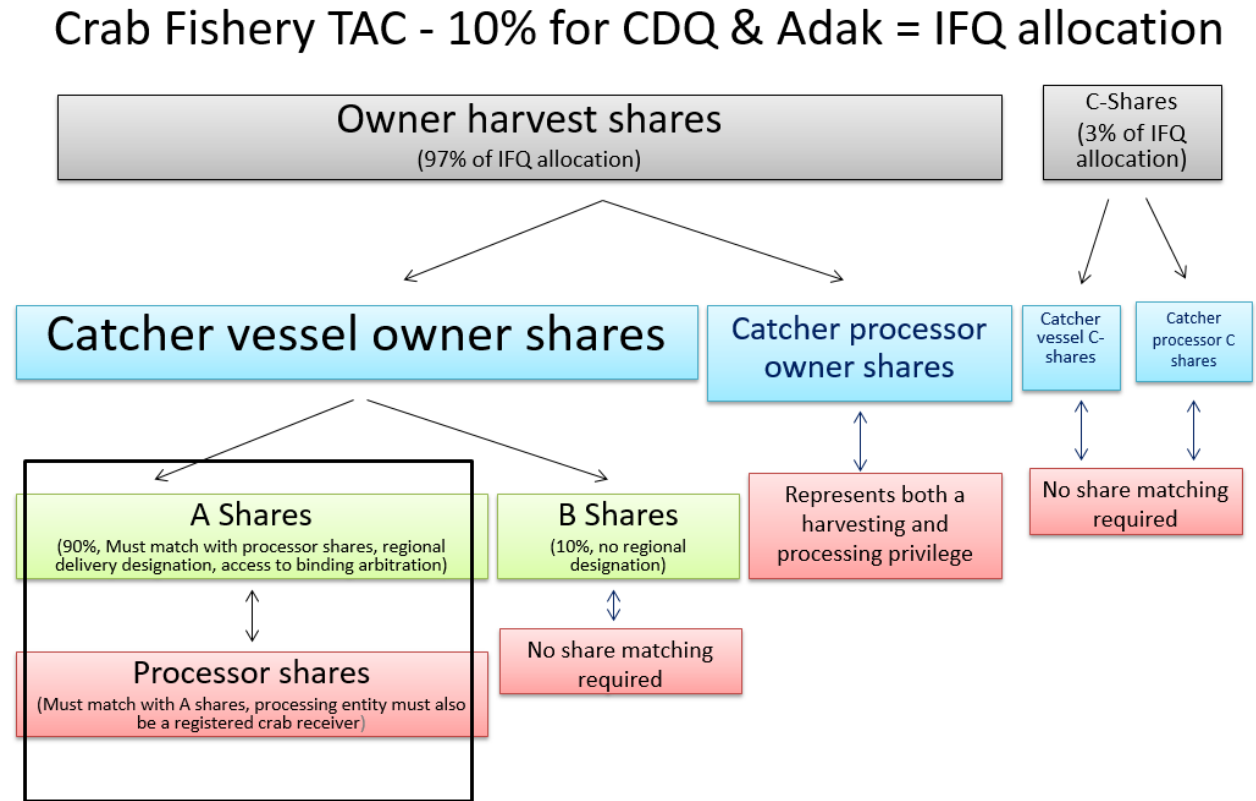
3. Quota in the Crab Rationalization Program

In August of 2005, fishing in the BSAI crab fisheries began under a new quota share-based management program (“CR program” or the “program”). The program is unique in several ways, including the allocation of processor quota shares (PQS) corresponding to a portion of the harvest share pool. Under the program, 90 percent of the annual catcher vessel owner (CVO) shares allocation is issued each year as “Class A” individual fishing quota (IFQ), which must be delivered in a designated region (except for Tanner crab) and may only be delivered to a processor holding unused individual processor quota (IPQ) (see Figure 1). Class A shares are the focus of this discussion paper, as all other harvesting quota issued through the CR program (i.e. Class B, Class C, and Catcher Processor shares) are not required to be

position of catcher vessels since their harvests will reduce the amount of catch remaining after a price agreement is reached.

matched with processor quota, are therefore outside of the Arbitration System and the concerns examined in this discussion paper.

Figure 1 Diagram of quota share allocation in the crab rationalization program



4. The Arbitration System

With the creation of PQS and the expectation of extended seasons through rationalization, there were concerns about a shift in the bargaining power between the harvesters and processors in ex-vessel price negotiations. Harvesters' previously employed tools of using collective inducements in price negotiation, such as delaying the season opening or promising additional deliveries, could be limited under the new system. For example, with a requirement to match Class A share IFQ with IPQ, the concern was that the last unmatched IFQ holder would be forced to match with the last available unmatched IPQ holder. With the competition removed, this IPQ holder could then offer a very low ex-vessel price that the harvester would have to accept if they were going to fish. The Arbitration System was created to address these issues and to achieve the Council's objectives of creating a program that "maintains healthy harvesting and processing sectors" and sought to "... achieve equity between the harvesting and processing sectors, including healthy, stable and competitive markets."

To this end, the Arbitration System was developed for inclusion in the CR Program. Arbitration is the resolution of a dispute by a person selected under law or by the parties to the dispute. However, in the CR Program, the Arbitration System serves several important purposes regardless of whether participants in

the fishery actually initiate binding arbitration in order to resolve a dispute about terms of delivery or ex-vessel price. This system includes: dissemination of market information and a non-binding price formula to facilitate negotiations, the coordination of matching Class A IFQ held by harvesters to IPQ held by processors, and the opportunity to use the binding arbitration process to resolve terms of delivery.

4.1 Market Report and the Non-Binding Price Formula

The Arbitration System begins with dissemination of information. The two sectors (harvesters and processors) jointly select a “market analyst,” who produces a market report, and a “formula arbitrator,” who develops a non-binding price formula specifying an ex-vessel price as a portion of the first wholesale price. The two sectors (i.e. the Arbitration Organizations) also choose a pool of “contract arbitrators,” who preside over any binding arbitration proceedings.

The price formula is an important pre-season report that is intended to inform negotiations and the binding arbitration process by a general application of the arbitration standard (identified and discussed in Section 4.3). The market report is intended to provide baseline information concerning the market and a signal of a reasonable price. Neither the market report, nor the price formula, has any binding effect. Instead, they are intended to provide baseline information concerning the market and a signal of a reasonable price. The market reports and price formula are intended to serve as the starting point for price negotiations.

The price formula is required to be released at least 50 days prior to the season opening. The market analysis originally was on the same schedule, but starting with the 2012 fishing year the due date of the market analysis was changed to 7 days prior to the season opening. In addition, the parties asked for a supplemental snow crab market report during the first week of January each year. When the date of the market report was changed to coincide with the start of the season, the parties also agreed that the report would only rely on publicly accessible data so as to avoid any potential anti-trust issues.

The market analyst and formula arbitrator (who may be the same person) generate the market report and price formula, respectively, based on any relevant information, which may include information received from IFQ holders and IPQ holders. After the first year of the CR Program, a single analytical team (i.e., John Sackton, Seafood News) has prepared all market reports and price formulas.

4.2 Binding Arbitration

An IFQ holder that is not able to resolve all terms of delivery with a processor to whom it has committed deliveries may unilaterally initiate an arbitration proceeding. The process for initiating a binding arbitration proceeding is coordinated with share matching. The window for initiating arbitration is 10 days long, beginning 5 days after the allocation of IFQ and IPQ; the period during which harvesters may unilaterally commit IFQ to a processor. Once an arbitration proceeding is initiated with an IPQ holder, any holder of IFQ that has committed shares to that IPQ holder may join the arbitration proceeding, as long as they are a member of the same Fishery Collective Marketing Act (FCMA) cooperative. Processors may not initiate arbitration. Once a proceeding is initiated, harvesters that are party to the proceeding select an arbitrator to preside over the specific proceeding from the pool of arbitrators jointly selected earlier. This ability to join is critical because the system limits each processor to a single arbitration

proceeding per fishery. A last opportunity to make use of arbitration is available for harvesters that choose not to join a proceeding.

Binding arbitration proceedings are conducted on a “last best offer” basis. Under this system, each party to the proceeding submits a “last best offer”. The role of the contract arbitrator is to select one offer from the two competing offers. In binding arbitration involving two or more harvesters, each harvester may either submit an independent offer or join a collective offer (as part of a FCMA cooperative). The processor submits a single offer. For each harvester offer, the arbitrator’s role is to select either that harvester’s offer or the processor’s offer (which applies to all harvesters in that proceeding). After arbitration is completed, any holder of uncommitted IFQ can bind the IPQ holder to the terms of the proceeding by committing deliveries to the IPQ holder.

Since the full effects of the program on the timing of fishing and marketing activities were not predictable, the Arbitration System now allows participants to modify the arbitration timeline. This “lengthy season” approach allows IFQ and IPQ holders that have committed deliveries to negotiate a modified schedule for arbitration. After the window for initiating arbitration has closed, if a holder of Class A IFQ has not either initiated a proceeding or adopted the ‘lengthy season approach,’ the ability to access the arbitration system is effectively forfeited. If the parties are unable to agree on the lengthy season approach, they may arbitrate whether to adopt that approach and the timing of the proceeding. Agreements to use the lengthy season approach to arbitration must be entered into prior to the opening of a program fishery.

All participants who have used the binding arbitration process have relied on the lengthy season approach, whereby arbitration proceedings are delayed until a time during the crab fishing year. Use of this approach has relieved the time pressure under the standard arbitration timeline and has allowed participants to negotiate with more complete market information (i.e. a more reasonable understanding of the first wholesale price). Lengthy season approach discourages a situation where harvesters refuse to fish until terms and delivery price is negotiated because details can still be contested.

4.3 Arbitration Standards

To ensure predictability and fairness, the Arbitration System sets forth standards to be followed by price formula arbitrators and contract arbitrators. They are both intended to “establish a price that preserves the historical division of revenues in the fishery” while considering several factors. The specific standards applicable to the formula arbitrator(s) are described both in the BSAI Crab Fishery Management Plan and also in Federal regulations at 80 CFR 680.20(g)(2):

(2) The contract with the Formula Arbitrator must specify that:

(i) The Formula Arbitrator will conduct a single annual fleet-wide analysis of the markets for crab to establish a Non-Binding Price Formula under which a fraction of the weighted average first wholesale prices for crab products from the fishery may be used to set an ex-vessel price; and

(ii) The Non-Binding Price Formula shall:

- (A) Be based on the historical distribution of first wholesale revenues between fishermen and processors in the aggregate based on arm's length first wholesale prices and ex-vessel prices, taking into consideration the size of the harvest in each year; and
- (B) Establish a price that preserves the historical division of revenues in the fishery while considering the following:
 - (1) Current ex-vessel prices, including ex-vessel prices received for crab harvested under Class A, Class B, and CVC IFQ permits;
 - (2) Consumer and wholesale product prices for the processing sector and the participants in arbitrations (recognizing the impact of sales to affiliates on wholesale pricing);
 - (3) Innovations and developments of the harvesting and processing sectors and the participants in arbitrations (including new product forms);
 - (4) Efficiency and productivity of the harvesting and processing sectors (recognizing the limitations on efficiency and productivity arising out of the management program structure);
 - (5) Quality (including quality standards of markets served by the fishery and recognizing the influence of harvest strategies on the quality of landings);
 - (6) The interest of maintaining financially healthy and stable harvesting and processing sectors;
 - (7) Safety and expenditures for ensuring adequate safety;
 - (8) Timing and location of deliveries; and
 - (9) The cost of harvesting and processing less than the full IFQ or IPQ allocation (underages) to avoid penalties for overharvesting IFQ and a mechanism for reasonably accounting for deadloss.
- (C) Include identification of various relevant factors such as product form, delivery time, and delivery location.**
- (D) Consider the "highest arbitrated price" for the fishery from the previous crab fishing season, where the "highest arbitrated price" means the highest arbitrated price for arbitrations of IPQ and Arbitration IFQ which represent a minimum of at least 7 percent of the IPQ resulting from the PQS in that fishery. For purposes of this process, the Formula Arbitrator may aggregate up to three arbitration findings to collectively equal a minimum of 7 percent of the IPQ. When arbitration findings are aggregated with 2 or more entities, the lesser of the arbitrated prices of the arbitrated entities included to attain the 7 percent minimum be considered for the highest arbitrated price.**

Additionally, the contract arbitrators are directed to choose a price based on similar set of standards defined in regulations at 80 CFR 680.20(h)(4) (with substantive differences from the formula standards in bold).

(4) Basis for the Arbitration Decision.

The contract with the Contract Arbitrator shall specify that the Contract Arbitrator will be subject to the following provisions when deciding which last best offer to select.

(i) The Contract Arbitrator's decision shall:

- (A) Be based on the historical distribution of first wholesale revenues between fishermen and processors in the aggregate based on arm's length first wholesale prices and ex-vessel prices, taking into consideration the size of the harvest in each year; and
- (B) Establish a price that preserves the historical division of revenues in the fishery while considering the following:

- (1) Current ex-vessel prices, including ex-vessel prices received for crab harvested under Class A IFQ, Class B IFQ, and CVC IFQ permits;
- (2) Consumer and wholesale product prices for the processing sector and the participants in the arbitration (recognizing the impact of sales to affiliates on wholesale pricing);
- (3) Innovations and developments of the harvesting and processing sectors and the participants in the arbitration (including new product forms);
- (4) Efficiency and productivity of the harvesting and processing sectors (recognizing the limitations on efficiency and productivity arising out of the management program structure);
- (5) Quality (including quality standards of markets served by the fishery and recognizing the influence of harvest strategies on the quality of landings);
- (6) The interest of maintaining financially healthy and stable harvesting and processing sectors;
- (7) Safety and expenditures for ensuring adequate safety;
- (8) Timing and location of deliveries; and
- (9) The cost of harvesting and processing less than the full IFQ or IPQ allocation (underages) to avoid penalties for overharvesting IFQ and a mechanism for reasonably accounting for deadloss.

(C) Consider the Non-Binding Price Formula established in the fishery by the Formula Arbitrator.

4.4 Interpretation of the Standards

The arbitration standard applies to the development of the price formula through four general components. First, the formula arbitrator is required to establish a price that preserves the historic division of first wholesale revenues between harvesters and processors. The price formulas in the different fisheries generally attempt to derive the average historic division of first wholesale revenues from price information from 1990 until the season preceding the implementation of the CR Program (2004 in all fisheries except the Bering Sea snow crab fishery which had a 2005 season under the LLP management). Second, in developing this price, the arbitrator must consider several factors, including current ex-vessel, consumer, and wholesale prices, innovations and developments, efficiency and productivity, quality, and financial health and stability. Third, the arbitrator must identify factors relevant to price determination, including delivery timing and location; however, the arbitrator is not required to consider these factors in setting the price. Fourth, the arbitrator is required to consider the “highest arbitrated price” from the previous season.

Given the array of directions that an arbitrator is given in establishing a price formula, it is not surprising that some confusion arose in the early interpretation and application of the standard. However, a review of the record of the standard’s development indicates that establishing a price that preserves the historical division of revenues was a primary consideration.

Moreover, while both formula and contract arbitrators are instructed to consider any relevant information presented by the parties, associated cost of business are not explicitly included in the list of considerations that qualify. Instead the price formula has focused on the historic distribution of the first wholesale price, regardless of the changes in operational costs between sectors. This was a widely-discussed point in the development of the standards, particularly by the Council’s Crab Binding Arbitration Committee, as well as the authors of the first non-binding price formula reports (Sackton 2005; Northern Economics 2005).

4.5 Previous Consideration of Cost in the Arbitration Standards

This section summarizes previous discussion around the relationship between harvesting and processing operational costs, relative to the proportion of first wholesale price received by each crab sector. We begin by defining several important terms necessary to this discussion.

Fixed costs: Fixed costs are those that are incurred by a business whether it ever processes a pound of crab or not. For harvesters, fixed costs include, for example, vessel financing, dockage, gear and equipment costs, some insurance, and costs of any purchased quota. For processors, fixed costs include plant amortization costs, plant operating costs, machinery and equipment costs, and sales, marketing and administrative costs.

Variable costs: Variable costs are those costs which are incurred and are directly attributable, to each pound of crab harvested or processed. For harvesters, examples of variable costs include such things as fuel, bait and vessel insurance on the grounds, trip insurance, and provisions. For processors, variable costs include direct labor costs, indirect labor costs like payroll taxes and insurance, workers compensation, air fares for processing crews working on crab, packaging, and technician services, and all taxes and fees.

Profit: The term profit (also referred to as economic rents or net revenues) is used here to describe the value of harvesting or processing production less costs of production.

Gross revenues: This term refers to the value of harvesting or processing crab without any costs deducted (i.e., the first wholesale or ex-vessel price multiplied by the quantity of product).

Both the 2005 non-binding price formula for king crab and snow crab (Sackton 2005) and the 2005 non-binding price formula for golden king crab (Northern Economics 2005) describe why it may be appropriate to include certain variable costs in the price formula. Northern Economics et al. uses the following three examples to explain the difference between profit sharing and gross revenue sharing.

In the first example, the ratio of costs between sectors (i.e., 62.5% to harvesters versus 37.5% to processors) matches the ratio of the first wholesale price between sectors (i.e., 62.5% to harvesters versus 37.5% to processors). In this scenario, each sector's share of the profits is the same ratio as each sector's share of the first wholesale price. However, if the share of the first wholesale is locked into a specific percentage (say 62.5% to harvesters versus 37.5% to processors) and the ratio of cost do not match these proportions, one sector will experience greater profitability. This can be seen in example # 2 and 3. In example 2, processors and harvesters have equal costs, but processors receive a smaller proportion of the first wholesale price (37.5%). This means the processor's share of the profit is smaller than their share of the first wholesale value. Conversely, in example 3, the proportion of harvester costs to processor costs is greater than the proportion of the harvester's share of first wholesale revenue (75% compared to 62.5%), therefore harvester's share of the profit is smaller than their share of the first wholesale value. These examples demonstrate that the relationship between gross revenue share and profit share depends on relative costs of fishing and processing.

Table 1 Three hypothetical examples comparing (gross) revenue sharing and profit sharing

		Example #1	Example #2	Example #3
		Revenue Shares = Cost Shares	Fisherman's Revenue Share < Fisherman's Cost Share	Fisherman's Revenue Share > Fisherman's Cost Share
Revenues	Fisherman's Ex-Vessel Price	\$2.50	\$2.50	\$2.50
	Processor's Margin	\$1.50	\$1.50	\$1.50
	Wholesale Price	\$4.00	\$4.00	\$4.00
Costs	Fishing Cost	\$1.25	\$1.00	\$1.50
	Processing Cost	\$0.75	\$1.00	\$0.50
	Total Cost	\$2.00	\$2.00	\$2.00
Profits	Fisherman's Profit	\$1.25	\$1.50	\$1.00
	Processor's Profit	\$0.75	\$0.50	\$1.00
	Total Profit	\$2.00	\$2.00	\$2.00
Share of Revenue	Fisherman's Ex-Vessel Price	62.5%	62.5%	62.5%
	Processors' Margin	37.5%	37.5%	37.5%
	Wholesale Price	100.0%	100.0%	100.0%
Share of Costs	Fishing Cost	62.5%	50.0%	75.0%
	Processing Cost	37.5%	50.0%	25.0%
	Total Cost	100.0%	100.0%	100.0%
Share of Profits	Fisherman's Profit	62.5%	75.0%	50.0%
	Processor's Profit	37.5%	25.0%	50.0%
	Total Profit	100.0%	100.0%	100.0%

Note: All revenues, costs and profits are expressed in \$/round lb.

Source: Table 10 from Northern Economics et al. (2005)

The importance of considering profit sharing and thereby the distribution of cost between sector in the arbitration standards is further described in the 2005 non-binding price formula reports (Northern Economics 2005; Sackton 2005). The authors highlight the some of the types of changes expected from crab rationalization, including innovations and developments within the harvesting and processing sectors, changes in efficiency or productivity, changes in quality, changes in safety expenditures, changes in the timing and location of fisheries, and the effect of harvesting and processing less than full quota shares to avoid overages. Both due to rationalization and other external factors (such as a change in processing labor cost, as discussed later in this document) these types of transitions in the crab fisheries can lead to a change in the relative costs of fishing and processing in a significant and long-term way. Basing a price formula strictly on the historical distribution, while the relative costs between sectors have changed, can impact the profit share for each sector. This can lead to very narrow profit margins and in some cases, it may lead to situation where it is no longer profitable for one sector to operate.

The 2005 non-binding price formula for king crab and snow crab explains that rather than considering all cost, variable cost would be most important to include in a non-binding price formula. There are a number of reasons for this. Fixed cost, by definition, do not depend on the amount of crab harvested/ processed. While these costs still need to be covered by operating revenue, there is no method to include them in the calculation of an equitable crab price, because the largest fixed costs are amortized over a number of years. Furthermore,

both harvesters and processors amortize their fixed costs over all their operating income, when only a portion may come from the CR crab fisheries. Many companies do not break out the portion of fixed costs attributable to crab, and if they did so, there would be no objective way of verifying these calculations. Therefore, although fixed costs may be important to profitability, they are not important as a component of the crab non-binding price formula (Sackton 2005).

Variable costs may be important to include in the formula to the extent that there were significant changes due to requirements for the CR Program or have been significant changes in sector-wide variable costs due to other external forces. This consideration could mean the burden of significant change in variable costs is shared between sectors, rather than being wholly absorbed by one sector.

The decision of whether to consider and account for the distribution of cost between sectors was (and is) a policy decision. The case for this consideration may point to the Council's original objectives for a CR Program to "achieve equity between the harvesting and processing sectors, including healthy, stable and competitive markets" as well as more generally to, "maintain healthy harvesting and processing sectors".

However, there are a number of reasons why, to date, fluctuating operational costs have not been considered in the non-binding price formula. The Council's Crab Binding Arbitration Committee, which was established in April 2002 with the task of helping the Council develop the Arbitration System, rejected the idea of having a standard that sought an "equitable division of rents" (i.e. profit). It instead recommended a standard that focused on splitting the first wholesale price based on its historic distribution, and provided a list of other factors the arbitrators may consider. The Committee minutes highlighted that, "an equitable division of rent was thought to have the potential to deter innovation by ensuring rents for inefficient participants" (June 20, 2002).

The 2006 non-binding price formula report for king and snow crab explains some of the problems with addressing individual cost factors (Sackton 2006):

- 1) The basic mandate from the Council is to construct a Non-Binding Price Formula based on the historic division of revenues between sectors. During the discussions that led to the rationalization regulations, the approach of dividing economic rents from the fishery was rejected in favor of dividing revenues. This was done first, because not to do so would build up inefficiencies by preserving high cost operations among both harvesters and processors that might otherwise become more efficient. Secondly, the practical issue of measuring and fairly allocating costs seemed impossible given the desire to avoid requiring each business to open its books.
- 2) The allocation of revenues between harvesters and processors is based on sectors, not on individual companies. Therefore, it is expected that within each sector there will be companies with varying costs structures that will impact their behavior. The strengths and weaknesses of individual companies are not considered grounds for modifying the non-binding price formula.
- 3) The Council clearly stated that each sector, harvesting and processing, was to derive the benefit itself from the efficiencies to be gained through rationalization, and that there was not a requirement that the financial benefits to one sector be shared with another sector.

In other words, not allowing costs to be included in the non-binding price formula creates a strong incentive for participants to be as efficient as possible by minimizing their own operational costs. There is a danger that allowing for the inclusion of variable costs could discourage efficiency in a sector. Even further, it could create an incentive for participants to artificially inflate their cost of business in order to secure a higher percentage of first wholesale price.

The practical challenges associated with identifying and calculating the variable costs appropriate for inclusion in the price formula, as well as the risk of creating perverse incentives for inefficiency, have previously stalled the Council in taking any further action to create explicit flexibility in the formula or contract arbitration standards for the consideration of certain costs.

5. Alaska Minimum Wage

Processing sector representatives have testified a number of times about the impacts of growing costs associated with a recent series of increases in the Alaska minimum wage (John Iani, personal communications, 4/4/2016). Processor representatives have contended that this increased cost of business is unlike other business expenses, in that it is significant and long-term, imposed by Alaska Statute uniformly across the sector as a whole, and unavoidable. Currently, the resulting additional costs are being wholly absorbed by the processing sector.

Alaska Statute 23.10.150 establishes minimum wages and overtime pay standards for employment subject to its provisions. These standards are generally applicable to all hourly employees, however there are exemptions.³ Table 2 demonstrates these rates over time.

Table 2 Alaska minimum wage standards over time

Effective Date	Minimum Wage
04/01/1991 - 09/30/1996	\$4.75
10/01/1996 - 08/31/1997	\$5.25
9/1/1997	\$5.65
1/1/2003	\$7.15
7/24/2009	\$7.25
1/1/2010	\$7.75
Beginning 02/24/2015	\$8.75
Effective 01/01/2015	
1/1/2016	\$9.75
1/1/2017	\$9.80

Source: Alaska Division of Labor Standards and Safety, <http://labor.alaska.gov/lss/whact.htm>

In particular, a ballot measure was approved by Alaska residents on the November 4, 2014 ballot to increase state minimum wages. This measure increased Alaska's minimum wage from \$7.75 per hour to \$8.75 beginning February 24, 2015, and increased it another dollar beginning January 1, 2016. From this

³ Exemptions are listed at: <http://labor.alaska.gov/lss/whact.htm>

point on, the minimum wage is slated to be adjusted based on inflation, or to remain \$1.00 higher than the federal minimum wage, whichever amount is greater.

The Economic Status Report BSAI Crab Fisheries (2016) can highlight changing labor costs using Crab Economic Data Reports (EDRs) submitted by the processors. Table 3 demonstrates processing labor hours and payment for calendar years from 2011 to 2015 using Crab EDR. The last column shows the median plant-level hourly wage rose from \$9.58 in 2014 to \$10.67 in 2015 for processors in the BBR fishery, with similar but more moderate changes indicated for other fisheries. Note that this information does not isolate the impact of the change in minimum wage, as there could be external factor influencing plant-level median wages as well.⁴ In order to fully capture the impact of the minimum wage change on each pound of crab processed, there may need to be an additional data collection.

Table 3 Economic Data Report (EDR) data on processing labor hours and payment, 2011 through 2015

Year	Crew positions ^a			Crew share		Captain share		Processing labor hours			Processing labor payment			
	Obs	Total	Vessel Mean	Total \$million	Vessel median	Total \$million	Vessel median \$1,000	Obs	Total 1,000 hrs	Plant median 1000 hrs	Total \$million	Plant median, \$1,000	Median \$/hour	
All	2011	77	1,014	-	\$36.95	-	\$17.14	-	16	724.96	-	\$8.94	\$10.67	-
	2012	83	1,081	-	\$40.24	-	\$18.45	-	13	1,261.90	-	\$14.89	\$10.63	-
	2013	81	1,099	-	\$34.10	-	\$15.68	-	12	955.77	-	\$10.19	\$10.32	-
	2014	76	1,216	-	\$32.14	-	\$14.69	-	9	842.63	-	\$9.08	\$9.97	-
	2015	82	1,332	-	\$37.91	-	\$16.65	-	9	1,104.82	-	\$12.69	\$10.59	-
AIG	2011	5	36	7.20	\$4.10	\$694.17	\$2.23	\$369.26	6	48.97	4.79	\$1.17	\$79.23	\$10.54
	2012	6	46	7.67	\$3.57	\$650.94	\$1.84	\$326.11	7	53.16	2.60	\$1.14	\$61.03	\$10.49
	2013	6	44	7.33	\$3.41	\$549.26	\$1.55	\$280.33	6	61.09	5.96	\$0.62	\$63.05	\$10.21
	2014	5	*	*	*	*	*	*	4	*	*	*	*	*
	2015	5	*	*	*	*	*	*	3	*	*	*	*	*
BBR	2011	62	413	6.66	\$11.01	\$159.80	\$5.11	\$86.92	12	104.38	6.71	\$1.28	\$77.44	\$10.72
	2012	64	428	6.68	\$8.21	\$104.41	\$3.70	\$55.57	10	100.36	6.51	\$1.21	\$69.45	\$11.11
	2013	63	418	6.63	\$7.68	\$96.08	\$3.65	\$54.10	8	103.96	10.00	\$1.21	\$95.94	\$10.26
	2014	63	422	6.70	\$7.81	\$107.48	\$3.78	\$53.42	7	129.98	21.07	\$1.42	\$77.00	\$9.58
	2015	64	441	6.89	\$9.50	\$136.94	\$4.41	\$63.15	8	127.01	14.80	\$1.59	\$119.22	\$10.67
BSS	2011	68	453	6.66	\$20.54	\$289.73	\$9.19	\$134.45	12	554.86	45.69	\$6.34	\$367.30	\$10.88
	2012	72	502	6.97	\$27.58	\$382.45	\$12.51	\$179.57	11	1,087.26	77.94	\$12.29	\$627.20	\$10.66
	2013	71	481	6.77	\$22.56	\$290.26	\$10.27	\$144.83	10	774.12	63.55	\$8.19	\$493.61	\$10.28
	2014	70	480	6.86	\$17.92	\$239.54	\$8.04	\$111.02	8	590.39	76.01	\$6.42	\$463.97	\$10.75
	2015	70	491	7.01	\$18.42	\$240.84	\$7.72	\$112.63	8	747.40	95.42	\$8.63	\$802.84	\$10.82
BST	2013	22	156	7.09	\$0.45	\$14.86	\$0.21	\$7.64	6	16.58	1.86	\$0.17	\$15.96	\$9.86
	2014	41	279	6.80	\$3.12	\$70.07	\$1.45	\$31.40	7	122.27	8.51	\$1.24	\$80.37	\$9.74
	2015	55	365	6.63	\$5.92	\$113.21	\$2.86	\$46.24	7	230.41	21.84	\$2.47	\$207.99	\$10.47
SMB	2011	17	112	6.56	\$1.31	\$61.08	\$0.61	\$33.09	6	16.75	0.84	\$0.15	\$8.28	\$9.71
	2012	17	106	6.24	\$0.87	\$45.07	\$0.40	\$22.97	6	21.12	0.76	\$0.25	\$7.49	\$10.02
	2014	4	*	*	*	*	*	*	1	*	*	*	*	*
	2015	3	*	*	*	*	*	*	1	*	*	*	*	*

⁴ Also note that these tables also include wage data from workers on Catcher Processors (CP), which may be different than wages paid to processing workers on shore-based or floating processors. To the extent that CPs are not also delivering shore-side, they are not relevant in this discussion of the change in Alaska minimum wage. CPs would be using CPO/ CPC harvesting shares, which are not included in the Arbitration System.

Source: Economic Status Report BSAI Crab Fisheries, Table 2, see additional notes at: <https://www.npfmc.org/wp-content/PDFdocuments/resources/SAFE/CrabSAFE/2016CrabEconomicSAFEappendix.pdf>

This discussion paper was tasked with helping the Council determine if some changes in operational cost to the participants in the crab fisheries should be considered in setting the non-binding price formula. One clear challenge associated with the inclusion of any cost is the difficulty in setting the scope of what should be considered and what should not. The primary issue that has been discussed is the impact of the recent change in the Alaska minimum wage. But if the minimum wage change is to be considered in the price formula, there should be a record as to why this cost of business is different from other operational costs.

Again, this attention to the impact of the increasing minimum wage is likely focused around the program goals of “[achieving] equity between the harvesting and processing sectors, including healthy, stable and competitive markets” as well as more generally to, “[maintain] healthy harvesting and processing sectors”. However, these goals could be used to support a whole host of other operational costs. If the increasing costs associated with processing labor are eligible for inclusion in the price formula, what about if there was a new state-mandated tax on fuel, or a change in the harvesting sector’s safety standards that require vessel owners to invest in additional gear? If the characteristics that matter about the impact of Alaska minimum wage is that this change is “significant, long-term, state-mandated, and/or unavoidable”, these terms may need to be defined so that the arbitrators can make a decision about whether changing operational costs discussed in the future would qualify under the same rationale.

Moreover, if some operational costs are able to be considered in the price formula and/or by the contract arbitrators, the distinction between individual-specific cost versus cost that manifest on a whole sector in the same way may be important to identify. Examples of costs of business that may affect a whole sector in the same way include things like the costs of mandatory permits, licenses, and taxes (e.g., the Alaska State Business tax (raw fish tax) on each pound of landed crab). This is in contrast to costs that an individual processors or harvester may experience because of their specific operational structure. For example, an individual-specific cost of business may include the investment a vessel operator makes to increase the efficiency and safety on their vessel. The distinction between the two may be obvious in some cases and may require data-driven evidence in others. As stated previously by the formula arbitrator (Sackton 2006), the strengths and weaknesses of individual companies may not be considered grounds for modifying the non-binding price formula, which is intended to be guidance for the sector as a whole.

6. Possible Council Action

At this point it is unclear whether allowing for the consideration of certain operational costs in the distribution of the first wholesale price would require a formal process of an FMP and Federal regulatory amendment or a clarification of the existing standards.

Representatives from the harvesting sector, processing sector, and the formula arbitrator have brought this issue to the Council because past interpretations of the arbitration standards have excluded any consideration of operational costs. The precedent for interpretation of the standards has continued to place the majority of the weight on preserving the historical distribution of the first wholesale price. The question posed to the Council is: is this proper interpretation of the standards? If so, does the issue of

minimum wage impact warrant consideration as a formal change to the standards through an FMP and Federal regulatory amendment?

Section 4.4 and 4.5 describe the precedent for interpretation of the arbitration standards. However, among these standards are two that may be enough to justify this adjustment to the price formula with a strong enough supporting case for the sector seeking action. Specifically, the formula and contract arbitrators are tasked with establishing a price that preserves the historical division of revenues in the fishery while considering the following:

#4 “Efficiency and productivity of the harvesting and processing sectors (recognizing the limitations on efficiency and productivity arising out of the management program structure)”

#6 “The interest of maintaining financially healthy and stable harvesting and processing sectors”

If the Council perceives the impact of minimum wage to be an example of something that can or should be considered by the formula and/or contract arbitrators under these current standards, it could make this interpretation clear.

If the Council perceives that adjustments to the price formula due to the increase in minimum wage may be warranted, and that the current standards either do not provide for this opportunity or it is not explicitly clear that they provide for this opportunity, the Council might proceed by initiating a regulatory/ FMP amendment.

Finally, if the Council perceives that the challenges of defining a rationale and establishing a scope of what types of costs should or should not be considered is impractical (whether that task be put on the Council or the arbitrators) it may choose to take no action. If this is the case, the status quo interpretation of the standards would prevail and operational cost would not be considered in the price formula or by the contract arbitrators.

7. References

National Marine Fishery Service (NMFS). 2008. Final Environmental Assessment for Amendment 24 to the Fishery Management Plan for Bering Sea/Aleutian Islands King and Tanner Crabs to Revise Overfishing Definitions. National Marine Fisheries Service, Alaska Region. May 2008. Juneau, Alaska.

North Pacific Fishery Management Council (NPFMC). 2010. Five-year review of the crab rationalization management program for Bering Sea/ Aleutian Islands crab fisheries. December 2010.

Anchorage, AK. Available at: https://www.npfmc.org/wp-content/PDFdocuments/catch_shares/Crab/5YearRev1210.pdf

NPFMC. 2017. Ten-year review for the crab rationalization management program in the Bering Sea/Aleutian Islands. January 2017. Anchorage, AK. Available at: http://www.npfmc.org/wp-content/PDFdocuments/catch_shares/Crab/Crab10yrReview_Final2017.pdf

North Pacific Fishery Management Council/National Marine Fisheries Service (NPFMC/NMFS). 2004. Regulatory Impact Review/Initial Regulatory Flexibility Analysis, Voluntary Three-Pie Cooperative Program for the Bering Sea and Aleutian Islands Crab Fisheries. August 2004. Anchorage, AK.

Northern Economics, Inc. 2005. Aleutian Islands brown king crab market report & non-binding price formula. Prepared for North Pacific Arbitration Organization, Alaska Crab Processors Arbitration Organization, and NOAA Fisheries. August 1, 2005. Anchorage, AK.

Sackton, J. 2005. Non-binding price formula for king crab and snow crab. Prepared for Bering Sea Arbitration Organization, Alaska Crab Processors Arbitration Organization. September 30, 2005. Lexington, MA.

Sackton, J. 2006. Non-binding price formula for king crab and snow crab. Prepared for Bering Sea Arbitration Organization, Alaska Crab Processors Arbitration Organization. August 25, 2006. Lexington, MA.

Attachment 1

COMMENTS ABOUT CONSIDERATION OF ALASKA MINIMUM WAGE IMPACT IN THE PRICE FORMULA FROM JOHN SACKTON, NON-BINDING PRICE FORMULA ARBITRATOR AND THE MARKET ANALYST FOR BERING SEA CRAB FISHERIES

March 4, 2017

COUNCIL MOTION:

The Council will begin a discussion paper that will analyze the changing operational costs of crab IFQ holders and crab IPQ holders and the impacts of such cost changes on the historical distribution of first wholesale revenue that has been divided between crab harvesters and processors.

The analysis should review the current criteria used by the non-binding price formula arbitrator to allow the Council to determine if operational cost changes to the participants in the crab fisheries should be considered in setting the non-binding price formula.

Recommendation on Alaska Minimum Wage

It is the opinion of the non-binding price formula arbitrator that the legislatively mandated increase in the minimum wage represents a sector-wide cost that falls only on the processing sector, and that as a result, the arbitrator should be able to take such a cost into account in the non-binding price formula.

The two sections of the regulations which apply are

(4) Efficiency and Productivity of the harvesting and processing sectors (recognizing the limitations on efficiency and productivity arising out of the management program structure)

and

(6) The interest of maintaining financially healthy and stable harvesting and processing sectors.

Item (4) appears to say that regulatory measures that impact efficiency and productivity in each sector can be taken into account by the non-binding price formula arbitrator. It is my belief that the legislated mandate of the minimum wage falls under such regulatory actions; while other changes in costs such as fuel or insurance do not, as these costs may change but they are not changed by a regulatory action.

Also, Item (6) supports the reasonableness of taking into account the financial health and stability of the processing and harvesting sector.

Processors are generally working on much smaller gross margins than harvesters, based on how much of the raw product is recoverable. Here is an example:

Assume an ex-vessel price of king crab was \$4.00 per lb, based on the harvesters estimate of a wholesale market price of \$8.00 per lb at the start of the season (50% of the wholesale price in this example).

For 1000 lbs of live crab, a packer would pay \$4,000 to the harvester. Using an average yield for 64% for red king crab, for 1000 lbs of raw material, the finished material available to the packer would be 625 lbs. After processing he would have 625 lbs of sections to sell at \$8.00 per lb.

The processor gross revenue would be \$5000. Once the \$4,000 of gross revenue is paid to the harvester, his gross profit would be \$1000.

The harvester gross margin is well above actual economic costs as shown by lease rates for red king crab between 65% and 70%. This suggests that the actual vessel costs for harvesting are in the range of 30% of ex-vessel value in this fishery.

Processor gross margin is less, as evidenced by the market for custom processing. Custom processing rates for crab generally range from \$.65 to \$.80 cents per lb., while the expected gross margin may be on the order of \$1.00 per lb.

If the increase in mandated labor costs represented 5 cents per lb., this could result in a decrease of as much as 25% to 30% in processor net margins.

For this reason my view is that this does rise to the level of a threat to the financial health of one sector, and it is a legitimate cost to address within the arbitration system.

How could such a problem be addressed.

When the wage increases were first proposed, both the Harvester and Processor's arbitration associations raised the issue with the non-binding price formula arbitrator.

Naturally, harvesters opposed any cost adjustment, while processors argued that in this case, an adjustment was warranted.

Over the 11 years of the non-binding price formula, the parties have agreed on protocols for all the crab species, and as a result the formulas have become very stable and do not change from year to year.

For this reason, it seemed if the non-binding price arbitrator alone made an interpretation that an adjustment was warranted for the mandated minimum wage increase it would destabilize the price formulas and lead to a very contentious situation where many aspects of the program would be essentially re-litigated before the arbitrators.

As a result, the parties agreed to bring the issue before the council for guidance, and to abide by the councils interpretation during the ten-year review.

Ideas on how to implement an adjustment.

Each year the non-binding price formula contract is issued by both arbitration organizations, subject to certain rules and understandings.

For example, it is generally agreed that no changes will be made to the price formulas except in extraordinary circumstances. Further, a process has been developed to seek comment from all parties prior to any change in the formula.

If the non-binding price formula arbitrator anticipates a change in the formula, he will put out a description of the change to the parties and invite comments. The arbitrator then responds to the comments in making a final determination. There have been times where comments have led to changes in the non-binding price formula from the preliminary draft to the final formula in a given year.

My suggestion is the council draft a letter to the arbitration organizations clarifying its understanding of whether certain sector-wide costs can be considered by the non-binding price formula arbitrator.

Presumably this guidance would be delivered to the arbitrator as part of the annual contract.

Because the formulas are based on historical data, the non-binding price formula arbitrator would not want to reopen the process of creating those formulas.

Instead, the arbitrator would seek an adjustment.

One idea for such an adjustment would be for the processors arbitration organization to submit data on the sector wide increase in the cost per lb. processing of crab. Obviously the harvester's arbitration organization would comment on and review this data.

If the non-binding price formula arbitrator accepted the data, with or without modifications, the arbitrator would calculate an adjustment factor to account for this cost increase and apply it to the existing price formula tables in all the crab fisheries.

No other changes in the formula or arbitration procedures would be required.