

Grain Monitoring Program

Base Measurement Program

***Report on the development and
formulation of a methodology for
the calculation of Producer
Netback Measures***



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1. Executive Summary

The effect that changes in the Grain Handling and Transportation System (GHTS) have on producers is a primary policy interest of the Federal Government's reform initiatives on grain transportation. It is also an important part of the Grain Monitoring Program (GMP), one of those policy initiatives.

In the initial stages of the Grain Monitoring initiative a base plan and methodology were stipulated in the Grain Monitoring design¹ developed by the Federal Government. As part of that original design the Federal Government anticipated the need for consultations and deeper study prior to laying down the methodology, formulas and processes for the producer netback measures.

The methodology that will be used to calculate the producer netback will be based on the *average price of grain* sold (at port) less the *export basis*. The calculation of export basis is a common industry methodology for assessing the cost of the movement of product from the farm gate to loading at the vessel. In its most basic form, export basis calculations include the costs of trucking to country elevator, primary elevation, rail transport, port terminal elevation and all associated fees and adjustments.

The objective of this report and the analysis and review leading up to it was to identify the most efficient and effective manner to measure both export basis and the producer netback in perspective of the Western Canadian GHTS.

The development of this report and its recommendations were approached in a step process starting with the development and preparation of a draft methodology and presented in a comprehensive discussion paper². After the review and approval of the Federal Government, the discussion paper was sent to a broad cross section of the stakeholder community in advance of a series of consultative discussions. These discussions served to elicit input regarding the methodology and approach.

The draft methodology for the calculation of netback focuses on the methodology of the export basis. The recommendation for calculation of the export basis includes the posted freight rate, average freight incentives, freight adjustment factor, trucking costs, posted primary elevation and dockage rates and the CWB costs. The netback would be the difference between the average selling price and the export basis.

The consultative sessions with the stakeholders provided valuable input, with many of the participants bringing forward important concepts and concerns. Specialty crop producers in particular, are concerned that the commodity range covered under the preliminary design does not go far enough and should include grains such as peas and lentils. Some stakeholders feel that the methodology requires an audit process in order to confirm that the formulaic approach accurately reflects the actual economic impact on producers. A number of groups and individuals have made suggestions on broadening and increasing the level of detail used in the calculation of the export basis.

The most difficult and contentious of the issues brought forward specifically relates to "ancillary" costs and adjustments. It is important to note that while the export basis methodology is a standard industry measure, the construction and content of the specific formula by which it is calculated is not. The contentious issues involved range from what other detailed expense should be included (i.e. rail and truck incentives, elevation incentives, grade adjustments, etc.) to the methods needed in acquiring the data to perform the calculation. Many of these issues and the varied approaches to solve them required either a level of detail not commonly available or a gathering process so intrusive as to go beyond the mandate of the GMP.

Based on the input received from the stakeholder community and the subsequent research and analysis coming from that work, the GMP team has developed three recommendations for improvement to the draft producer netback methodology as identified in the original discussion paper:

¹ The base design calls for the monitoring system to include an analysis of producer netback for wheat, durum, feed barley, and canola at a level of detail to include; selected locations in each province, at the provincial level using export prices and export basis. The analysis is to include; sensitivity analysis on the export basis using alternative formulations and cost estimates, annual percentage changes in netback attributable to world prices and export basis.

² The report can be found on Quorum Corporation website at www.quorumcorp.net in the "Papers" section.

- 1.) **Enriched basic methodology:** The draft methodology should be revised to adjust minor items related to method of calculation and to incorporate the impact of Canadian Wheat Board (CWB) tendering.
- 2.) **Revision of commodities to include special crops and exclude feed barley:** This improvement would build on the enriched basic methodology by including the measurement of producer netback for feed peas. The producer netback calculations for feed barley would be dropped.
- 3.) **Cash ticket analysis at the provincial level to increase understanding of benefits to producers:** This improvement would build on either the enriched basic methodology or expanded commodity list by incorporating analysis of CWB grain cash tickets at the provincial level on an annual basis in order confirm and/or stabilize the measures.

2. *Producer Impact Overview and Approach*

Producer netback in its basic form is a simple formula - the sale price of grain less the logistical cost of movement, as shown in figure 1 below.

$$\boxed{\text{Producer Netback}} = \boxed{\text{Sale Price of Grain at Port}} - \boxed{\text{Export Basis - the average cost of movement from farm gate to Port (loaded to ship)}}$$

Figure 1: Producer Netback Formula

Changes in producer netback will reflect changes in both market conditions and logistics costs.

The Monitor is to calculate producer netback for wheat, durum, barley, and canola at the provincial level and to determine annual percentage changes attributable to changes in the export basis and in port prices.

Producer netback is location specific. The Monitor's intent is to use a transparent approach to illustrate the component parts of the export basis at various locations. These will be regionally representative and include locations on mainlines and branch lines, high throughput and conventional elevators as well as single and multi-company points (to the extent possible without revealing commercially sensitive data).

The calculation of export basis and producer netback is not intended to compare marketing systems. Different methodologies are used to study netback for CWB grains and canola.

Measuring producer netback is a contentious issue. There is no definitive economic methodology. A review of approaches that have been used to calculate product export basis and netback for both CWB and non-CWB grain is contained in Appendix 8.2.

There are benefits to harnessing the collective wisdom of the stakeholders. Consequently, the Monitor has approached the development of netback methodology in the following way:

- Review of different approaches used to calculate producer export basis and netback
- Development of a draft methodology meeting the objectives provided by the Federal Government
- Consultation with stakeholders about the draft methodology
- Review of the input collected during the consultations
- Development of methodology improvements to calculate and monitor export basis and producer netback

3. Objectives of the Producer Netback Methodology

The purpose of the producer netback analysis is to monitor how changes in the GHTS impact the producer in terms of changes in the netback they receive – or a measure of the net value producers receive from their crops – for selected commodities over time.

The base monitoring design calls for the monitoring system to include an analysis of producer netback for wheat, durum, feed barley, and canola in the following specific areas of interest:

- Determine the export basis at selected locations in each province.
- Perform sensitivity analysis on the export basis using alternative formulations and cost estimates.
- Develop netback estimates at the provincial level using export prices and export basis.
- Determine annual percentage changes in netback attributable to world prices and export basis.

It is important to note that producer netback is but one of several measures that provide an indication of the impact of changes in the GHTS on the producer, and that it should be viewed in context of the broader monitoring program. Other measures and considerations that should be viewed in conjunction with netback are:

- Overall market process of commodities
- Total traffic by specific corridor
- Proximity to elevation facilities
- Railway loaded transit time
- Commercial Trucking rates

The Monitoring Program design includes a number of supplementary work items. It is recognized that the producer netback analysis will not answer all questions regarding the impacts on producers from reforms to the grain handling and transportation system. The supplementary work program includes a provision to conduct special studies on impacts to producers, other than those covered by the producer netback analysis.

4. Draft Methodology

As noted in Section 3, Quorum's approach to the project was to develop a draft methodology that would act as a discussion point in planned consultative sessions with the stakeholders. This section of the report discusses the draft methodology and the theory and rationale behind its use.

Our draft methodology for the calculation of export basis and producer netback attempted to provide significant information for producers without releasing information that is commercially confidential. The methodology provided an integrated approach to determining export basis and producer netback.

Basis is location specific. The export basis for wheat, durum, feed barley, and canola will be tracked at specific locations in the prairies. In another section of the supplemental program, the Monitor is estimating commercial trucking rates through a statistically valid survey. The locations surveyed will encompass different elevator and rail line types throughout the prairies. The locations used in the commercial trucking survey will also be used to track export basis and visible netback.

The Monitor is to track changes in the export basis from the base year 1999-2000 forward. This methodology for determining CWB export basis will allow us to "backtrack" and determine the export basis for CWB grains at specific locations for the 1999 and 2000 crop years. As an alternative, the Monitor considered the use of the Canadian Grain Commission's (CGC) methodology for identifying the components of the export basis. The CGC calculates an annual estimate of the canola basis. Unfortunately, this data was found to be too narrow in scope to be suitable for use as an industry measure and historical information would not be readily available. The Winnipeg Commodity Exchange (WCE) does, however, maintain a historical database of the basis for canola and could provide the historical and future annual data to the Monitor. While the WCE does not split the basis into its components, it will provide a consistent source of data over time.

The draft methodology would allow the Monitor to measure changes in the export basis and producer netback from the base year forward.

4.1 Wheat, Durum, and Feed Barley

The methodology for calculating the total export basis for CWB wheat, durum, and feed barley is as follows:

- 1.) **Determine the applicable rail freight:** The applicable rail freight for wheat and durum is the lesser of the rail freight to Thunder Bay plus the appropriate Freight Adjustment Factor (FAF) or the rail freight to Vancouver. For feed barley, the applicable freight deduction equals the lesser of the rail freight to Thunder Bay plus the eastern FAF or the rail freight to Vancouver plus the western FAF
- 2.) **Adjust the applicable rail freight for incentive rates:** Reduce the applicable freight rate by the incentive rate for the size of the car spot. If there is more than one company at a location a simple average will be calculated. It is important to note that incentive rates provide only a potential reduction in the basis. The extent to which this reduction is passed on to producers is at the discretion of the grain companies.
- 3.) **Add the cost of commercial trucking from the farm to the elevator.**
- 4.) **Add the primary tariff for elevation.** If there is more than one company at a location a simple average will be calculated. The figure used in the calculation is the maximum amount that can be charged – the potential charge.
- 5.) **Add the primary tariff for dockage (terminal cleaning).** If there is more than one company at a location a simple average will be calculated. The figure used in the calculation is the maximum amount that can be charged – the potential charge.
- 6.) **Add the CWB pool account costs for operations.**

The visible producer netback for wheat, durum, and feed barley is calculated as follows:

- 1.) **Adjust the CWB final price for the CWB operating costs** (increase the final price by the CWB operating costs).
- 2.) **Subtract the total export basis from the adjusted final price.**

The figures in Table 1 below provide more detail about the calculation at Saskatoon and Dauphin (CN lines) for wheat in the base year. The applicable rail freight is the lesser of the rail freight to Thunder Bay plus the FAF or the rail freight to Vancouver. At Saskatoon, the applicable freight rate is \$35.74, the rail freight to Vancouver. At Dauphin, the applicable rail freight rate is \$33.75, the sum of the rail rate to Thunder Bay and the FAF. On the CN line at Saskatoon there were two companies. One location had a 100+ car spot which had a \$5/tonne incentive rate in the base year. The other had a 50 to 99 car spot, which is associated with a \$3/tonne incentive rate.

Removing the average incentive rate (\$4/tonne) from the applicable rail freight of \$35.74 produces an adjusted applicable freight rate of \$31.74/tonne. In Dauphin, both of the companies operating facilities have a 50 to 99 car spot, which in 1999-2000 was associated with a \$3/tonne incentive rate. The total basis is the sum of the applicable freight rate adjusted for incentive, commercial trucking, primary elevation, primary dockage (terminal cleaning), and CWB operating costs.

The elevation and dockage charges shown are the simple average of the tariffs of the companies operating there. The total export basis for wheat in 1999-2000 was \$54.93/tonne at Saskatoon and \$55.29/tonne at Dauphin. The percentages of the basis attributable to the components of the basis are also shown. Although the applicable freight represents 65% of the total basis at Saskatoon, incentive rates reduce the freight share to 58%. In the base year, the final price for 1 CWRS (at Vancouver or the St. Lawrence) was \$167.58/tonne. Because this price has already been adjusted for CWB operating costs, this adjustment must be eliminated.

Consequently, the final price is increased by \$5.40/tonne. The visible netback to producers is then calculated as the difference between the adjusted final price and the total export basis.

	Saskatoon	Share of	Dauphin	Share of
	(Average)	Basis	(Average)	Basis
	\$/Tonne		\$/Tonne	
Freight To Thunder Bay	30.58		23.38	
Freight To Vancouver	35.74		44.24	
FAF	10.37		10.37	
Applicable Freight	35.74	65%	33.75	61%
Incentive ³	-4.00	-7%	-3.00	-5%
Applicable Freight Adj. for Incentive	31.74	58%	30.75	56%
Trucking	5.00	9%	5.00	9%
Primary Elevation	9.32	17%	10.65	19%
Dockage – Terminal Cleaning	3.47	6%	3.49	6%
CWB Costs ⁴	5.40	10%	5.40	10%
Total Basis	54.93	100%	55.29	100%
CWB Final Price 1 CWRS	167.58		167.58	
Adjusted CWB Final Price 1 CWRS	172.98		172.98	
Visible Netback to Producers	118.05		117.69	

Table 1: *Wheat Export Basis and Visible Netback, 1999-2000*

³ It is important to note that incentive rates provide a *potential* reduction in the basis.

⁴ The CWB costs are derived from a composite of Direct Costs (Country inventory financing, net of demurrage and dispatch, additional freight, drying charges, CWB hopper car interest and depreciation), Administrative and general expenses, Grain Industry Organizations and net Interest earnings.

Using the same methodology for durum produces an estimated export basis of \$66.31/tonne at Saskatoon and of \$61.45/tonne at Dauphin. The visible netback for durum at Saskatoon and Dauphin was estimated to be \$161.80/tonne and \$166.66/tonne, respectively. The calculations are shown below.

	Saskatoon (Average)	Share of Basis	Dauphin (Average)	Share of Basis
	\$/Tonne		\$/Tonne	
Freight To Thunder Bay	30.58		23.38	
Freight To Vancouver	35.74		44.24	
FAF	0.62		0.62	
Applicable Freight	31.20	47%	24.00	39%
Incentive ⁵	-4.00	-6%	-3.00	-5%
Applicable Freight Adj for Incentive	27.20	41%	21.00	34%
Trucking	5.00	8%	5.00	8%
Primary Elevation	9.32	14%	10.65	17%
Dockage – Terminal Cleaning	3.47	5%	3.49	6%
CWB Costs	21.32	32%	21.32	35%
Total Basis	66.31	100%	61.45	100%
CWB Final Price 1 CWAD	206.79		206.79	
Adjusted CWB Final Price 1 CWAD	228.11		228.11	
Visible Netback to Producers	161.80		166.66	

Table 2: Durum Export Basis and Visible Netback, 1999-2000

Using the same methodology for feed barley produces an estimated export basis of \$51.80/tonne at Saskatoon and of \$64.02/tonne at Dauphin. The visible netback for feed barley at Saskatoon and Dauphin was estimated to be \$84.08/tonne and \$71.86/tonne, respectively. The calculations are shown below.

	Saskatoon (Average)	Share of Basis	Dauphin (Average)	Share of Basis
	\$/Tonne		\$/Tonne	
Freight To Thunder Bay	30.58		23.38	
Freight To Vancouver	35.74		44.24	
FAF Western	0.00		0.00	
FAF Eastern	23.40	69%	23.40	69%
Applicable Freight	35.74	-8%	44.24	-5%
Incentive ²	-4.00	61%	-3.00	64%
Applicable Freight Adj for Incentive	31.74	10%	41.24	8%
Trucking	5.00	20%	5.00	20%
Primary Elevation	10.25	8%	12.95	7%
Dockage – Terminal Cleaning	4.30	1%	4.32	1%
CWB Costs	0.51	100%	0.51	100%
Total Basis	51.80		64.02	
CWB Final Price 1 CW Barley	135.37		135.37	
Adjusted CWB Final Price 1 CWRS	135.88		135.88	
Visible Netback to Producers	84.08		71.86	

Table 3: Feed Barley Export Basis and Visible Netback, 1999-2000

⁵ As above

4.2 Canola

In the draft methodology, the visible netback for canola was calculated as follows:

- **Calculate the total basis:** Adjust the basis calculated by the Winnipeg Commodity Exchange (WCE) for the cost of commercial trucking from the farm to the elevator. The WCE basis is the difference between the futures price and a relevant cash price. It is comprised of carrying charges, and handling and transportation costs associated with moving cash commodity to or from the deliverable futures position.³
- **Calculate the visible netback:** Subtract the total basis from the cash price for 1 Canada canola (at Vancouver).

An example showing the calculation of the visible netback for canola at Saskatoon and Dauphin is shown below.

	<i>Saskatoon (Average)</i>	<i>Dauphin (Average)</i>
	\$/Tonne	\$/Tonne
Basis	50.00	55.00
Trucking	5.00	5.00
Total Basis	55.00	60.00
Cash Price 1 Canada	287.77	287.77
Visible Netback to Producers	237.77	232.77
<i>Basis numbers for explanatory purposes only</i>		

Table 4: Canola

4.3 Data

Detailed information about the data required to calculate the basis and netback using the draft methodology is contained in the following table.

<i>Data Elements</i>				
Element	Source	Timing	Geographic Area	Comments
Freight	Railways	Annual - prior to start of crop year	Varies	
FAF	CWB	Annual - prior to start of crop year	Varies	
Incentive	Railways - rates	Annual	Constant	Potential - not actual
Trucking	Monitor Survey	Average from defined period		
Primary Elevation	CGC	Start of crop year filing	Varies	Potential - not actual
Primary Dockage	CGC	Start of crop year filing	Varies	Potential - not actual
CWB Costs	CWB	Preliminary Estimate	Constant	Not grade specific
CWB Final Price	CWB	Preliminary Estimate	Constant	
Canola Basis	WCE	Annual Average	Varies	
Canola Cash Price	WCE	Annual Average	Constant	

Table 5: Data Elements

Our draft approach does not attempt to adjust the basis for reductions in costs producers receive because of *competitive behavior* by grain handlers in local markets. We used published maximum tariffs for primary handling and dockage. Producers may actually pay a lower tariff or receive other benefits. The adjustment for incentive rates may overestimate the amount of money passed back to producers from grain companies. The commercial trucking rate will be estimated from a survey and could be variable.

³ “Using Futures and Options Contracts to Hedge”, Winnipeg Commodity Exchange

4.4 Sensitivity Analysis

In the sensitivity analysis, the following components would be varied: trucking costs, elevation and incentives. As previously noted, the primary elevation and dockage charges represented the maximum possible charge and not what the producer actually paid at that location. Similarly, the adjustment for incentive rates reflects the maximum potential reduction in cost and not what the producer actually received. The commercial trucking cost to bring the grain from the farm to the elevator may also not match what the producer actually paid. Rather than changing each item individually, we propose to change the total basis by a dollar amount and determine the impact on the visible netback to the producer.

The following table provides an example of the sensitivity analysis. The table shows the impact on visible netback in percentage terms for a \$20/tonne range in the estimated total basis. For example if our calculated basis is too small by \$10/tonne (producers are actually paying more) that would reduce the visible netback for wheat in Saskatoon by 8%. On the other hand, if the calculated basis is too large by \$10 /tonne (producers are paying less) then the visible netback for wheat in Saskatoon would increase by 8%. Similarly, if the estimated total basis for feed barley was too low (too high) by \$10/tonne at Dauphin, the actual visible netback would be 14% less (more).

<i>Sensitivity Analysis</i>	<i>Saskatoon</i>			<i>Dauphin</i>		
	<i>Wheat</i>	<i>Durum</i>	<i>Feed Barley</i>	<i>Wheat</i>	<i>Durum</i>	<i>Feed Barley</i>
	<i>\$/tonne</i>			<i>\$/tonne</i>		
<i>Total Basis</i>	54.93	66.31	51.80	55.29	61.45	64.02
<i>Visible Netback</i>	118.05	161.80	84.08	117.69	166.66	71.86
Change in Basis - \$/Tonne	% Change in Netback					
10	-8%	-6%	-12%	-8%	-6%	-14%
9	-8%	-6%	-11%	-8%	-5%	-13%
8	-7%	-5%	-10%	-7%	-5%	-11%
7	-6%	-4%	-8%	-6%	-4%	-10%
6	-5%	-4%	-7%	-5%	-4%	-8%
5	-4%	-3%	-6%	-4%	-3%	-7%
4	-3%	-2%	-5%	-3%	-2%	-6%
3	-3%	-2%	-4%	-3%	-2%	-4%
2	-2%	-1%	-2%	-2%	-1%	-3%
1	-1%	-1%	-1%	-1%	-1%	-1%
-1	1%	1%	1%	1%	1%	1%
-2	2%	1%	2%	2%	1%	3%
-3	3%	2%	4%	3%	2%	4%
-4	3%	2%	5%	3%	2%	6%
-5	4%	3%	6%	4%	3%	7%
-6	5%	4%	7%	5%	4%	8%
-7	6%	4%	8%	6%	4%	10%
-8	7%	5%	10%	7%	5%	11%
-9	8%	6%	11%	8%	5%	13%
-10	8%	6%	12%	8%	6%	14%

Table 6: Sensitivity Analysis

4.5 Annual Percentage Changes

The Monitor is also to determine annual percentage changes in netback attributable to world prices and export basis. The following chart and table provides an example of our proposed methodology to do this.

The chart and table track the export basis, port price, and resultant visible netback over a three year period. In the base year, the combination of a \$200/tonne port price and a \$50/tonne total basis result in a visible netback of \$150/tonne. In year one, the port price increases by \$50/tonne while the basis increases by \$10/tonne to reach \$60/tonne. The visible netback in year one is thus \$190/tonne. In year two, the port price falls by \$10/tonne to \$240/tonne. The basis also falls by \$15.00/tonne and is \$25/tonne in year two. In year two, the visible netback increases to \$195/tonne.

The percentage changes in netback attributable to changes in the port price and the basis are shown in the table. In year one compared to the base year, the visible netback increased by \$40/tonne. The change in the port price was \$50/tonne, 125% of the change in the netback. The basis increased by \$10/tonne, which reduced the visible netback by 25%. Thus the change in the visible netback from the base year to year one can be attributed as follows: +125% to the change in the port price and -25% to the change in the basis. In year two compared to year one, the visible netback increased by \$5/tonne in response to a \$10/tonne decrease in the port price and \$15/tonne improvement in the basis. The total change in the visible netback between years one and two can be attributed in the following way: -200% to the change in the port price and +300% to the change in the basis.

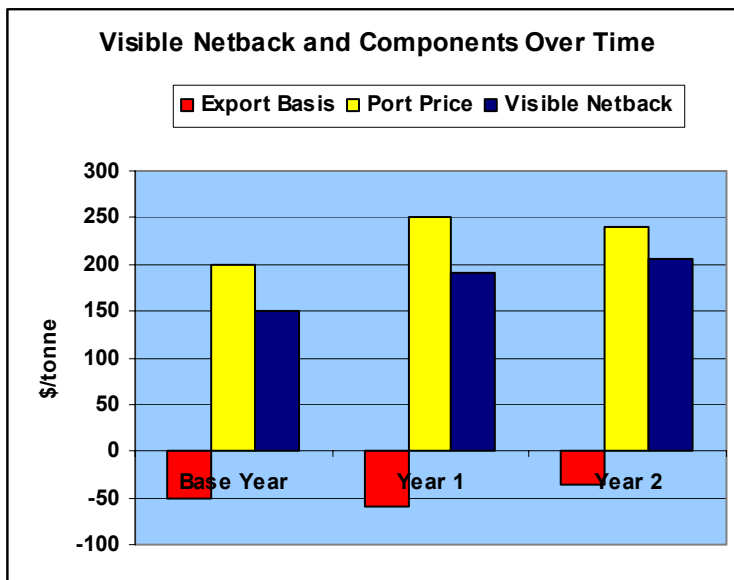


Figure 2: Netback and Components

<i>Annual Changes in Visible Netback</i>			
	<i>Base Year</i>	<i>Year 1</i>	<i>Year 2</i>
	<i>\$/tonne</i>		
Visible Netback	\$150.00	\$190.00	\$195.00
Export Basis	50.00	60.00	45.00
Port Price	200.00	250.00	240.00
	<i>Change (\$/tonne)</i>		
Visible Netback		40.00	5.00
Export Basis		-10.00	-15.00
Port Price		50.00	-10.00
	<i>% of Netback Change</i>		
Export Basis		-25%	300%
Port Price		125%	-200%

Table 7: Visible Netback

5. Stakeholder Input

The Grain Monitor's producer netback analysis team consulted with 20 stakeholders about the draft producer netback methodology and other producer impacts during October and early November. The industry stakeholders participating in the consultations are shown in the following table. All of the consultations were face-to-face meetings except for discussions with the Canadian Special Crops Association and the Western Canadian Barley Growers. The Discussion Paper was also sent to the Canadian Ship Owners Association and the Chamber of Maritime Commerce for response. No comments were provided by these parties.

Stakeholders Participating in Netback and Other Impact Consultations	
Agricultural Producers Association of Saskatchewan	Keystone Agricultural Producers
Canadian Canola Growers	National Farmers Union
Canadian Grain Commission	OmniTRAX
CN	Saskatchewan Association of Rural Municipalities
CP	Western Canadian Barley Growers
Canadian Special Crops Association	Western Canadian Wheat Growers Association
Canadian Wheat Board	Western Grain Elevator Association
Government of Alberta	Wild Rose Agricultural Producers
Government of Manitoba	Winnipeg Commodity Exchange
Government of Saskatchewan	
Inland Terminal Association of Canada	

Table 8: Stakeholder Participants

The producer netback team received many suggestions during the consultations about how to improve the export basis and producer netback methodology. A summary of input by stakeholder is contained in the appendix. Written submissions were received from the CWB and the WCWGA.

Stakeholders provided input in two main areas: overall concerns/major concerns and changes to the methodology. The overall/major concerns were as follows:

- The approach does not determine if producers are actually benefiting from efficiency gains.
- The approach does not determine if larger producers benefit more than small producers.
- The approach does not determine the distribution of efficiency gains (productivity sharing) between the railways, grain companies, and producers.
- Special crops should be included in this exercise.
- The export basis does not measure efficiency. The percentage annual change calculation which attributes the change in the netback to changes in the export basis and port price is flawed because of this.

Alternate methodologies were suggested to determine export basis and producer netback. Suggestions included:

- Producer surveys like Saskatchewan Agriculture and Food's input survey should be used to collect actual information on basis and netback rather than potential or posted data.
- Data from government programs like NISA, AIDA etc could be used to estimate actual export basis and netback.
- Analysis of cash tickets would provide estimates of export basis and netback as well as a way of gauging how accurate the draft methodology is.
- Special crops companies should be surveyed to develop estimates of export basis and netback for special crops.
- The volume of feed barley for export is so small that some other crop should be used instead. Suggestions included malt barley and peas.

- A survey should be done to collect the canola basis. The Saskatchewan Canola Growers does such a survey for Saskatchewan.

The following modifications were suggested for the methodology for CWB grains:

- Clarify where Canadian Grain Commission (CGC) fees are incorporated.
- Provide more information about the Freight Adjustment Factor and what it contains.
- Differentiate rail freight and lake freight (FAF).
- Show the Churchill rebate.
- Show the freight rate to Churchill.
- Exclude the potential incentive payments to producers.
- Exclude the interest earnings in the CWB costs.
- Incorporate the impact of CWB tendering.
- Differentiate between tendered and non-tendered movement.
- Provide more information on the competitive environment (i.e. how grain companies compete).
- Highlight the grayness or inexactness of the estimates.
- Include producer levies/check-offs in the export basis methodology.
- Compress the basis to one number so that it is symmetric with the canola basis.
- Show the calculations in \$ per bushel.

The following suggestions were made for the canola methodology:

- The basis should be weighted when calculating an average annual number.
- The cash price should be weighted when calculating an average annual number.
- Another source rather than the WCE should be used for the basis information.
- The components of the basis should be listed and costs shown.
- Show the calculations in \$ per bushel.
- Because transportation affects the price at the port the methodology is biased.

The following suggestions were made about the sensitivity analysis:

- Show the calculations in \$ per bushel.
- Because the methodology does not illustrate actual producer costs, the sensitivity analysis has little meaning.
- The methodology is too complex.

The following suggestions were made about the percentage annual change calculation:

- Show the calculations in dollars per bushel.
- The changes should be calculated relative to the base year.
- Producers really want to know which of four outcomes⁶ occurred and the net effect. That should be the focus rather than the numbers.

The overall range of stakeholder's views with regard to the methodology for the CWB grains can be best classified into two groups; those that had a strong dislike of the approach and those that like its transparency and simplicity. There were some that expressed doubts as to the feasibility of any approach accurately portraying producer netback and therefore concur with this design in lieu of another alternative. Some of the stakeholders who expressed opposition to this methodology believe it is necessary to conduct producer surveys of costs to act as an audit process in order to confirm that the formulaic approach accurately reflects the actual economic impact on producers.

⁶ The four cases are: price and export basis both increased (decreased); price increased while basis decreased; and price decreased while basis increased.

5.1 Discussion of Stakeholder Input

This section discusses the feasibility/desirability of incorporating the changes to the methodology that were suggested by the stakeholders.

A significant concern was that the draft methodology *does not reveal whether or not producers are benefiting from changes to the GHTS*. The primary area of concern was the use of potential incentive rates and posted tariffs rather than actual deductions from cash tickets. A related concern was that the impact of CWB tendering was excluded from the analysis. The revised methodology attempts to correct this deficiency through an optional analysis of cash tickets. The basis deducted from the cash tickets would be compared to the provincial estimate for export basis. This comparison would provide some idea about the extent to which producers are benefiting. If the implied export basis is greater than the cash ticket basis, producers would be receiving some of the benefits of the move to a more commercial system. The exact size of the benefit will never be known. Grain companies compete for business in many different ways and not all discounts/premiums appear on the cash ticket.

A related concern was that the draft methodology could not indicate if larger producers received a larger share of the benefit on a per tonne basis than smaller producers. Although it is an interesting question there is no accurate way to determine this.

Another major concern was that the approach does not determine the distribution of efficiency gains between the railways, grain companies, and producers. This, however, would require a productivity study (costing review) and is beyond the Monitor's mandate and expertise.

Many stakeholders suggested that special crops should be included. This is addressed in the revised methodology options.

Some stakeholders argued strongly that producer surveys should be used to solicit actual producer export basis data for CWB grains. Analysis of government program data (NISA⁷ etc) or cash ticket data was suggested as an alternative to producer surveys. Several stakeholders questioned the reliability of data from producer surveys. A number of parties, including several producer groups, felt that producers are currently "over-surveyed" and might not take the time to check their records and provide accurate data. A producer survey could also interfere in the competitive environment if certain stakeholders know which locations are being monitored by the survey. An analysis of cash tickets appears to be the most appropriate way to gather actual export basis data. How this data would be used is discussed in the methodology options.

Some stakeholders recommended that surveys also be used to collect basis data for canola because of concerns about the validity of the WCE data. The Saskatchewan Canola Growers Association monitors the basis at several locations in Saskatchewan. The CWB also monitors the canola basis but the series is not consistent in terms of location. There is not a viable or credible alternate to the WCE basis. The use of the WCE basis also allows the canola basis and producer netback to be calculated from the base year forward.

The revised methodology will incorporate the following suggestions for the CWB export basis and producer netback:

- Clarification of CGC fees
- Differentiating between rail freight and the FAF's lake shipments costs
- Churchill rebate (where applicable)
- Impact of CWB tendering
- \$ per bushel (provincial level)

⁷ Net Income Stabilization Account (NISA) – Federal Safety Net Program for producers

- Emphasis of the grayness of the numbers
- Discussion of the competitive environment

The following suggestions will not be incorporated into the CWB methodology:

- Churchill freight rate (the producer does not see this)
- Producer levies

The following suggestions for improving the canola export basis and netback methodology will be incorporated:

- Weighting of the basis and the cash price⁸
- \$ per bushel (provincial level)
- Listing the components of the basis (included in the text)

The following changes will be made to the sensitivity and annual percentage change analysis:

- \$ per bushel (provincial level)
- Comparison of the current year to the base year as well as the previous year (annual % change)
- Include a better discussion of which of the four outcomes occurred and the net impact (annual % change)

⁸ It would be preferable to show the basis and port price both weighted and un-weighted. The extensive use of forward contract sales limits the advisability of using weights. The basis would be weighted by producer deliveries and the cash price weighted by port exports.

6. *Improvements for Producer Netback Methodology*

As mentioned previously, the primary purpose of the stakeholder consultative process was to elicit commentary on the draft netback methodology as well as ideas and concepts for its enhancement. From these sessions and the subsequent analysis, the team has been able to develop three improvements for the process of calculating and presenting the producer netback.

This section discusses the three improvements for the revised methodology to monitor producer netback. They are:

- 1.) **Enriched basic methodology:** The draft methodology would be revised to correct minor problems and to incorporate the impact of CWB tendering.
- 2.) **Revision of commodities to include special crops and exclude feed barley:** This improvement would build on the enriched basic methodology by including the measurement of producer netback for feed peas. The producer netback calculations for feed barley would be dropped.
- 3.) **Cash ticket analysis at the provincial level to increase understanding of benefits to producers:** This improvement would build on either the enriched basic methodology or expanded commodity list by incorporating analysis of CWB grain cash tickets at the provincial level on an annual basis in order to confirm and/or stabilize the measures.

The following subsections describe in detail the proposed methodology of each improvement.

6.1 **Enriched Basis Methodology**

In this improvement, the following revisions would be made to the draft methodology:

- **Export Basis and Producer Netback:**
 - Flag CGC fees as being part of the primary handling tariffs or separate item where applicable⁹
 - Identify freight as rail freight and FAF's as movement costs through the seaway system
 - Incorporate the Churchill rebate where applicable
 - Incorporate CWB tendering rebate¹⁰
 - Show calculations in dollars per bushel at the provincial level
 - Provide list of components in the canola basis

The revised export basis and netback table for wheat is shown below.

⁹ WGEA members incorporate the CGC fees into their primary tariffs. ITAC members now show CGC fees as a separate item on cash tickets. The export basis calculations must allow for CGC fees as a separate item at some locations.

¹⁰ The CWB will be passing the savings from its tendering programs back to producers. The distribution of the savings will occur through the pool accounts. Thus all producers will receive a portion of the tendering program, not just those producers whose grain moved under the program.

<i>Wheat Export Basis and Visible Netback, 1999-2000</i>				
	<i>Saskatoon (Average)</i>	<i>Share of Basis</i>	<i>Dauphin (Average)</i>	<i>Share of Basis</i>
	<i>\$/Tonne</i>		<i>\$/Tonne</i>	
Rail Freight To Thunder Bay	30.58		23.38	
Rail Freight To Vancouver	35.74		44.24	
CWB Churchill Rebate				
FAF (Lake Movement Costs)	10.37		10.37	
Applicable Total Freight	35.74	65%	33.75	61%
Potential Incentive	-4.00	-7%	-3.00	-5%
Applicable Total Freight Adjusted for Incentive	31.74	58%	30.75	56%
Trucking	5.00	9%	5.00	9%
Primary Elevation	9.32	17%	10.65	19%
CGC Fees if not included in Primary Elevation				
Dockage – Terminal Cleaning	3.47	6%	3.49	6%
CWB Costs	5.40	10%	5.40	10%
CWB Tendering Rebate				
Total Basis	54.93	100%	55.28	100%
CWB Final Price 1 CWRS	167.58		167.58	
Adjusted CWB Final Price 1 CWRS	172.98		172.98	
Visible Netback to Producers	118.05		117.70	

Table 9: Wheat Export Basis and Visible Netback

- **Sensitivity Analysis:**
 - Show calculations in dollars per bushel at the provincial level
- **Annual Percentage Change:**
 - Show calculations in dollars per bushel
 - Show comparison of current year to the base year as well as to the previous year
 - Describe which of the four outcomes occurred and what the net effect was

6.2 Revised Commodity List

During consultations on Producer Netback, the consultation team was advised by a number of stakeholders that special crops should be included in the analysis. Stakeholders felt that the growing importance of special crops should be reflected in the monitoring program. The Canadian Special Crops Association (CSCA) strongly supported this notion. All parties acknowledged the difficulty in accomplishing this goal though. The methodology used to calculate a netback for canola was not felt to be appropriate for peas due to the small volume of contracts traded on the Winnipeg Commodity Exchange. Also, the pea contract has been altered during the past two years, rendering it inappropriate as a measuring tool.

Many stakeholders felt that the volume of feed barley exports was so small that the producer netback calculations would be of little value. In this option, feed peas are substituted for feed barley.

The CSCA members recommended that the netback team consult further with special crop dealers regarding a methodology and data availability for calculation and presentation of basis and netback information. It was suggested that dealers could be surveyed to collect data on the handling and transportation costs. However, this may not provide accurate information from a producer netback perspective. Analysis of the basis levels for these special crops shows a significant degree of fluctuation. The grower price is not directly translated to dealer price minus handling and transportation costs. Inverted markets can and do occur. Although producer marketing is not focused on the basis, as is the case with canola, grower prices fluctuate in a similar manner to encourage or discourage deliveries of product.

Because of the difficulties in gathering and presenting meaningful data on the individual component parts of the special crops basis, another approach was suggested. This involves reporting grower and dealer prices, calculating the basis as the spread between these prices, and including a detailed narrative of the potential components of the basis.

An independent publisher of special crops market data was recommended as the best source of pricing data for special crops. Stat Publishing from Vancouver surveys a number of dealers and publishes daily and weekly grower bids (producer prices) and weekly dealer market prices. Their website also presents graphs of basis levels. The dealers that the consultation team contacted felt that Stat Publishing would provide as good or better data than could be gathered by initiating another survey process.

Although the CSCA recommended that the netback analysis should cover edible peas, feed peas, chickpeas (two types) and lentils, the netback team feels that it would be more appropriate to include just one special crop in the producer netback calculation. The remainder of the listed special crops could be dealt with in a special study if necessary.

The methodology selected to calculate the producer netback for feed peas is as follows:

- ❑ **Calculate the total basis:** Adjust the basis calculated by the spread between the weekly grower bid prices and weekly dealer market prices for the cost of commercial trucking from the farm to the elevator.
- ❑ **Calculate the visible netback:** Subtract the total basis from the track or container yard price for the track Thunder Bay pricing point.

An example showing the calculation of the visible netback for feed peas in Saskatchewan is shown below.

<i>Feed Peas</i>	
	<i>Saskatchewan</i>
	<i>\$/Tonne</i>
Basis	25.00
Trucking	5.00
Total Basis	30.00
Cdn \$ MT Track Thunder Bay	190.00
Visible Netback to Producers	160.00
<i>Basis numbers for explanatory purposes only</i>	

Table 10: Feed Peas

Historical data on prices is available from Stat Publishing. To present an average annual basis for these commodities, the weekly data should be weighted by volumes shipped from country position, or possibly by exports. Although monthly data for exports of feed peas is available from Statistics Canada movement from country position is not readily available. Alternatively, by focusing on one month of data, such as October, the basis and netback could be calculated without the necessity of weighting. This alternative is recommended and would provide a “snapshot” during a month of heavy shipments as a proxy for the annual data. Stat Publishing is amenable to their data being used in public reports as long as they are credited.

6.3 Cash Ticket Analysis

The third improvement is an analysis of cash ticket data for CWB wheat and durum and applies equally as an extension of options 1 or 2. This analysis would provide an estimate of the impact of benefits accruing to

producers from competition within the grain handling industry and from efficiencies encouraged by the May 2000 legislation¹¹. It would also provide a check on the appropriateness of the producer netback methodology. A secondary benefit of the analysis is that it would provide information on the proportion of these grains moving to elevators in commercial trucks.

The analysis would proceed as follows:

- Sample each pool of provincial cash tickets for wheat and durum. The locations used would match the locations used in the producer netback methodology.
- Sum the deductions on each of these cash tickets excluding any deductions for producer levies or check-offs.
- Calculate the provincial average cash ticket export basis for wheat and durum.
- Adjust the provincial average export basis calculated in the producer netback methodology – remove the potential incentive savings, and the CWB tendering and Churchill rebates.
- Calculate the average potential incentive savings at the provincial level (this number is the same for all commodities).
- Compare the cash ticket export basis and the producer netback export basis.

There are **two possible outcomes** of the analysis at the provincial level:

- Case 1 - Cash ticket export basis is greater or equal to the adjusted enriched methodology export basis
- Case 2 - Cash ticket export basis is less than the adjusted enriched methodology export basis

If Case 1 occurs and the difference is greater or equal to the average provincial potential incentive rate saving, then the producers are not realizing all of the benefits being passed from railways to grain companies in terms of price¹².

If Case 2 occurs and the difference is greater than the average provincial potential incentive rate saving, then the producers are receiving the incentives flowing from the railways to the grain companies. Additional savings are due to competition between grain companies.

The examination of cash tickets is preferable to a survey of producers. Many stakeholders argued strongly that producers do not know what amounts are actually deducted from their cash tickets. Other stakeholders did not believe that the responses from producers would be valid because of survey fatigue.

Another important reason for using an analysis of cash tickets rather than a producer survey is that the cash ticket analysis would have little or no effect on the competitive environment. Furthermore, conducting a survey would be an intensive exercise requiring considerable resources and attendant expense. While the ability to construct the form, format and the breadth of information desired is attractive to some, the results of the survey would still be subjective and largely subject to interpretation. An additional risk associated with the conducting of surveys is the “rate of reply” which can neither be guaranteed or controlled. If the rate of reply is low, the statistical relevance of course diminishes.

A cash ticket analysis, performed in a statistical sampling format provides auditable measures with far less cost and interference. In short, it is the most efficient method of acquiring the needed information to confirm the results of the producer netback analysis and calculation.

¹¹ The analysis will only pick up price competition. Grain companies also use non-price competition to compete. Examples of non-price competition include grade and protein gains and bundling of farm inputs and grain business.

¹² Because grain companies also compete using non-price means such as grade and protein gains, the conclusion is only valid for price comparisons.

7. Summary Conclusions and Recommendations

7.1 Conclusions

The GMP staff found the stakeholder consultations to be beneficial both in terms of confirming the concepts and theories that were brought forward as well as broadening the perspective of the measures methodology. While consensus was not expected throughout the industry on the detail of the methodology, there is sufficient agreement to allow the monitoring program to move forward.

The key to the use of producer netback is that it cannot be viewed or presented as an unequivocal or comprehensive statistical measure of impact to the producer. It is this report's contention that producer netback be viewed not in terms of its absolute value but in the perspective of the trends in the measurement that occur over time. As with any statistical measure there are specific flaws with producer netback that must be noted, both in this report as well as cautionary notes in the annual reports the Monitor prepares.

First and foremost is the treatment of the railway incentive. There was much debate within the stakeholder consultative sessions on the issue of the inclusion of the railway incentive within the calculation of the export basis. More broadly there is considerable concern over how the incentive benefits are passed back to the producer. After considerable examination and investigation it was confirmed that without extensive examination of grain company expense and payment allocation records, the estimation and calculation of the exact amount of the incentive passed back to producers is not possible. This type of action would be considered intrusive and far beyond the mandate of the monitoring program (GMP) and therefore not feasible as an option for the Grain Monitor.

It must also be questioned what increased validity or accuracy the measure would have if its components were analyzed in greater detail than presently proposed. The netback calculation is by design an *indicator* of monies available after all normal costs and adjustments, rather than an absolute measurement. It bases its component parts on varying levels of aggregate calculations, which are broadly dispersed geographically, and are therefore not intended to provide a definitive number in terms of returns to producers, but rather an indication of trends over time.

Another item of concern within the stakeholder community, particularly amongst producer groups, relates to the confirmation of the methodology and the calculations. As noted in discussions on the consultative sessions, some producer groups have taken a strong position in recommending that a producer survey be undertaken so as to verify and enhance the netback and basis calculations. Other producer groups however take a strong position against the concept of a survey.

7.2 Recommendations

Following a review of the input collected during the consultations, three improvements for the revised methodology have been identified. They are:

1. **Enriched basic methodology:** The draft methodology should be revised to adjust minor items related to method of calculation and to incorporate the impact of Canadian Wheat Board (CWB) tendering.
2. **Revision of commodities to include special crops and exclude feed barley:** This improvement would build on the enriched basic methodology by including the measurement of producer netback for peas. The producer netback calculations for feed barley would be dropped.
3. **Cash ticket analysis at the provincial level to increase understanding of benefits to producers:** This improvement would build on either the enriched basic methodology or expanded commodity list by incorporating analysis of CWB grain cash tickets at the provincial level on an annual basis in order confirm and/or stabilize the measures.

While considerable discussion ensued surrounding the concept of producer surveys as opposed to the use of cash tickets in gathering data for both the calculation of producer netback and other impacts to producers, it is the position of this report that an ongoing producer survey would be an onerous task, one that would be far too costly in terms of its yield and ongoing benefit. There is also a concern by some that a survey could result in actions on the part of some system stakeholders to influence certain attributes of the survey.

It is recommended that should a survey be deemed necessary to validate the netback calculations it be a one time supplementary project and form a base of statistical information that would be indexed and allow for the ongoing confirmation of measures and the methodology.

8. Appendix

8.1 Summary of Stakeholder Input

8.1.1 Explanation of Summary Topics

Client Specification, Quorum Design Item	Description
Methodology for CWB Grains	As presented in Netback Discussion Paper
Methodology for Canola	As above
Sensitivity Analysis	As above
Annual % Change	As above

Stakeholder Consultation Item	Description
Producer Survey	Obtain actual producer costs for export basis through surveys
Cash Ticket Analysis	Use as a comparison to gage the accuracy of "potential" components
\$/bushel	Producers relate to imperial measures
Add Special Crops	Growing volume and significance warrants greater recognition and profile
Productivity Sharing	Determine/quantify grain company incentives passed on to producers
Revenue Cap	Issues relating to revenue cap – outside Monitor's mandate
Grain Co Toolbox	Methods grain companies use to compete for producer's grain
Other	Miscellaneous comments/concerns
Mandate	Issues relating to the Monitor's mandate

8.1.2 Summary Tables of Stakeholder Input

Export Basis Methodology for Wht, Dur & Bly	Export Basis Methodology for Canola	Sensitivity Analysis	Annual % Change	Producer Survey	Cash Ticket Analysis	Show Tables as \$/bushel	Add special crops/peas	Productivity Sharing	Revenue Cap	Grain Companies Toolbox	Netback - Other	Monitor's Mandate Issues
Doesn't capture impact of tendering program; Price signals lost as bids under the basis are distributed though the pool accounts; CGC fees are contained in Primary Elevation tariffs	Canola cash price may result in an overestimate of netback; Basis should be weighted to correct for seasonality (WCE contract volume)	Won't work because of significant basis fluctuation throughout the year	Confusing - meaningless due to price impacts	Limited value to data gathered from surveys; if done, should be accompanied by simultaneous survey of grain company toolbox	Would provide more accuracy		WCE basis not valid for pea analysis because market is not efficient			Can't be quantified; Need to expand narrative - marketing & trucking premiums, grade gains, dockage concessions, farm supplies incentives	Grain companies administer other check offs and levies - cost to grain companies	
Should include potential incentive so that producers can see geographic differences; Tendering is affecting competitive environment; Feed barley export basis is not useful as most goes to domestic market; CGC fees are not included in elevation tariffs - listed separately by some terminals	Flawed because price is impacted by availability of transportation; Weight price by volume; No value to showing components of canola basis; Suggest surveying Vancouver brokers and domestic crushers for price data			Unlikely to produce meaningful results								

Grain Companies - 12 Groups

Government – 4 Groups

Tendering will have increasing impact on competitive environment; Collapse CWB basis to single number to reflect how tendering works; Could weight provincial average by tendered and non-tendered; Could list components of CWB costs;	Show some components of canola basis (interest, storage)	May not be valuable to producers because costs are potential not actual	More important for producers to know why export basis changed; Requires more context	Could provide qualitative data; Balance with grain company toolbox survey (2)	Yes - or AIDA, CFIP or NISA data; ask Stats Cda to collect more data at farm gate		Thin pea market on WCE may mean that changes are translated into the basis faster					Don't believe that the Monitor is acting independent of the Federal Gov't; Ongoing monitoring should be transparent
Milling barley is more important export crop than feed barley; Add rationale for crop selection; Survey could include question on truck size; Net interest charges should be removed from CWB costs; More emphasis on "potential" nature of the numbers; Prince Rupert rebate?; Include actual costs such as Fobbing; Consider impact of CWB tendering at spout on methodology	Show both weighted and unweighted canola basis; Expand information on relationship between canola export and cash prices;	Fine for producers; Should consider one for system performance; Geographic variation could be calculated	Meaningless for canola due to impact of transportation on price									Monitor should at least make casual observations linking changes in netback to other variables

Export Basis Methodology for Wht, Dur & Bly	Export Basis Methodology for Canola	Sensitivity Analysis	Annual % Change	Producer Survey	Cash Ticket Analysis	Show Tables as \$/bushel	Add special crops/peas	Productivity Sharing	Revenue Cap	Grain Companies Toolbox	Netback - Other	Monitor's Mandate Issues
Producer - 10 Groups												
F&F needs more explanation; Monitor tendered vs. non-tendered; Need to determine whether incentive payment reaches producers	Include components such as tariffs and storage charges. Needs more clarity of price and basis (export vs. domestic)	Good method to create confidence intervals (3)	Show relative to base year as well as year over year. Also show in \$/bushel. Competition will have an impact; Confusing - Four different permutations; Should get clarification from client	Not likely to provide accurate results	Could provide access to cash tickets for Sask. Producers	Yes - better, yet, show net return per acre	Peas more significant than feed barley; Pea export basis - TB track price, add freight, storage and elevation; FOB farm gate so methodology won't work; Export price is very competitive and difficult to get from dealers	Need to quantify; Don't believe grain co's claims that savings are passed back to producers	Special study should be done on freight rates and how they are affected by efficiency gains	What is happening to incentive savings?	Investigate grain handling practices (net vs. gross freight on dockage)	Monitor should have mandate to recommend changes
Methodology is fine - like the transparency; Feed barley not useful due to small volume; Need to examine tendered vs. non-tendered because trucking premiums are being pulled; Would prefer to see components of basis; Show CGC fees	Weight canola basis by deliveries to or shipments from elevators; Sask. Canola Growers survey canola basis at 10 locations with better (lower) results than the WCE	Not valid due to flawed netback and export basis methodology	Year over year is most significant for monitoring changes; 1999 (base year) is arbitrary	Would not be worthwhile; Producers are surveyed to death and responses are less than accurate	Worthwhile to supplement methodology; Locations of cash tickets don't have to match basis locations - to avoid possibility of manipulation by grain companies		Canola methodology won't work because the WCE basis is underestimated; Interested in covered hoppers, boxcars, containers and inter-modal; recommend a survey of special crop handlers to obtain estimate of price and basis for edible peas, feed peas, lentils and chickpeas	Productivity study necessary to measure impact on freight rates; Methodology doesn't determine who receives efficiency gains		Questioned the number of quality segregations in the Canadian system; Context very important; Study CWB performance in meeting quality specs - examine contracts and shipping and service records as well as grade give-aways, etc.; Examine short line freight rates and contractual agreements with mainline carriers	Monitors mandate should include performance targets, benchmarks and suggesting changes	
Probably would have developed similar methodology; Need to include impact of tendering - adjust provincial average export basis for CWB rebate to producers; Incentive rate savings; trucking premiums and price signals are being diminished due to competition for tenders - savings are being pooled; Don't include interest earnings in CWB costs	Don't trust WCE numbers; Grain companies play with the basis; Street and futures prices no longer related because of lack of threat of delivery; Context is very important (e.g. impact of a short crop); Weight basis by deliveries, shipments or port movement		Should be measured relative to the base year instead of year over year	Need survey like SAF's farm input survey to determine export basis and producer netback	Could get producers to fax cash ticket info; WRAP does input survey - producers sign a confidentiality agreement; NISA data not appropriate for calculating netback		Little is actually priced on the WCE; Not appropriate for peas			Erosion of equity - expect that larger producers receive greater portion of rebates; Expect govt to monitor as system becomes more commercial		
Like the simple, transparent approach; Should incorporate producer/trucking as well as commercial trucking costs; Must be able to accommodate differential freight rates; Adjust at provincial level for CWB tendering; Should examine CWB sales to U.S. to determine netback	Weight canola basis by deliveries - ties producer action to basis; Majority of deliveries are on forward contracts - will impact weighting; Should show components such as posted tariffs and interest charges											

Export Basis Methodology for Wht, Dur & Bly	Export Basis Methodology for Canola	Sensitivity Analysis	Annual % Change	Producer Survey	Cash Ticket Analysis	Show Tables as \$/bushel	Add special crops/peas	Productivity Sharing	Revenue Cap	Grain Companies Toolbox	Netback - Other	Monitor's Mandate Issues
Methodology won't show whether farmers are capturing efficiency savings; Too much uncertainty in numbers; Potential incentive should not be included Danger in the gray areas; Wait time costs on commercial trucking won't show up in rates; Show Churchill rebate; No concerns regarding the overall methodology.												

Regulatory - 2 Groups

Where are the CGC fees captured?	Should be symmetric with calculations for Board grains - add info on posted tariffs and interest on storage. CWB tracks canola basis		Meaningless because export basis does not measure efficiency	Strongly recommended - could be structured like <i>farm input survey</i>	Use to check methodology Has authority to collect	Yes Yes	Strongly recommended - will lobby the client	Monitor must determine if producers are receiving incentives from grain co's	Monitor manipulation by railways through incentives and claw back			Should set benchmarks using historical data or analysis of competitors
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Railways - 3 Groups

Concern re use of published tariffs - may not reflect actual rate paid; Need to clarify that FAF represents lake freight; Focus is on cost components instead of value added components Stress "potential" nature of components; Should capture seasonal variation in trucking; Flag when FAF is lake freight, rebates etc (3)			Meaningless because export basis does not measure efficiency gains (1) Show both year over year and comparison to base year (2)	Not recommended: Unlikely to provide reliable data (2)			Should be included - possibly as a special study		Should capture industrial development fund			
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8.2 Review of Other Approaches

This chapter reviews different approaches that have been used in the past to calculate producer export basis and netback for both CWB and non-CWB grains. In all, four methodologies are reviewed.

8.2.1 Alternate Approaches to Export Basis

Export basis is the cost of movement borne by producers from the farm gate to the port. It includes costs such as handling, trucking, marketing, and rail freight. Several different approaches have been used to calculate the export basis.

8.2.2 Canadian Wheat Board (CWB) Grains

Fulton et al define the export basis for wheat (or other CWB grains) as the cost paid by the producer to move the grain from the **elevator to the port**.¹³ For example, the export basis for wheat at Saskatoon is calculated for 1996/97 in the following way:

Basis = Freight + Elevation & Dockage + CWB Costs

The complete calculation of the basis for wheat at Saskatoon, Saskatchewan is shown below.

Wheat Basis Calculation – Saskatoon, SK - 1996/97	
Component	\$/tonne
Elevation & Dockage	11.89
Freight (to Vancouver)	35.37
CWB Costs	5.85
<i>Country Elevator Carrying Charges</i>	2.86
<i>Terminal Storage</i>	0.76
<i>Demurrage/Despatch</i>	.0.95
<i>Additional Freight</i>	2.07
<i>Drying</i>	0.70
<i>Interest & Depreciation on CWB Hopper Cars</i>	0.12
<i>Administrative Expenses</i>	1.70
<i>Interest Earnings</i>	-3.30
Total Basis	53.11
<i>Fulton et al and CWB Annual Report 1996/97</i>	

The elevation and dockage are posted primary elevator tariffs. The CWB costs are operational costs incurred by the CWB in marketing grain. The breakdown of these costs is shown in the above table. The CWB provides an annual accounting of its operating costs for its pool accounts. While the elevation and dockage and freight vary by location, the CWB costs are not location specific.

The researchers acknowledge that this approach over estimates the basis because of the existence of non-price competition for farm inputs and through trucking and marketing premiums.

Parsons and Wilson have also examined the cost of moving wheat through the GHTS.¹⁴ The estimated cost of moving wheat from a farm by Reford, Saskatchewan in 1996/97 to a port position was estimated as follows:

¹³ Murray Fulton, Kathy Baylis, Harvey Brooks, and Richard Gray, "The Impact of Deregulation on the Export Basis in the Canadian Grain Handling and Transportation System",

¹⁴ Graham Parsons and William Wilson, "Grain Handling and Transportation Systems: A Canada – United States Comparison", OWEC, January 1999.

Wheat Basis Calculation – Reford, Saskatchewan – 1996/97	
Component	\$/tonne
Trucking	5.00
Country Handling	13.75
Marketing	0.53
Rail Movement	
To Vancouver	32.82
To Thunder Bay	33.46
Port Terminal & Handling Charges	
At Vancouver	8.42
At Thunder Bay	11.35
Seaway Tolls	
At Vancouver	0.00
At Thunder Bay	19.05
Total Basis	
To Vancouver	60.52
To Thunder Bay & St Lawrence	83.14
<i>Parsons and Wilson (Canadian Grain Commission data)</i>	

Parsons and Wilson's data came from the Canadian Grain Commission as reported by the Canada Grains Council. The data was supplemented with UGG custom trucking rates. The **country handling charges** include primary elevation and dockage as posted at the CGC, a calculated charge for shrinkage, and the country storage charges incurred by the CWB as reported in the CWB Annual Report. **Freight charges** consist of posted rail tariffs and the CWB's freight adjustment factor (FAF).¹⁵ **Marketing costs** include charges for interest and banking, and administrative and general expenses and are obtained from the CWB Annual Report. Costs at the **terminal position** include storage, fobbing charges, and lake transportation (for wheat moving through the St. Lawrence Seaway). The terminal storage costs are from the CWB Annual report. Fobbing charges and lake transportation costs are supplied directly by the CWB. Storage and fobbing charges are incurred for grain moving through east coast **transfer elevators**. The transfer storage cost is calculated while the fobbing charges are supplied directly by the CWB. A **more detailed explanation of the derivation of the CGC cost estimates is contained in the appendix**.

Parsons and Wilson recognize that individual producers do not pay all of the above costs because some of the costs are pooled. The authors acknowledge that using published tariffs overestimates the actual export basis.

The determination of the freight deducted from the producer's cash ticket for CWB grains requires further explanation. As of 1995/96, the freight deductions for CWB grain at each country elevator follows the following rules:¹⁶

Wheat, CWES, Durum or Designated Barley: The total freight deduction equals the lesser of the rail freight to Thunder Bay plus the appropriate Freight Adjustment Factor (FAF) or the rail freight to Vancouver.

Feed Barley: The total freight deduction equals the lesser of the rail freight to Thunder Bay plus the eastern FAF or the rail freight to Vancouver plus the western FAF.

In 1995/96, the pooling basis points for CWB grain were changed from Vancouver and Thunder Bay to Vancouver and the St Lawrence. The eastern pooling point was changed because of shifts in export marketing and increases in shipping costs through the Great Lakes system. The CWB introduced

¹⁵ More information on the determination of the freight paid by producers for CWB grains is discussed later in this section.

¹⁶ Canadian Wheat Board, "Freight Adjustment Factors (FAFs).

new pooling basis deductions, **Freight Adjustment Factors (FAFs)** at this time to account for the pooling basis change and for locational advantages in shipping from country elevators to Churchill and the US.¹⁷

The FAFs consist primarily of costs incurred to export grain through the St. Lawrence Seaway. The FAFs deducted from producer cash tickets is used to offset the total costs incurred to move grain into eastern export position.¹⁸ The Freight Adjustment Factors are adjusted annually to reflect production shifts, freight rates, and market opportunities. The FAFs vary by catchment area and commodity. Prior to the beginning of the crop year, separate catchment areas are established for wheat, durum, CWES, feed barley, and designated barley for shipments to the west coast, east coast, Churchill (wheat only), and the US.

Beginning with the 1999-2000 crop year, producers delivering wheat in the Churchill catchment area are eligible to receive rebates under the **Churchill Freight Advantage Rebate program**. The rebate is based on the proportion of eligible wheat grades and classes that were exported through Churchill relative to total producer deliveries in the catchment area of the eligible wheat.¹⁹

8.2.3 Non-CWB Grains

The **Canada Grains Council** defines the basis for non-board grains in the following way:²⁰

$$\text{Basis} = \text{Elevator Charges} + \text{Transportation} + \text{Storage and Interest} + \text{Premium or Discount}$$

The basis for canola at Aberdeen, Saskatchewan in December of 2000 was calculated as shown below.

Canola Basis Calculation – Aberdeen, Saskatchewan December 2000	
Component	\$/tonne
Elevation	12.14
Freight	38.08
Primary Storage (30 days @ \$.052/day)	1.56
Terminal Storage (10 days @ \$0.68/day)	0.68
Terminal Cleaning	5.43
Interest (60 days at 5.5%/annum)	3.65
Cash Premium (track Vancouver)	-14.00
Total Basis	47.54
Canada Grains Council, "Statistical Handbook 2000", 2000, page 167	

This methodology treats the following components as fixed and unvarying by location: primary and terminal storage, terminal cleaning, and interest. The elevation and freight costs are based on published rates and thus can overestimate the actual basis.

The **Winnipeg Commodity Exchange** also monitors basis levels for non-CWB commodities. The basis calculated by the WCE is a single number rather than the above set of numbers. The basis is calculated for specific locations by company and is derived as the difference between the nearby future's price and the company's street price.

¹⁷ Canadian Wheat Board, "Freight Adjustment Factors (FAFs).

¹⁸ In 1999-2000, it cost \$43 M to move wheat into eastern export position. The wheat FAFs collected from producers in that crop year totaled \$23 M. The net charge to move wheat into eastern export position was \$20 M or \$1.23/tonne. The net charge is reported in the CWB pool accounts.

¹⁹ CWB, "Grain Matters", March-April 2001.

²⁰ Canada Grains Council, "Statistical Handbook 2000", 2000.

8.2.4 Alternate Approaches to Producer Netback

Netback in its basic form is a simple formula, the sale price of grain less the logistical cost of movement.

$$\boxed{\text{Producer Netback}} = \boxed{\text{Sale Price of Grain at Port}} - \boxed{\text{Export Basis - the average cost of movement from farm gate to Port (loaded to ship)}}$$

Changes in producer netback will reflect changes in both market conditions and logistics costs.

The Monitor will use the design parameters to calculate producer netback for wheat, durum, barley, and canola at the provincial level and to determine annual percentage changes attributable to changes in the export basis and in port prices.

Parson and Wilson

Parson and Wilson used published provincial average farm gate prices as estimates of the netback to producers. The data was from Saskatchewan Agriculture and Food, which in turn sources data from Statistics Canada and the CWB. For non-CWB grain, the farm gate values are based on estimates of farm cash receipts. Although Statistics Canada also estimates the farm gate value of CWB grain, the estimates do not contain the final payments.

CGC's Cost of Movement Calculation

At the request of the Monitor, the CGC provided its methodology for calculating the cost of moving wheat from a mid-prairie point to export position. The example shown is for 1992-93 at which time the procedures were documented. The same process is currently in use.

Estimated cost of moving wheat from a mid-prairie point to export position, 1992-1993		
	Via the Pacific Coast	Via the St. Lawrence Seaway
	\$/tonne	\$/tonne
Primary elevator costs		
1. Elevation	8.01	8.01
2. Removal of Dockage	2.66	2.66
3. Shrinkage	0.16	0.16
4. Storage	2.78	2.78
5. Railway freight	11.98	11.98
Marketing		
6. Interest, Bank & Other Charges	-0.11	-0.11
7. Administrative & General Expenses	1.50	1.50
Terminal elevator costs		
8. Storage	1.68	1.68
9. Fobbing charges	6.71	6.61
10. Lake transportation	-	18.12
Transfer elevator costs		
11. Storage	-	1.70
12. Fobbing Costs	-	2.27
Total	35.37	57.36
Canadian Grain Commission, October 2001		

Explanatory Notes: Estimates are based on moving 1 CWRS Wheat from Reford, Saskatchewan

1. Elevation rates filed with Canadian Grain Commission (CGC) by Saskatchewan Wheat Pool(SWP). Trucking premiums may be applied to attract deliveries. These are not provided to CGC; not covered in the filed rate quoted.

2. Removal of Dockage rates filed with CGC by SWP
3. Canadian Wheat Board (CWB) Final Payment x maximum shrinkage allowance (Schedule X - CGC). $\$156.82 \times 0.10\% = \0.16
4. As reported in the CWB Annual Report. Carrying charges on Wheat stored in country elevators ÷ completed sales of wheat basis in store Thunder Bay, Vancouver or Churchill, domestic & export.
 $\$54,971,310 \div 19\,759\,062 \text{ tonnes} = \$2.78.$
5. Rail Freight to terminal refer only to the portion paid by the shipper. (Reford - midpoint). Quoted amount from railways.
6. As reported in the CWB Annual Report. Interest and bank charges plus other operating costs ÷ by same tonnage as #4. $-\$2,235,728 \div 19\,759\,062 = -\$0.11.$
7. As reported in the CWB Annual Report. 'Wheat Board administrative and general expenses' ÷ by same tonnage as #4. $\$29,614,902 \div 19\,759\,062 = \$1.50.$
8. As reported in the CWB Annual Report. Storage costs on Wheat stored in terminal elevators ÷ by same tonnage as #4. $\$33,250,406 \div 19\,759\,062 = \$1.68.$
9. Fobbing charges include elevation, outward weighing and inspection, terminal elevator receipt cancellation, clearance association charges and wharfage. Thunder Bay fobbing also includes superintendence and forwarding brokerage.
Fobbing rates quoted from CWB.

	<u>Aug. 1/92 to Mar. 31/93</u>	<u>Apr. 1/93 to July 31/93</u>
Thunder Bay	\$6.61	6.61
Pacific	\$6.71	6.71

10. Lake Transportation includes lake freight, lake brokerage and insurance, St. Lawrence Seaway and Welland Canal tolls, and inward elevation into transfer elevators. Submitted by CWB.
11. Estimated days of operation ÷ turnover x daily storage tariff (filed with CGC).
 $(275 \text{ days} \div 7.620) \times .047 = \$1.70.$
12. St. Lawrence fobbing includes outward elevation, outward inspection and weighing, superintendence, wharfage and forwarding brokerage charges. No estimate is included for stevedoring. Submitted by CWB.