
Price Cap Compliance Performance Review

BC Ferry Commission

April 1, 2016

Note: This report has been redacted such that information of a confidential and commercially sensitive nature is not included.



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Executive Summary

PricewaterhouseCoopers LLP (“PwC”) was engaged by the B.C. Ferry Commission (the “Commission”) to review British Columbia Ferry Services Inc.’s (“BCFS”, “BC Ferries”, or the “Company”) price cap compliance calculations in accordance with Section 38 (2) of the *Coastal Ferry Act* (the “Act”).

PwC was asked to review the information provided by BCFS, and, using determinations found in the Commissioner’s Orders and their professional expertise, provide an assessment of BCFS’ compliance with price caps during Performance Term 3 (“PT3”). In addition, PwC was asked to provide a review of the reasonableness of BCFS’ proposed price cap calculations for Performance Term 4 (“PT4”).

Price cap compliance during PT3 was determined based on a review of BCFS’ supporting analysis used to calculate price cap indexes. The analysis provided was for an interim PT3 period from April 1, 2012 to September 30, 2015. The analysis appears to be consistent with the Commission’s Orders. In addition, key inputs for historical revenues and traffic volumes could be accurately traced back to the general ledger and accounting systems for the selected sample quarterly period. Minor errors in the supporting analysis used by BCFS were noted, however, these errors were immaterial in the determination of price cap compliance during PT3. BCFS appears to be in compliance with price caps for the PT3 period from April 1, 2012 to March 31, 2016.

BCFS has proposed a number of changes to the price cap calculations for PT4. These changes are related to:

1. Advanced purchase strategies
2. Seniors’ base price level
3. PT4 price cap reset

PwC does not have any issues with the proposed changes to the price cap calculation methodology for PT4. The rationale for all changes is well documented by BCFS and the changes appear to be applied accurately in the supporting analysis used by BCFS.

Notice to Reader

This Report is issued by PwC for the exclusive use of the Commission in connection with its review of BCFS' compliance with price caps under Section 38 (2) of the Coastal Ferry Act.

Our work did not constitute an audit conducted in accordance with generally accepted auditing standards, an examination of internal controls nor attestation nor review services in accordance with the standards established by the Chartered Professional Accountants of Canada. Accordingly, we do not express an opinion nor any other form of assurance on the financial or other information, or operating internal controls, of the Project.

PwC did not examine, compile or apply agreed upon procedures to satisfy the requirements of the Chartered Professional Accountants of Canada to the financial information used in this Report and we therefore are unable to express assurances on such information except where expressly stated in the Report to form part of the scope of our work.

Further this Report does not constitute an opinion as to legal matters, including the interpretation of the Coastal Ferry Act or any other similar matters. The economic impact of the various options is also outside the scope of PwC's work.

Our work is based primarily on the information and assumptions listed in the body of this Report. While we read information from various sources we did not perform checking or verification procedures except where expressly stated in the Report to form part of the scope of our work. Our work and commentary is subject to assumptions, which may change with the benefit of further detailed information. We make no representation regarding the sufficiency of our work and had we been asked to perform additional work, additional matters may have come to our attention that would have been reported to the BC Ferry Commission.

Some of the documents and figures we reviewed were produced by third parties. We did not corroborate or verify these documents and figures with these parties. It is outside the scope of our review to evaluate the methodology used to conduct independent studies; therefore, we have accepted the information as presented, including conclusions. We did review the credentials of external consultants that BCFS management relied upon and that we were unfamiliar with.

The outputs of the Report are intended to provide the BC Ferry Commission with information to assist in informing their decision making process pertaining to the Project. PwC accepts no liability in respect of any loss, damage or expense of whatsoever nature caused by any use the reader may choose to make of this Report, or which is otherwise consequent upon the gaining of access to the Report by the reader.

Our Report, including schedules and appendices, must be considered in its entirety by the reader. Selecting and relying on specific portions of the analyses, or factors considered by us in isolation may be misleading.

Background

In April 2003, the Province of British Columbia established the B.C. Ferry Authority (the “Authority”), an independent corporation that holds the single issued voting share of BCFS.

BCFS as the operating subsidiary of the Authority provides coastal ferry services on the west coast of British Columbia. With 35 vessels travelling between 47 terminals, on 24 routes, BCFS is one of the largest ferry operators in the world, both in terms of fleet size and passengers carried.

A Coastal Ferry Services Contract existing between the Province and BCFS defines service levels on each regulated route and the Commission sets price caps across the route groups every four years. Within its operating framework, BCFS can decide on fares, and can access capital markets directly.

The Commission is a provincial regulatory agency operating under the Coastal Ferry Act (the “Act”) with responsibilities for making regulatory decisions affecting ferry operators in the Province.

Under Section 38 (2) of the Act, the BC Ferries Commissioner (the “Commissioner”) is required to determine quarterly, for each route group, whether the average fare charged by a ferry operator is within a price cap. In the event that an operator’s average fare is not within the price cap over any four consecutive quarters, Section 48 of the Act indicates the actions the Commissioner may take to bring about compliance by the operator.

By Order 05-01, dated February 9, 2005, the Commission ordered that ferry operators should:

1. Calculate and compare average fare and price caps quarterly, for each route group, in a manner consistent with the *Determination of Procedure for Calculation and Comparison of Average Ferry Fares and Price Caps*, which was attached to Order 05-01.
2. Provide the comparison to the Commissioner within 60 days of the end of each quarter in a format indicated in the determination.

On October 22, 2011, the Commission issued Order 11-03 revising the average fare and price cap calculation according to the *Revised Methodology for Calculation of Average Ferry Fares for Comparison with Price Caps*, which was attached to Order 11-03.

On September 30, 2012, the Commission issued Order 12-02 stating the price cap indexes for PT3 period beginning April 1, 2013 and ending March 31, 2016. Order 12-02 also reset the index for each route group to 100 as of April 1, 2012 based on the weighted average tariffs that existed as of March 31, 2012.

On March 20, 2014, the Commission issued Memorandum 45 allowing BCFS to transfer the amount of revenue earned in fiscal 2014 in excess of the price cap to a fuel deferral account. As a result, BCFS was in compliance with the price cap index as at March 31, 2014.

On September 16, 2015, the Commission issued Order 15-03 stating that the price cap index shall be reset to 100 at the commencement of PT4.

The route groups were revised over the course of PT3:

- At the end of PT2, price cap compliance testing was required for four separate route groups: Major routes, Route 3, Minor routes and Northern routes.
- On April 1, 2012, the beginning of PT3, the Minister of Transportation and Infrastructure (the “Province”) and BCFS executed the Performance Term Three Agreement amending the Coastal Ferry Services Contract (“CFSC”) to provide for the amalgamation of the Major routes and Route 3 into a single route group.
- On March 31, 2013, the Province and BCFS executed the Route Group Agreement amending the CFSC to amalgamate all route groups into a single route group until expiration of the Agreement on March 31, 2016. Upon expiration of the Route Group Agreement, unless otherwise agreed to by the parties, the route group would revert back to the Major, Northern and Minor route groups.
- On April 1, 2016, the Province and BCFS executed the Performance Term Four Agreement amending the CFSC to extend the single route group concept for PT4.

Scope and Approach

PwC was engaged in January 2016 by the Commission to review the BCFS’ compliance with price caps during PT3 and to review BCFS’ proposed price cap calculations for PT4.

PwC was asked to review the information provided by BCFS, and, using determinations found in the Commissioner’s Orders and their professional expertise, provide an assessment of BCFS’ compliance with price caps during PT3. In addition, PwC was asked to provide a review of the reasonableness of BCFS’ proposed price cap calculations for PT4. Our review was conducted in accordance with Orders 05-01, 11-03, 12-02 and 15-03.

The focus of PwC’s review was on BCFS’ price cap calculations and accuracy of their data sources. The scope and approach of our work included:

Scope	Approach
a) Review of the Act, Commission’s Orders and Memorandums related to price caps	<ul style="list-style-type: none"> Reviewed the Act, Route Group Agreement, Orders 05-01, 11-03, 12-02 15-03 and Memorandum 45
b) Review of BCFS’ price cap calculation Excel spreadsheets and supporting data for PT3	<ul style="list-style-type: none"> Examined the structure of the Excel spreadsheets and key formulas to verify that inputs and calculations were consistent with the Commission’s Orders Recalculated key outputs to verify the accuracy and completeness of the price cap calculations Reviewed the spreadsheet for errors and formula consistency using a spreadsheet analytics tool For a sample quarter (September 30, 2015), traced revenue and traffic data in the price cap calculation spreadsheet to BCFS’ general ledger source
c) Review of BCFS’ proposed price cap calculations for PT4	<ul style="list-style-type: none"> Examined the structure of the Excel spreadsheets and key formulas to verify that inputs and calculations were consistent with the Commission’s Orders Reviewed reports prepared by BCFS’ external consultant, InterVISTAS, related to the proposed price cap adjustments for PT4 Provided comments on the reasonableness of the proposed changes to the price cap calculations
d) Clarification of any issues observed	<ul style="list-style-type: none"> Developed written questions for BCFS Reviewed responses to questions from

BCFS

e) Discussions with representatives of BCFS

- Met with BCFS representatives in person to discuss the price cap calculation methodology and walk through data flow between BCFS' general ledger, traffic system data and the price cap calculation spreadsheet

f) Finalization of the report

- Discussed results with representatives of the Commission
 - Debriefed a draft version of this report with the Commissioners
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PT3 Price Cap Compliance

Price Cap Framework

The purpose of the price cap compliance test is to determine whether weighted average ferry fares are more or less than the price caps allowed by the Commission.

The original methodology used to calculate average ferry fares and price caps was described in an attachment to Order 05-01 entitled “Determination of Procedure for Calculation and Comparison of Average Ferry Fares and Price Caps.” The methodology of Order 05-01 used to calculate average ferry fares is referred to by economists as the Tornquist Index Method. Order 05-01 and its attachment can be found online at:

http://www.bcferrycommission.ca/wp-content/uploads/2011/04/Order_05-01.pdf

Order 11-03 revised the calculation methodology of Order 05-01. The calculation methodology by Order 11-03 replaced the Tornquist index method with the Direct Paasche Price Index. The Direct Paasche Price Index is widely recognized as a valid methodology to calculate price indices. The methodology is described in an attachment to Order 11-03 entitled “Revised Methodology for Calculation of Average Ferry Fares for Comparison with Price Caps”. This change was made to align the calculation methodologies between the average ferry fares and price caps. Order 11-03 and its attachment can be found online at:

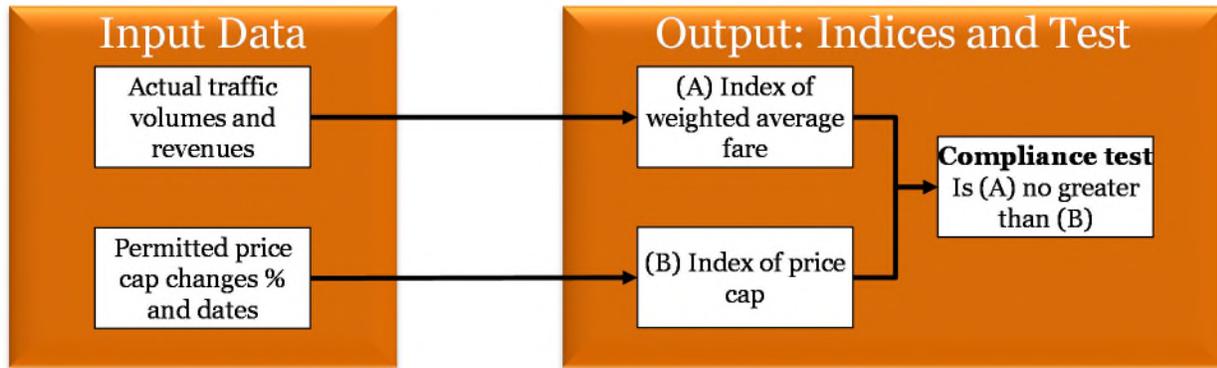
<http://www.bcferrycommission.ca/wp-content/uploads/2011/04/BCFC-Order-11-03-FINAL.pdf>

Price Cap Mechanics

The average ferry fares and price caps are expressed as indices for comparative purposes and we will refer to them as the “Price Compliance Index” and the “Price Cap Index”, respectively. The Price Compliance Index is based on actual revenues and is a measure of the revenue-weighted average fares based on a basket of traffic types. As such, changes in specific “rack rate” tariffs will generally not be equal to changes in the index. The Price Cap Index is a measure of the maximum allowable increase in weighted average fares from the beginning of a performance term.

The price cap compliance test is applied each quarter and the Price Compliance Index may not exceed the Price Cap Index over any four consecutive quarters. This test is required for each route group.

The diagram below summarizes the approach for measuring and comparing average ferry fares and price caps. The detailed step-by-step calculations can be found in Order 11-03 and 05-01.



It should be noted that there have been certain changes to BCFS’ regulatory and operating environment since Orders 11-03 and 05-01; these changes affect the application of the price cap calculation methodology found in those orders:

- **Route Groupings:** There were originally seven separate route groups, each requiring a separate price cap compliance test. The Performance Term Three Agreement amalgamated routes into the Major, Minor and Northern route groups. Subsequently, the Route Group Agreement amalgamated all route groups into a single route group. Therefore, by the end of PT3, only one price cap test was required on the single route group.
- **Traffic Type Basket:** There were originally only four traffic types. For PT3, revenues were disaggregated into a total of 11 traffic types. Therefore, input information on 11 traffic types was required for price cap calculations.

BCFS is required to provide the Commission with a price cap compliance report each quarter. Based on the reports provided, BCFS has complied with the price caps during PT3. The reported average fare index values are shown below:

Quarter Ending	Cap	Actual
September 2015	115.36	115.29
June 2015	113.85	114.17
March 2015	112.76	112.96
December 2014	111.97	111.89
September 2014	111.08	110.74
June 2014	109.54	109.39
March 2014 ¹	108.42	108.42
December 2013	107.60	108.06
September 2013	106.68	107.16
June 2013 ²	105.18	105.80

¹ As per BCFC Memorandum 45, BCFS has transferred the revenue earned in excess of the price cap to a fuel deferral account, and as a result the Actual index is equal to the Price Cap as at March 31, 2014.

March 2013	New Majors: 104.15 Northern: 104.15 Minors: 104.15	New Majors: 103.40 Northern: 99.84 Minors: 103.23
December 2012	New Majors: 103.37 Northern: 103.76 Minors: 103.36	New Majors: 102.75 Northern: 99.76 Minors: 102.42
September 2012	New Majors: 102.45 Northern: 103.31 Minors: 102.46	New Majors: 101.85 Northern: 99.78 Minors: 101.70
June 2012	New Majors: 101.02 Northern: 100.98 Minors: 101.06	New Majors: 100.54 Northern: 99.51 Minors: 100.65

The quarterly price cap compliance reports can be found online at:

<http://www.bcferrycommission.ca/reports-press/quarterly-reports/>

Procedures and Observations

PwC reviewed supporting analysis used by BCFS to determine price cap compliance. The Price Cap Model provided to PwC covered an interim PT3 period from April 1, 2012 to September 30, 2015.

The Price Cap Model computes a Price Cap Index and a Price Compliance Index for each route group and for a single amalgamated route group. The price cap and price compliance indices are compared against each other to determine price cap compliance. The Price Cap Index begins PT3 at 100 and is indexed according to Order 12-02. The Price Compliance Index is calculated based on inputs for actual historical revenues and traffic volumes.

PwC performed the following procedures and noted any observations:

Procedure	Observation(s)
Examined the structure of the Excel spreadsheets and key formulas to verify that inputs and calculations were consistent with the Commission’s Orders	<ul style="list-style-type: none"> • During the course of PT3, the price cap compliance testing moved to testing as a single route group rather than separately testing each individual route group • BCFS’ methodology is to first calculate the revenue allowable by price cap (“RAPC”) for individual route groups before summing RAPCs from all route groups together • BCFS’ methodology for calculating price compliance for a single route group appears to have been implemented correctly in the supporting analysis

² On March 31, 2013, the Province and BCFS executed the Route Group Agreement amending the CFSC to amalgamate all route groups into a single route group until expiration of the Agreement on March 31, 2016.

	<ul style="list-style-type: none">• BCFS' methodology is consistent with the Commission's interpretation of the single route group price cap calculations• PwC noted that there may be alternative methods to calculating price cap compliance on a single route group basis. The Commission may seek to provide further guidance to BCFS on the desired price cap calculation methodology for PT4
Recalculated key outputs to verify the accuracy and completeness of the price cap calculations	<ul style="list-style-type: none">• PwC found no material errors in the spreadsheet and any minor errors/inconsistencies had no impact on price cap compliance• BCFS has acknowledged the discrepancies and will update their Price Cap Model going forward
Reviewed the spreadsheet for errors and formula consistency using a spreadsheet analytics tool	<ul style="list-style-type: none">• PwC found no material errors in the spreadsheet and any minor errors/inconsistencies had no impact on price cap compliance• BCFS has acknowledged the discrepancies and will update their Price Cap Model going forward
For the sample quarter ending September 30, 2015, traced revenue and traffic data inputs on the Price Cap Model to BCFS' general ledger and traffic system	<ul style="list-style-type: none">• PwC did not note any discrepancies between the revenue and traffic data inputs in the Price Cap Model and the general ledger/accounting system

Based on the results of procedures performed, BCFS appears to be in compliance with price cap compliance requirements for the PT3 period from April 1, 2012 to March 31, 2016.

PT4 Proposed Calculations

BCFS has proposed a number of adjustments to the price cap compliance calculations for PT4.

1. **Advance Purchase Strategies:** The new advance purchase model outlined in the Fare Flexibility and Digital Experience Initiative approved by Order 15-01 will effectively eliminate separate reservation fees and instead, reservations will be included in variable priced fare products. In order to address the implication of this change occurring in the middle of the performance term, BCFS has proposed to change price cap calculations at the beginning of the performance term, such that the revenues from reservations will be combined with revenues from passenger vehicles and the reservations count will no longer be included. PwC views that the proposed methodology for the advanced purchase strategies appears reasonable.
2. **Seniors' Base Price Level:** Seniors' passenger revenue is currently generated through customer tariff and social program funding. The funding for the seniors' social program will stop in PT4 and as a result, BCFS has proposed to re-calibrate the price cap calculation to address the impact of the elimination of the funding. PwC views that the proposed methodology for the seniors' base price level appears reasonable.
3. **Reset PT4 Price Cap Index:** BCFS is expected to end PT3 with a Price Compliance Index that is below the Price Cap Index. Order 15-03 states that the Price Cap Index shall be reset to 100 at the commencement of PT4. BCFS has proposed that the opening PT4 Price Compliance Index be set equal to the price cap underage or overage at the end of the PT3. BCFS is effectively proposing that PT4 would begin with a Price Compliance Index less than 100 to maintain the difference between Price Compliance Index and Price Cap Index at the end of PT3. PwC views that the proposed methodology for the PT4 Price Cap Index reset appears reasonable.

PwC reviewed supporting analysis used by BCFS to illustrate the adjustments proposed above to the price cap calculations for PT4. BCFS appears to have correctly implemented the proposed changes into the price cap calculation model for PT4.