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1 September 2015

Mr. Robert Byrne Director, Regulatory and Advisory Services Board of Commissioners of Public Utilities P.O. Box 21040 St. John's, Newfoundland A1A 5B2

Subject:

Facility Association Newfoundland and Labrador-Taxis, Jitney's & Liveries Category 2 Rate Application

Dear Mr Byrne:

Introduction

In accordance with your request, Oliver, Wyman Limited (Oliver Wyman) reviewed the Taxi, Jitney and Liveries (hereafter referred to as taxi) rate application submitted by Facility Association (hereafter referred to as FA).

Summary of Findings

FA Proposal

As presented in its application, FA proposes to increase its rates for Third Party Liability (TPL) by 74.7%, Accident Benefits (AB) by 141.9%, and Uninsured Auto (UA) by 180.1%. FA proposes decreases to its rates for physical damage coverages: Collision by 29.8%, Comprehensive and Specified Perils by 17.4%, and All Perils by 25.7%. (FA's physical damage coverage rates are based on a percentage of its private passenger rates and the individual multipliers would be adjusted accordingly.) FA estimates its proposed overall rate level change for all coverages combined (including physical damage) is an increase of 74.1%.



Page 2
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

FA Indication

FA presents its estimate of its rate level change need on three bases, each with a different return on equity (ROE)/ cost of capital (COC)¹ target and different pre-tax return on investment rate (ROI) assumption:

- 1. including a cost of capital at a target ROE of 12% and an assumed ROI of 0.41%
- 2. no cost of capital (target COC of 0%) and an assumed ROI of 0.41%
- 3. no cost of capital (target COC of 0%) and an assumed ROI of 2.8%

The base with the target ROE at 12% and assumed ROI at 0.41% represents FA's best estimate of its rate level change need. However, the two bases with the target COC set at 0% are also provided by FA as it understands the Board does not accept a cost of capital provision in the FA rates. The ROI at 2.8% is presented because FA understands the Board's Guideline ROI range is 2.8% to 4.0%. The following table presents these indications provided by FA, along with the proposed changes.

Table 1

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Base	TPL	AB	UA	Collision	Comp	SP	AP	All
12% ROE &	+110.1%	+180.2%	+219.1%	-23.4%	-7.8%	+43.6%	-12.0%	+108.7%
0.41% ROI								
0% COC &	+87.4%	+149.9%	+184.6%	-31.7%	-17.8%	+28.0%	-21.5%	+86.2%
0.41% ROI								
0% COC &	+74.4%	+139.0%	+172.1%	-32.5%	-19.2%	+25.7%	-22.6%	+73.8%
2.80% ROI								
Proposed	+74.7%	+141.9%	+180.1%	-29.8%	-17.4%	-17.4%	-25.7%	+74.1%

Hence, FA is proposing a rate level change for each of the coverages that is *close to* its estimate of its overall rate level change need based on the indicated change with a 0% target COC and an assumed 2.8% ROI.



¹ The rate indications based on a COC target exclude the investment income on the capital; whereas the rate indications based on a ROE target include the investment income on the capital.

Page 3
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

With the exception of Specified Perils and All Perils, the proposed rate change is higher than the indicated rate change for each coverage. The reason for this is as follows. Originally FA filed a proposed change for each coverage that matched its initial (original) estimate of its rate level change need based on a target 0% COC and +2.8% ROI. However, in the course of the interrogatory process, two calculation errors were identified. (One error increased the rate indications, the other error reduced the rate indications.) FA corrected its rate level indications; however, given the minimal difference, FA chose not to amend its proposed rate changes.

The proposed changes for Specified Perils and All Perils are selected to be in-line (or the same as) the Collision/Comprehensive changes.

FA estimates the proposed average premium increase is approximately \$2,738 per vehicle. The following table presents the current average premiums and the proposed average premiums for TPL, AB, UA, and all coverages combined

Table 2

	TPL	AB	UA	Total All Coverages
Current Average Premium	\$3,321	\$182	\$47	\$3,695
Proposed Average Premium	\$5,802	\$440	\$132	\$6,433
Proposed Average Change (\$)	+\$2,481	+\$258	+\$85	+\$2,738

TPL, AB and UA premiums comprise approximately 95.2% of FA's total written premiums, with the balance (4.8%) for the physical damage premiums.

Findings

Applying the current June 2014 Board Auto Insurance Filing Guideline ("Board Guideline") trend rates, the same complement of credibility approach the Board accepted in FA's last taxi filing, and other assumptions we find to be reasonable, we calculate rate level indications (which we refer to



Page 4
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

as the Board Guideline Rate Indications) that, overall, are much lower than the rate level indications calculated by FA under each of its two 0% COC bases as shown in Table 3.

Table 3

Coverage	FA's Indicated Rate Changes (ROI at 0.41%)	FA's Indicated Rate Changes (ROI at 2.8%)	FA's Proposed Rate Changes	Board Guideline Rate Indications
TPL	+87.4%	+74.4%	+74.7%	+27.4
Accident Benefits	+149.9%	+139.0%	+141.9%	+81.6%
Uninsured Auto	+184.6%	+172.1%	+180.1%	+131.3%
Collision	-31.7%	-32.5%	-29.8%	-27.2%
Comprehensive	-17.8%	-19.2%	-17.4%	-18.4%
Specified Perils	+28.0%	+25.7%	-17.4%	+19.2%
All Perils	-21.5%	-22.6%	-25.7%	-8.8%
Total	+86.2%	+73.8%	+74.1%	+28.9%

However,

• The Industry data through to the end of December 31, 2014 was not available at the time FA prepared its rate filing. The data is now available. We have reviewed that data, provided our recommended loss trend rates to the Board staff based on this more recent data, and are now awaiting comments from the Industry on the updated recommended trend rates. Our recommended December 2014 loss trend rates are generally higher than the trend rates we recommended to the Board (and that were approved by the Board) based on June 2014 data. As a result, we believe that the higher trend rates we have recommended should be considered in reviewing this rate application. We estimate that the "Board Guideline Rate Indications" of +28.9%, overall, would increase to +39.6%² using our updated (through December 31, 2014) recommended loss trend rates instead of the Board approved June 2014 loss trend rates. But, as discussed later, due to the

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² The detailed rate changes by coverage are presented in Table 6.

Page 5
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

uncertainty surrounding the selected loss trend rates, we do not find FA's selected loss trend rates to be unreasonable; using FA's selected loss trend rates we estimate that the "Board Guideline Rate Indication" of +39.6%, overall, would increase to +42.6%.

- Because FA's relatively small amount of taxi claim data is not statistically credible, the complement of credibility is a key consideration in determining FA's rate level needs. The "net trend" approach³ accepted by the Board for FA's last rate filing and used by FA to determine its complement of credibility in this filing is a generally reasonable and accepted methodology. While this approach provides stability to rate indications, it is not as responsive to consistently poor (or favourable) claim experience, particularly when there is a high level of uncertainty surrounding the adequacy of the current rate level. This now appears to be the situation with FA's taxi program:
 - FA insures a relatively small number of taxis (hence low credibility).
 - Over the ten-year period 2004-2013 FA's reported claim costs (indemnity costs, undeveloped) are in excess of \$24 million as compared to its collected premium of approximately \$15 million.
 - For the 2013 accident year (which was not reflected in FA's last filing), FA estimates its ultimate claim costs (indemnity costs, developed) to be \$4.2 million as compared to its collected premium of \$1.9 million.
 - As presented by GISA, the FA 2014 accident year experience for taxis as of December 31, 2014 shows a continuation of poor results; with \$3.0 million in reported claim costs (indemnity costs, undeveloped) and \$2.4 million in earned premiums.

In addition, largely because there was a long gap between FA's most recent rate filings in 2013 and 2014 and its prior rates dated 1993, there is a wide difference in views between the Board and FA as to the adequacy of FA's current rates (which serves as the "starting point" for the complement of credibility).

In assessing FA's rate level needs we believe the Board should accept FA's selected loss trend rates or at least give consideration to the loss trend rates we have recommended based on



³ The "net trend" approach is where the complement of credibility is set equal to the net premium/loss trend that is estimated to have occurred since the time the current rates came into effect – subject to various adjustments, including an adjustment to take into account the known degree of rate level adequacy of the current rates.

Page 6
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

Industry data as of December 31, 2014 and to FA's continued poor claim experience. But we also believe that given the relatively large rate changes approved by the Board effective in 2013 and 2015 and the relatively large rate changes that continue to be indicated, that consideration should be given to determining what is driving FA's poor claim experience and large rate level indications.

We discuss more fully later in this report the key differences in assumptions and methods made by FA in this rate application compared to those underlying the "Board Guideline Rate Indications" (+28.9% overall as presented in Table 3 above using the June 2014 Board loss trend rates and +39.6% using our recommended December 2014 loss trend rates). Briefly, the differences relate to (1) standard for full credibility, (2) complement of credibility base, and (3) the selected loss trend rates.

Background

FA submitted a rate application for an overall proposed rate level change of +74.1% with a target effective date of February 1, 2016 for new business and renewals. Oliver Wyman received a copy of the rate application on May 22, 2015 from FA. On June 16 we provided our questions on the rate application to FA, and received FA's responses in two parts: on June 29 and July 22. Follow-up questions were provided to FA on July 29 and its responses received on August 6, 2015. We now have sufficient information to prepare this report.

FA last revised its rates on September 1, 2015, when it increased its average rate level by 19.3% based on its rate filing submitted March 2014. Prior to this rate change, FA increased its average rate level by 50.1% on August 1, 2013.

Findings - Introduction

FA calculates three sets of rate level indications for all coverages based on different profit and investment rate targets/assumptions, and proposes changes in its rate level for each coverage based on its findings. For simplicity, for the remainder of this document we only discuss FA rate indications assuming a target 0% COC (consistent with the Board's Decisions in the two prior filings) and an assumed ROI of 2.8% (consistent with the Board's Guideline minimum ROI).

FA's indicated and proposed rate level changes for each coverage are summarized in the following table.



Page 7
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

Table 4

Table 4		
Coverage	FA's Indicated Rate Changes (ROI at 2.8% and COC at 0.0%)	FA's Proposed Rate Changes
TPL	+74.4%	+74.7%
Accident Benefits	+139.0%	+141.9%
Uninsured Auto	+172.1%	+180.1%
Collision	-32.5%	-29.8%
Comprehensive	-19.2%	-17.4%
Specified Perils	+25.7%	-17.4%
All Perils	-22.6%	-25.7%
Total	+73.8%	+74.1%

Findings - Rate Level Changes

As support for FA's proposed changes, FA calculates and presents a rate level need by coverage based on its Newfoundland and Labrador (NL) loss experience arising from the latest five accident years (2009 to 2013) ending December 31, 2013 as compiled by GISA. We refer to this five-year period as the experience period. We reviewed the rate level indications developed by FA, and in so doing have examined all aspects of the ratemaking procedure. The following are the key assumptions in FA's rate application.

- Loss Trends FA selects loss trend rates based on its review of Industry commercial vehicles data as of June 30, 2014 to project its historical loss experience to the average accident date of its proposed rate program. We discuss FA's selected loss trend rates below.
- Premium Trends and On-Level Factors FA adjusts its premiums to take into consideration its rate level changes in 2013 and 2015. We find these on-level adjustments to be reasonable.



Page 8
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

- Selection of Ultimate Losses (loss development) FA relies upon its non-PPV (commercial, motorcycles, snow vehicles, taxis, etc.) NL experience in selecting development factors that it applies to its reported incurred losses for taxis. (FA's reported incurred losses do not include allocated loss adjustment expenses.) We find FA's estimates of ultimate losses to be reasonable.
- Selection of Ultimate Claim Counts (claim count development) FA relies upon its non-PPV (commercial, motorcycles, snow vehicles, taxis, etc.) NL experience in selecting development factors that it applies to its reported claim counts for taxis. We find FA's estimates of ultimate claim counts to be reasonable.
- Experience Period Weights For each coverage, FA combines its experience over the five accident years by assigning a 20% weight to each year. We find the weights to be reasonable and consistent with its prior filing.
- Loss Adjustment Expense (LAE) FA's LAE provision (for both internal and external claim settlement related expenses) is based on the contractual arrangement between FA and its servicing carriers, which, in turn, is based upon the FA's loss ratio results. We find these estimates to be in line with the contractual arrangements. However, the actual LAE costs are not provided by FA to support these provisions.
- Health Levy FA has not included a provision for the Health Levy (HL) as it finds taxis to be an excluded class. Under the circumstances, we find this to be reasonable.
- Full Credibility Claim Count Standards FA selects a full credibility claim count standard for each of TPL, AB and UA of 3,246, 2,164, and 2,164, respectively. These standards differ from the standard approved by the Board in FA's two prior filings. In its 2013 filing, FA selected a full credibility claim count standard for each of TPL, AB and UA of 5,410, 2,164, and 2,164, respectively. In the March 2014 filing, the Board found that FA had not supported changes from its full credibility standards that it used in its 2013 filing, and required FA to use these (2013) standards again in its 2014 filing. We discuss this issue more fully below.
- Complement of Credibility To the extent that FA determines its own loss experience is not statistically credible, FA assigns the balance of credibility to its estimate of its current permissible loss ratio adjusted for its estimate of the resulting inadequacy in its current rate level (due to FA implementing a smaller rate increase than it estimated its rate level change need was in the prior application) and the net loss/premium trend since the



Page 9
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

effective date of its last rate change. FA's calculations imply that the level of the prior rate change (as directed by the Board) was not at an adequate level. We discuss this issue more fully below.

- Expense Provision FA assumes a total expense provision of 23.6% allocated as follows: (a) variable: 6% standard commissions, 4% premium tax, 1% servicing carrier fee, 0.15% miscellaneous regulatory fees, and 9% servicing carrier operating costs for a total variable expense provision of 20.15% of premium; and (b) fixed: 1.3% for driving record abstracts and 2.0% for central office expenses for a total fixed expense provision of 3.3% of premium. The 6% commission rate is based on an agreement between the FA Board and its servicing carriers. The 4% premium tax rate is set by the provincial government. The servicing carrier fee of 1% and servicing carrier operating costs of 9% are based on an agreement between the FA Board and its servicing carriers, rather than the actual costs and expenses of the servicing carriers for processing taxi policies. The fixed expense costs are based on estimates by FA, taking into consideration its most recent actual costs and proposed rate level change. We discuss the expense provision more fully below in the Other Considerations section.
- Contingent Commissions In calculating its rate level change need, FA does not include a
 contingent commission provision. We find this assumption to be in keeping with the
 Board's Guidelines.
- Finance Fee Revenues FA does not offer a monthly payment plan and there are no finance fees paid by the taxi policyholders.
- Profit Provision (Cost of Capital) FA presents its rate indications without a provision for profit (target COC at 0%). The Board approved FA's prior rate change on the basis of assuming a target COC of 0%. Our discussion of FA's rate indications is based upon its presentation of rate indications using a COC of 0.0%.
- Investment Income on Cash Flow (ROI) FA assumes a pre-tax return on investment rate of 0.41% on the cash flow (losses). In its prior rate application FA assumed a pre-tax rate of 1.41%. However, FA acknowledges the Board's minimum ROI at 2.8%, by providing alternative rate indications on that basis in its rate filing documentation, and selecting its proposed change so as to be in-line with that basis. The Board approved FA's two prior rate changes on the basis of assuming a target ROI of 2.8%. Our discussion of FA's rate indications is based upon its presentation of rate indications using a ROI of 2.8%.



Page 10
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

Based on our review of the application and the responses to the questions we have raised, we present below a discussion of the following methods/assumptions used by FA for the Board's consideration: (1) the loss trend rates, (2) the full credibility standard, and (3) the basis for the complement of credibility.

The TPL and AB premiums represent approximately 90% and 4%, respectively, of the total premiums for taxis. Given the large proportion of TPL premiums to the total premiums, our findings are largely based on the assumptions/methods related to the TPL coverage.

Loss Trend Rates

The loss cost trend rates are used to adjust the actual claim experience that occurred in the experience period to the cost level of the period in which the proposed rate program is to be in effect.

The Industry experience for taxis, which are categorized as public vehicles for statistical reporting purposes, is too limited for use in selecting loss trend rates. FA, therefore, bases its selected loss trend rates on the NL Industry commercial vehicle (CV) loss experience. As the Board has no guideline on the data to be used to select trend rates for taxis, and FA's use of Industry CV experience for determining loss trends is consistent with its prior approach, we find the use of Industry CV experience to be reasonable.

Based on Industry CV experience in NL as of June 30, 2014, FA selects its CV loss cost trend rates for each coverage by separately selecting frequency and severity trend rates and then combining these selected trend rates to arrive at its selected loss cost trend rates⁴.

The following table summarizes the CV loss cost trend rates⁵ selected by: FA as of June 30, 2014, Oliver Wyman (and approved by the Board) as of June 30, 2014, and the CV loss trend rates recommended by Oliver Wyman to the Board as of December 31, 2014.



⁴ FA uses the same trend rate for both past and future trend periods.

⁵ Oliver Wyman uses the same trend rate for both past and future trend periods.

Page 11
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

Table 5

Loss Cost Trend Rates	FA June 2014	Oliver Wyman June 2014	Oliver Wyman December 2014
Bodily Injury	+4.4%	+1.0%	+3.0%
Property Damage	+3.3%	+1.0%	+3.0%
Accident Benefits	+9.3%	+9.0%	+7.0%
Collision	+2.4%	-0.5%	+0.0%
Comprehensive	+1.8%	+0.5%	+1.5%

As presented in the tables above, the CV loss cost trend rates selected by FA are higher than those selected by Oliver Wyman as of June 2014 (approved by the Board) and as of December 2014 (pending).

We presented our rationale for the CV trends rates that we selected in our reports to the Board. As we state earlier, we suggest that the Board consider our recommended trend rates as of December 2014 rather than the June 2014 trend rates.

And, as we have stated in our trend reports to the Board, we continue to find that the considerable volatility in the Industry CV experience makes the trend patterns difficult to identify.

The differences between the trend rates selected by Oliver Wyman and those selected by FA are generally due to different judgments regarding: (1) trend measurement period, (2) selected loss development factors, (3) inclusion/exclusion of loss adjustment expenses, (4) FA's application of a level change adjustment in the 2003/2004 time period, and (5) as respects our December 31, 2014 recommendations, a difference in the data valuation date. We discuss more fully the selections made by FA and these differences in Appendix #1 at the end of this report.

The Industry data through to the end of December 31, 2014 was not available at the time of FA's rate filing preparation. Since then, we have provided our selected loss trend rates to the Board staff based on this more recent December 2014 data, and are awaiting comments from the Industry on the new updated trend rates. Our recommended December 2014 loss trend rates are generally higher than the trend rates we recommended to the Board (and that were approved by the Board) based on June 2014 data. As a result, we believe that the higher trend rates we have recommended should be considered in reviewing this rate application. Therefore, we provide our estimate of the rate level indications if these more recent December 2014 loss trend rates were applied instead of those selected by FA. We estimate making this change, and no other changes



Page 12
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

in assumptions, FA's rate level change need would reduce by approximately 5 percentage points; from +74% to +69%⁶.

Hence, the rate level impact of substituting Oliver Wyman's current selected loss trend rates as of December 2014 for FA's selection has a relatively small impact on FA's rate level indications. Given the uncertainty and volatility of the underlying loss experience and FA's need to select trend rates based on indemnity costs only (as discussed in Appendix #1), we do not find FA's selected loss trend rates to be unreasonable.

Full Credibility Standard for TPL

While there is science underlying the selection of the full credibility standard, considerable judgment is exercised by actuaries in selecting full credibility standards.

In the prior filing (March 2014), FA made changes to its full credibility standards from those used in its 2013 filing (which were developed by its prior actuarial consultant, Eckler). The Board found that FA had not fully supported its proposed changes to the full credibility standards, and FA was directed to use the same standards as those from its 2013 filing.

Again, in this rate application FA has changed its full credibility standards to those it had proposed in the prior March 2014 filing that the Board did not accept. FA has not provided any additional technical support for its changes, but does state that it uses the new standards in other provinces, and that these proposed standards result in more weight be given to its actual experience (and, therefore, less weight to the complement of credibility).

In its 2013 filing, FA selected a full credibility count standard for TPL of 5,410 claims and referenced its 2003 Atlantic Commercial Study as the basis for its selected standard. The full credibility count standard for each coverage is referenced in the context of Collision, with a full credibility count standard for Collision at 1,082. TPL was set at approximately five times the Collision standard.



⁶ FA calculates that if it had instead selected the Board approved CV loss trend rates as of June 30 2014 (which are those selected by Oliver Wyman) and no other changes in assumptions, its rate level change need would reduce by approximately 15 percentage points; from +74% to +59%.

Page 13
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

In this rate application, FA proposes to lower its full credibility count standard for TPL to 3,264, at approximately three times the Collision standard. (FA is proposing to use the same standards it proposed for the March 2014 that the Board did not approve.)

Given the importance of this issue, we updated the prior Eckler's study⁷ using the more recent GISA Atlantic Commercial Vehicle size of loss experience for accident years 2009, 2010 and 2011 as of December 31, 2013. Based on our analysis, we continue to find Eckler's selection of a TPL factor of five times the Collision standard to be supported. For this reason, we find that FA has not sufficiently supported its change in the full credibility standard for TPL (from five times the Collision standard to approximately three times the Collision standard) that the Board approved in the prior filing.

We note that if FA were to apply the Board approved full credibility standards in this rate application, and make no other changes in methodology or assumptions, its rate level indication would reduce by approximately a 7 percentage points.

Complement of Credibility

In this rate application, FA adjusts its target loss ratio for (a) rate inadequacy it believes exists due to the difference between its prior application rate indication compared to the rate change approved by the Board, and (b) the net premium/loss trend rate for the period of time between the effective date of its current rate program and its proposed effective date for its proposed rate program effective dates - a period just over one year. The key issue is the adjustment for rate inadequacy that FA believes exists based on its prior analysis.

In its prior rate application, FA estimated its rate level change need to be +91.7% (based on a target 12% ROE). As stated in the Board's Decision A.I.11 (2015) regarding the FA prior application, the Board was not in agreement with some of FA's assumptions and as a result a rate increase of 19.3% was approved for FA. The 19.3% rate increase was based on the Board's Guideline loss trend rates, alternative assumptions regarding the full credibility standards and complement of credibility, and the Board's Guideline profit provision standards.

Hence, based on the Board's Decision, we do not find it appropriate to make an adjustment for rate inadequacy carried over from its prior application.



⁷ See attached summary worksheet of data and findings in Appendix #2.

Page 14
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

In response to our questions on this issue, FA estimates that if it did not make an adjustment for any rate inadequacy, and no other changes in assumptions, its overall rate level indication would reduce by approximately 21 percentage points.

Further, making changes to <u>both</u> the full credibility standard and basis for the complement of credibility the rate level change indication would decline by approximately 31 percentage points.

The selected credibility standard and complement of credibility have a material impact on the rate level indications calculated by FA.

The net trend approach used by FA to determine its complement of credibility is a reasonable and appropriate methodology used by other actuaries. However, it is highly dependent on the assumed level of rate adequacy underlying the current rates. While it is not unusual for there to be a difference in view regarding the current rate adequacy level, the difference between the Board's view and FA's view is unusually large. This difference is largely due to the long lag between FA's 2013 rate filing and its previous rates dated 1993.

Although making no adjustment for rate inadequacy is consistent with the Board's Decision on FA's prior rate application, we note that FA's taxi experience continues to be poor:

- Over the ten-year period 2004-2013 FA's reported claim costs (indemnity costs, undeveloped) are in excess of \$24 million as compared to its collected premium of approximately \$15 million.
- For the 2013 accident year (which was not reflected in FA's last filing), FA estimates its ultimate claim costs (indemnity costs, developed) to be \$4.2 million as compared to its collected premium of \$1.9 million.
- As presented by GISA, the FA 2014 accident year experience for taxis as of December 31, 2014 shows a continuation of poor results; with \$3.0 million in reported claim costs (indemnity costs, undeveloped) and \$2.4 million in earned premiums.

This means that due to FA's relatively low number of risks, the net trend approach is slow to recognize FA's poor taxi experience. That is, assuming a continuation of FA's poor experience, it



Page 15
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

will likely submit rate filings proposing relatively large rate increases for several years. This situation was largely brought on by FA not submitting a taxi filing for many years⁸.

Rate Level Change Summary

We reviewed the rate level indication as developed by FA and in so doing have examined all aspects of the ratemaking procedure.

As we have discussed, due to the relatively low volume of taxi risks, there is considerable volatility in the experience used to determine the rate level indication in this application. As well, the necessary use of non-taxi experience as the basis for the selected loss trend rates adds to the uncertainty of the findings.

Changes to certain of the FA's assumptions that we believe to be reasonable and within the Board Guidelines would lead to an overall rate level indication that is less than the rate level need that the FA has estimated and proposed. The following three alternate assumptions when combined, without any other changes in assumptions, would significantly reduce FA's overall rate level indication:

- the Board's Guideline CV loss trend rates as of June 2014, the same full credibility claim count standard for TPL as approved by the Board in the FA 2013 and 2014 taxi applications, which is based on commercial vehicle experience in the Atlantic provinces, and the complement of credibility assumption without FA's adjustment for rate inadequacy.
- our recommended loss trend rates as of December 2014 instead of the CV loss trend rates selected by FA, and the same full credibility claim count standard for TPL as approved by the Board in the FA 2013 and 2014 taxi applications and the complement of credibility assumption without FA's adjustment for rate inadequacy.
- 3. FA's CV loss trend rates as of June 2014, the same full credibility claim count standard for TPL as approved by the Board in the FA 2013 and 2014 taxi applications and the complement of credibility assumption without FA's adjustment for rate inadequacy.



⁸ We note that had FA taken annual rate increases from 1993 onward, it is likely that FA's overall rate level indication would be much lower than +74% and that there would a much smaller difference between FA's calculated overall rate level indication and the Board Guideline rate level indication.

Page 16
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

Applying these alternate assumptions to FA's calculations we derive the following rate level indications as presented in Table 6 as the "Board's Guideline Indications" and "FA's June 2014 Trends and Board Credibility Assumptions."

Table 6: ROI at 2.8% and COC at 0.0%

Coverage	FA's Indicated Rate Changes	FA's Proposed Rate Changes	Board's Guideline Rate Indications June 2014 Trends (1)	Board's Guideline Rate Indications Dec 2014 Trends (2)	FA's June 2014 Trends & Board Credibility Assumptions (3)
TPL	+74.4%	+74.7%	+27.4%	+39.1%	+42.1%
Accident Benefits	+139.0%	+141.9%	+81.6%	+78.7%	+91.4%
Uninsured Auto	+172.1%	+180.1%	+131.3%	+128.1%	+113.5%
Collision	-32.5%	-29.8%	-27.2%	-13.6%	-20.2%
Comprehensive	-19.2%	-17.4%	-18.4%	-4.6%	-14.3%
Specified Perils	+25.7%	-17.4%	+19.2%	+0.2%	+23.1%
All Perils	-22.6%	-25.7%	-8.8%	-6.1%	-1.2%
Total	+73.8%	+74.1%	+28.9%	+39.6% ⁹	+42.6%

Hence, we find the FA's proposed overall rate level change of +74% to be higher than the indications we calculate based on alternate assumptions.

Using our recommended loss trend rates as of December 2014 and the alternative credibility standards and complement of credibility, lowers FA's overall rate level indication by approximately 34 percentage points. The 34 percentage point difference is attributed to (approximately):

December 2014 Loss Trends: -5%

Credibility Standards: -7%

Credibility Rate Adequacy Assumption: -22¹⁰%



⁹ All rate indications presented are subject to verification by FA.

¹⁰ Rounded up from +21%, so as to sum rounding to 34 percentage point difference.

Page 17
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

Using our FA's selected loss trend rates and the alternative credibility standards and complement of credibility, lowers FA's overall rate level indication by approximately 31 percentage points. The 31 percentage point difference is attributed to (approximately):

- Credibility Standards: -7%
- Credibility Rate Adequacy Assumption: -24¹¹%

However, as discussed earlier, FA continues to have poor taxi experience, and as a result will likely follow with another relatively large rate increase proposal next year.

Therefore, in assessing FA's rate level needs we believe the Board should accept FA's selected loss trend rates or at least give consideration to the loss trend rates we have recommended based on Industry data as of December 31, 2014 and to FA's continued poor claim experience. But we also believe that given the relatively large rate changes approved by the Board effective in 2013 and 2015 and the relatively large rate changes that continue to be indicated, that consideration should be given to determining what is driving FA's poor claim experience and large rate level indications.

Other Considerations

Expense Provision

FA assumes a total expense provision of 23.6% allocated as follows: (a) variable: 6% standard commissions, 4% premium tax, 1% servicing carrier fee, 9% servicing carrier operating costs, and 0.15% for regulatory fees - for a total variable expense provision of 20.15% of premium; and (b) a total fixed expense provision of 3.3% of premium.

FA's contractual arrangement with its serving carriers allows for a 10% (1% + 9%) variable expense provision for underwriting and processing. Hence, if FA's current average premium for of \$3,695 increases as proposed to \$6,433, its servicing carriers will receive an average increase of \$274 (from \$369 to \$643) per Taxi for underwriting and processing. Similarly, with FA's contractual arrangement of 6% commission expense, its average commission will increase from \$222 to \$386 per Taxi.



¹¹ Rounded up so as to sum to 31 percentage point difference.

Page 18
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

Although we find the expense provision is accurately included in the calculation of the rate level change need presented by FA based on the contractual arrangement with the servicing carriers, given the actual the average allowance per Taxi proposed (\$643 to process and underwrite, and \$386 for commissions), the Board may wish to confirm the reasonableness of these amounts.

Distribution and Use

- This report was prepared for the sole use of the Newfoundland and Labrador Board of Commissioners of Public Utilities (Board). All decisions in connection with the implementation or use of advice or recommendations contained in this report are the sole responsibility of the Board.
- Oliver Wyman's consent to any distribution of this report (whether herein or in the written agreement pursuant to which this report has been issued) to parties other than the Board does not constitute advice by Oliver Wyman to any such third parties and shall be solely for informational purposes and not for purposes of reliance by any such third parties. Oliver Wyman assumes no liability related to third party use of this report or any actions taken or decisions made as a consequence of the results, advice or recommendations set forth herein. This report should not replace the due diligence on behalf of any such third party.
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Considerations and Limitations

• For our review, we relied on data and information provided by FA without independent audit. Though we have reviewed the data for reasonableness and consistency, we have not audited or otherwise verified this data. It should also be noted that our review of data



Page 19
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

may not always reveal imperfections. We have assumed that the data provided is both accurate and complete. The results of our analysis are dependent on this assumption. If this data or information is inaccurate or incomplete, our findings and conclusions may need to be revised.

- Our conclusions are based on an analysis of the FA application and data and on the estimation of the outcome of many contingent events. Future costs were developed from the historical claim experience and covered exposure, with adjustments for anticipated changes. Our estimates make no provision for extraordinary future emergence of new classes of losses or types of losses not sufficiently represented in historical databases or which are not yet quantifiable.
- While this analysis complies with applicable Actuarial Standards of Practice and Statements of Principles, users of this analysis should recognize that our projections involve estimates of future events, and are subject to economic and statistical variations from expected values. We have not anticipated any extraordinary changes to the legal, social, or economic environment that might affect the frequency or severity of claims. For these reasons, no assurance can be given that the emergence of actual losses will correspond to the projections in this analysis.

Please call us if you have any questions or require additional information.

Sincerely,

Paula Elliott, FCAS, FCIA

Raula L Elliott

Theodore J. Zubulake, FCAS, FCIA



Page 20
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

Appendix #1: Loss Trend Rates

In this appendix we provide additional comments on the loss trend rates selected by FA.

We begin with comments on the general differences in the data and approach used by FA and Oliver Wyman and then provide comments on each of the coverages.

- FA's loss cost trend rates are based on the Industry CV experience for indemnity costs only (since its claim handling costs compensation model differs from that of the rest of the Industry). Oliver Wyman's loss cost trend rates are based on the Industry CV experience for both indemnity costs and claim handling costs (LAE), combined. If the Industry LAE costs are changing at a rate that is close to the rate that the indemnity loss amounts are changing each year, then this difference would have little effect on the selected trend rate.¹² For this application, we generally find the inclusion/exclusion of LAE not to have a material impact on the selected trend rates.
- Both FA and Oliver Wyman independently select the claim count and loss development factors that apply to the Industry CV experience. But the factors selected by FA based on the Industry data as of June 30, 2014 differ from those selected by Oliver Wyman based on the same Industry data. FA's selected development factors contribute to the higher loss trend rates that it calculates compared to the trend rates that we calculate.
- FA bases its selected loss trends on a regression analysis of the Industry CV experience over the past 20 years (1994-2 to 2014-1), with various data exclusions and parameters that it finds reasonable. Oliver Wyman's selected loss trend rates are based on various regression analyses over different time periods spanning ten years or less, with data exclusions and use of parameters that we find reasonable. FA's position is that all data provides information that should be considered in measuring/selecting trends. Our view is that the more recent data is more responsive to the trends over the time period that is most relevant to this filing.
- The OW selected loss trend rates as of June 2014 take into consideration both the prior selected loss cost trend rate (from the loss trend analysis based on Industry data as of December 2013) and the calculated trend rates based on the most recent data as of June



¹² If the LAE costs are changing at a slower/faster rate than the losses, then the calculated loss & LAE trend rate would be lower/higher than a trend rate based only on the losses, all else being equal.

Page 21
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

2014. This approach tempers the changes in the selected loss cost trend rates from review to review - as new experience becomes available each six months from GISA. However, as we explain in our most recent trend report, we do not consider the prior Board approved trend rate in arriving at our recommended loss trend rates as of December 2014 and as a result our more recent trend rate selections are generally higher than those of June 2014.

FA finds there to be statistical evidence that there was a change in cost level around the time of the Bodily Injury reforms introduced in August 2004 for every coverage. FA refers to this as a "scalar change," and calculates a scalar change factor for every coverage within its loss trend regression models. The term "scalar change" is sometimes referred to as a "level change" and means that there was a one-time cost (frequency and/or severity) increase (or decrease), beyond what would be considered to be within the normal bounds of variability, and costs continued to stay at the new level, subject to the annual trend rate thereafter. The following table presents FA's scalar change factors for each coverage, split between frequency and severity.

Table 7

Coverage	Frequency		Severi	ty	Loss Cost*	
	Date of Change	% Change	Date of Change	% Change	% Change	
Bodily Injury	2004-1/2004-2	-32.5%	2004-1/2004-2	-0.5%	-32.8%	
Property Damage*	2003-2/2004-1	-28.0%	2004-1/2004-2	-4.1%	-31.0%	
Accident Benefits*	2003-2/2004-1	-59.8%	2004-1/2004-2	-47.7%	-79.0%	
Collision	2004-1/2004-2	-23.2%	2004-1/2004-2	15.6%	-11.2%	
Comprehensive	2003-2/2004-1	-24.6%	2003-2/2004-1	32.1%	-0.4%	

^{*} Date of change differs between frequency and severity for Accident Benefits and Property Damage

For most coverages, FA selects a different trend rate before and after the scalar changes.

Typically a "shift" in cost level is associated with some event¹⁴ such as a product reform, although in this case while FA's scalar changes are coincident with the 2004 Bodily Injury reforms, FA does not state that its scalar changes are attributed to the 2004 reforms.



¹³ The exceptions to this are Uninsured Auto and Specified Perils.

The reason for a shift in costs is typically due to a product reform; however the reasons for the shift in costs for each coverage are not stated by FA.

Page 22 1 September 2015 Mr. Robert Byrne Board of Commissioners of Public Utilities

We do not agree that loss cost level changes occurred in the 2003 to 2004 period. For example, in the case of Accident Benefits, we find the year-to-year changes in the loss cost amounts (as presented in the table below) from 2003 to 2004 are no more unusual than what occurred in other periods.

Table 8

Accident Benefits								
Year-to-Year Changes in								
Loss	Cost							
As of December 2014								
2001 to 2001	+65%							
2002 to 2003	-8%							
2003 to 2004	+68%							
2004 to 2005	-36%							
2005 to 2006	-64%							
2006 to 2007	+42%							
2007 to 2008	-6%							
2008 to 2009	-18%							
2009 to 2010	-5%							
2010 to 2011	+49%							
2011 to 2012	+29%							
2012 to 2013	+18%							
2013 to 2014	-48%							

In summary, the difference between the trend rates selected by Oliver Wyman and those selected by FA are generally due to different judgments regarding: (1) trend measurement period, (2) selected loss development factors, (3) inclusion/exclusion of loss adjustment expenses (although this does not appear to have a material effect), and (4) FA's application of a level change



Page 23
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

adjustment in the 2003/2004 time period. In this following section we provide additional comments about the loss trend rates selected by FA for each coverage.

Bodily Injury (BI)

- FA separately determines its frequency and severity trend rates based on its regression analysis of its estimate of Industry CV ultimate losses and claim counts by accident half year over the 20-year period ending June 30, 2014. FA selects a loss cost trend of +4.4%, based on a severity trend rate of +5.6%¹⁵ and a frequency trend rate of -1.1%.
- FA presents a likely range from -7.0% to +4.7% around its selected frequency trend rate of -1.1% and a range of +3.4% to +7.4% around its selected severity trend rate of +5.6%. These wide ranges speak to the volatility of the experience and, therefore, the uncertainty of the loss trend rate selections.
- FA's approach to selecting its trend rate is similar to its prior filing (where the loss trends were based on Industry CV experience as of December 2012), except for two differences: (1) FA now finds evidence to support the inclusion of a "seasonality" parameter, whereas it did not in the prior filing, and (2) FA no longer considers 2011-2 to be an outlier (and hence no longer excludes this data point from its analysis). We agree there is evidence of seasonality for Bodily Injury. We agree the 2011-2 data point should be included; and note that FA's decision to now include the 2011-2 data point is an example of the volatility in the estimate of the loss experience how it can change materially with each review.
- Estimates of loss cost trend rates are based on estimates of ultimate claim amounts (how much the claims will eventually settle for) within each accident half-year. Changes in estimates of ultimate claim amounts can increase or decrease the estimated trend rates. We make the following observations regarding FA's estimates of ultimate claim amounts and their impact on FA's selected loss cost trend rate of +4.4%:
 - Using FA's same approach and trend measurement period that it used in its prior filing (2004-2 to 2012-2; and excluding the 2011-2 accident half-year for severity), but using FA's estimates of ultimate claim amounts by accident half-year as of June 2014, decreases FA's loss cost trend rate from +4.4% it calculated in the prior filing, to +3.3%.



¹⁵ FA presents its fitted regression model statistics based on an annual trend rate of +5.4%, but instead selects +5.6%.

Page 24
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

- Excluding from consideration the most recent (and most uncertain) 2014-1 data point, FA estimates would reduce its calculated loss trend rate from +4.4% to +4.1%. This difference speaks to the sensitivity of the loss trend rate when including or excluding a single data point.
- o FA has changed the method it uses to select the loss development factors applied to the Industry data. We asked FA to provide its loss cost trend rate by following the (more traditional) Incurred Method that it has used in the past, and no other changes. FA calculates that its selected loss cost trend rate would decline from +4.4% to +3.6%.
- Based on our estimate of the ultimate claim costs (indemnity and LAE), and the same trend measurement period considered by FA, the loss cost trend rate would be +2.6% instead of the +4.4% calculated and selected by FA. Most of this difference (+1.8 percentage points) is due to FA's higher ultimate claim cost estimates; a small portion of this difference is due to the exclusion of LAE by FA.

Property Damage (PD)

- FA separately determines its frequency and severity trend rates based on a regression analysis of its estimates of Industry CV ultimate claim amounts and claim counts by accident half year over the 20-year period ending June 30, 2014. FA selects a loss cost trend of +3.3%, based on a severity trend rate of +1.9% and a frequency trend rate of +1.4%.
- In its prior analysis, FA chose to exclude the low frequency point for 2004-2, but in this analysis FA includes this low point. If FA had similarly excluded this low point in this current analysis (which is essentially unchanged from the prior analysis), its calculated loss cost trend rate would reduce from +3.3% to approximately +2.8%. (This +2.8% estimate is closer to its prior selected rate of +2.4% based on Industry experience through to December 2012.)
- The difference between FA's selected trend rate (+3.3%) and our updated recommended trend rate (+3.0%) is not material.



Page 25
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

Accident Benefits (AB)16

- FA separately determines its frequency and severity trend rates based on its regression analysis of its estimate of Industry CV ultimate losses and claim counts by accident half year over the 20-year period ending June 30, 2014. FA selects a loss cost trend for the period after the reforms of +9.3% based on a severity trend rate of +9.8% and a frequency trend rate of -0.5%.
- Our lower loss trend rate of +7.0% as of December 2014, compared to our prior estimate of +9.0% as of June 2014 is attributed to, in part, the large decline in the loss cost experience in the second half of 2014, which, due to timing, is not considered by FA.

Collision

- FA separately determines its frequency and severity trend rates based on its regression analysis of its estimate of Industry CV ultimate losses and claim counts by accident half year over the 20-year period ending June 30, 2014. FA selects a loss cost trend of +2.4%; based on a severity trend rate of +0.0% and a frequency trend rate of +2.4%.
- FA's approach to the analysis of the Collision coverage has changed from the prior filing. In the prior filing, FA assumed a change in the trend rate starting the with 2004-2 experience, and excluded the 2004-2 data for both frequency (low point) and severity (high point). In this filing, FA does not assume a change in the trend rate starting with 2004-2, only a change in the level of the frequency and severity; as a result, FA assumes the same trend rate over the entire 20-year period. This change in time period over which FA measures Collision trend appears to be the main reason for change in trend rate from the prior filing (from +0.1% to +2.4%).
- We find a 20-year period not to be sufficiently responsive to the more recent experience. It
 is this difference in the trend measurement period that largely accounts for the difference
 in our respective trend estimates.



¹⁶ In the case of UA, in the prior filing FA used the selected AB trend rate. In this filing FA selects a separate trend rate. Since in many of the accident-half years there is only 1 claim reported (and in some cases no claim reported) we include the UA experience with the AB experience.

Page 26
1 September 2015
Mr. Robert Byrne
Board of Commissioners of Public Utilities

Comprehensive

- FA separately determines its frequency and severity trend rates based on its regression analysis of its estimate of Industry CV ultimate losses and claim counts by accident half year over the 20 year period ending June 30, 2014. FA selects a loss cost trend for the period after the reforms of +1.8%; based on a severity trend rate of +1.0% and a frequency trend rate of +0.8%.
- The difference between FA's selected trend rate of +1.8% and our updated recommended trend rate of +1.5% is not material.



Page 27 1 September 2015 Mr. Robert Byrne Board of Commissioners of Public Utilities

Appendix #2: TPL Claim Count Standard for Full Credibility



Full Credibility Standards

GISA: Commerical Vehicles - Atlantic Provinces as of December 2013

	Accident Year	Severity	Severity Variance	Sev Var/mean^2	probability Std	Normal Value	K	Sample Size Indicated Value	Relative to Collision Ratio
TPL	2009	9,662	1,098,809,677	11.769	0.95	1.96	0.0944	5,505	5.1
	2010	11,030	1,717,876,264	14.121	0.95	1.96	0.0944	6,518	6.0
	2011	10,480	952,678,813	8.674	0.95	1.96	0.0944	4,170	<u>3.9</u>
				11.521					5.0
Collision	2009	4,959	37,072,925	1.508	0.95	1.96	0.0944	1,082	
	2010	5,036	40,419,494	1.594	0.95	1.96	0.0944	1,082	
	2011	4,718	32,023,741	1.439	0.95	1.96	0.0944	1,082	
				1.51	3				

Solve for K with Collision, assuming 1082 full credibility standard and 95% confidence interval $1082=(1.96/k)^2*(1+1.513)$

1082=9.65/K^2

k=(9.65/1082)^.5

0.09445799

Third Party Liability Urban & Rural 2009

Size of Loss Range	Generated Number Of Claims	Loss Amount incl Expenses	Severity	Distribution of counts	Count Distribution * (Severity- mean)^2
Less than \$0	0	0	-	0.00%	-
\$0	202	151,839	752	8.56%	7,629,247
\$1 - \$1000	246	180,881	735	10.42%	9,323,343
\$1001 - \$2000	441	735,114	1,667	18.68%	13,583,724
\$2001 - \$3000	375	991,456	2,644	15.88%	9,055,838
\$3001 - \$4000	247	902,353	3,653	10.46%	4,476,671
\$4001 - \$5000	160	758,584	4,741	6.78%	2,015,534
\$5001 - \$10000	343	2,423,833	7,067	14.53%	1,421,612
\$10001 - \$15000	118	1,513,517	12,826	5.00%	346,137
\$15001 - \$20000	46	886,418	19,270	1.95%	1,604,631
\$20001 - \$25000	25	569,852	22,794	1.06%	1,680,889
\$25001 - \$30000	28	826,351	29,513	1.19%	4,425,648
\$30001 - \$40000	28	1,091,008	38,965	1.19%	9,816,043
\$40001 - \$50000	22	1,038,918	47,224	0.93%	12,776,324
\$50001 - \$75000	29	2,002,754	69,060	1.23%	42,562,503
\$75001 - \$100000	19	1,739,090	91,531	0.80%	53,238,584
\$100001 - \$150000	15	2,052,765	136,851	0.64%	101,917,448
\$150001 - \$200000	6	1,037,990	172,998	0.25%	67,357,072
\$200001 - \$300000	4	1,091,428	272,857	0.17%	116,885,149
\$300001 - \$400000	4	1,450,265	362,566	0.17%	210,361,162
\$400001 - \$500000	1	439,051	439,051	0.04%	77,898,215
\$500001 - \$750000	0	0	-	0.00%	-
\$750001 - \$1000000	1	919,796	919,796	0.04%	350,433,901
\$1000001 - \$2000000	0	0	-	0.00%	-
\$2000001 - \$9999999	0	0	-	0.00%	-
Total	2,360	22,803,263	9,662	99.96%	1,098,809,677
		M	ean Loss Square	d	93,361,966
			Ratio		11.77

Losses over \$1 million excluded

Third Party Liability Urban & Rural 2010

Size of Loss Range	Generated Number Of Claims	Loss Amount incl Expenses	Severity	Distribution of counts	Count Distribution * (Severity- mean)^2
Less than \$0	0	0	_	0.00%	-
\$0	140	93,399	667	6.40%	12,508,540
\$1 - \$1000	257	202,620	788	11.75%	22,565,425
\$1001 - \$2000	394	631,968	1,604	18.02%	30,642,174
\$2001 - \$3000	354	913,415	2,580	16.19%	23,563,662
\$3001 - \$4000	234	838,851	3,585	10.70%	13,090,258
\$4001 - \$5000	138	655,235	4,748	6.31%	6,181,516
\$5001 - \$10000	316	2,229,855	7,057	14.45%	8,322,121
\$10001 - \$15000	104	1,322,053	12,712	4.76%	177,810
\$15001 - \$20000	45	841,978	18,711	2.06%	339,986
\$20001 - \$25000	34	889,818	26,171	1.55%	2,065,099
\$25001 - \$30000	24	724,496	30,187	1.10%	2,650,659
\$30001 - \$40000	32	1,225,118	38,285	1.46%	8,176,488
\$40001 - \$50000	24	1,121,312	46,721	1.10%	11,290,469
\$50001 - \$75000	33	2,086,495	63,227	1.51%	35,612,704
\$75001 - \$100000	23	2,178,992	94,739	1.05%	67,463,471
\$100001 - \$150000	14	1,697,849	121,275	0.64%	72,783,259
\$150001 - \$200000	2	344,763	172,382	0.09%	22,753,152
\$200001 - \$300000	9	2,264,275	251,586	0.41%	231,031,858
\$300001 - \$400000	0	0	-	0.00%	-
\$400001 - \$500000	1	519,920	519,920	0.05%	116,736,206
\$500001 - \$750000	4	2,261,666	565,417	0.18%	554,821,097
\$750001 - \$1000000	1	1,033,981	1,033,981	0.05%	475,100,311
\$1000001 - \$2000000	0	0	-	0.00%	-
\$2000001 - \$9999999	0	0	-	0.00%	-
Total	2,183	24,078,059	11,030	99.82%	1,717,876,264
		Me	an Loss Squa	red	121,656,545
			Ratio		14.12

Losses over \$1 million excluded

Third Party Liability Urban & Rural 2011

Size of Loss Range	Generated	Loss Amount	Severity	Distribution	Count Distribution *
· ·	Number Of	incl Expenses	•	of counts	(Severity- mean)^2
	Claims	•			
Less than \$0	0	0	-	0.00%	-
\$0	160	74,431	465	6.31%	6,328,069
\$1 - \$1000	260	209,672	806	10.25%	9,594,304
\$1001 - \$2000	477	764,353	1,602	18.81%	14,824,359
\$2001 - \$3000	375	1,001,730	2,671	14.79%	9,016,986
\$3001 - \$4000	251	903,917	3,601	9.90%	4,683,432
\$4001 - \$5000	184	848,341	4,611	7.26%	2,499,711
\$5001 - \$10000	375	2,705,942	7,216	14.79%	1,575,689
\$10001 - \$15000	132	1,696,107	12,849	5.21%	292,145
\$15001 - \$20000	71	1,321,680	18,615	2.80%	1,852,797
\$20001 - \$25000	43	994,990	23,139	1.70%	2,717,231
\$25001 - \$30000	30	886,117	29,537	1.18%	4,296,192
\$30001 - \$40000	48	1,767,200	36,817	1.89%	13,128,278
\$40001 - \$50000	33	1,635,823	49,570	1.30%	19,883,867
\$50001 - \$75000	37	2,339,654	63,234	1.46%	40,603,042
\$75001 - \$100000	23	2,084,993	90,652	0.91%	58,293,575
\$100001 - \$150000	21	2,649,565	126,170	0.83%	110,830,316
\$150001 - \$200000	6	1,166,243	194,374	0.24%	80,008,384
\$200001 - \$300000	6	1,611,015	268,503	0.24%	157,513,058
\$300001 - \$400000	3	1,075,956	358,652	0.12%	143,403,334
\$400001 - \$500000	0	0	-	0.00%	-
\$500001 - \$750000	0	0	-	0.00%	-
\$750001 - \$1000000	1	840,000	840,000	0.04%	271,334,044
\$1000001 - \$2000000	0	0	-	0.00%	-
\$2000001 - \$9999999	0	0	-	0.00%	-
Total	2,536	26,577,729	10,480	100.00%	952,678,813
		Me	ean Loss Square	ed	109,834,111
			Ratio	8.67	

Losses over \$1 million excluded

Collision: \$250, \$500 and \$1,000 Deductibles

Urban &	Rural	2009
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Olbali & Kulai	2009				
Size of Loss Range	Generated	Loss And	Severity	Distribution	Count Distribution *
	Number Of	Expense		of counts	(Severity- mean)^2
	Claims	Amount			
Less than \$0	0	0	-	0.00%	-
\$0	102	23090	226	13.51%	3,025,608
\$1 - \$50	11	1223	111	1.46%	342,369
\$51 - \$100	5	1929	386	0.66%	138,489
\$101 - \$150	3	1424	475	0.40%	79,896
\$151 - \$200	12	6666	556	1.59%	308,164
\$201 - \$250	4	3110	778	0.53%	92,625
\$251 - \$300	2	558	279	0.26%	58,013
\$301 - \$400	6	2475	413	0.79%	164,252
\$401 - \$500	9	4384	487	1.19%	238,358
\$501 - \$750	24	17656	736	3.18%	566,923
\$751 - \$1000	22	20586	936	2.91%	471,608
\$1001 - \$2000	116	179767	1,550	15.36%	1,785,561
\$2001 - \$3000	87	221920	2,551	11.52%	668,139
\$3001 - \$4000	71	258779	3,645	9.40%	162,363
\$4001 - \$5000	50	230349	4,607	6.62%	8,195
\$5001 - \$10000	119	851092	7,152	15.76%	758,208
\$10001 - \$15000	59	745433	12,634	7.81%	4,604,066
\$15001 - \$20000	28	496768	17,742	3.71%	6,060,019
\$20001 - \$25000	14	323583	23,113	1.85%	6,111,403
\$25001 - \$30000	5	134530	26,906	0.66%	3,189,945
\$30001 - \$40000	4	126359	31,590	0.53%	3,757,404
\$40001 - \$50000	2	92178	46,089	0.26%	4,481,317
\$50001 - \$75000	0	0	-	0.00%	-
\$75001 - \$100000	0	0	-	0.00%	-
\$100001 - \$150000	0	0	-	0.00%	-
\$150001 - \$200000	0	0	-	0.00%	-
\$200001 - \$300000	0	0	-	0.00%	-
\$300001 - \$400000	0	0	-	0.00%	-
\$400001 - \$500000	0	0	-	0.00%	-
\$500001 - \$750000	0	0	-	0.00%	-
\$750001 - \$1000000	0	0	-	0.00%	-
\$1000001 - \$2000000	0	0	-	0.00%	-
\$2000001 - \$9999999	0	0	-	0.00%	-
Total	755	3743859	4,959	100.00%	37,072,925

Mean Square 24,589,238

Ratio 1.507689084

Collision: \$250, \$500 and \$1,000 Deductibles

Urban & Rural	2010				
Size of Loss Range	Generated	Loss And	Severity	Distribution	Count Distribution *
	Number Of	Expense		of counts	(Severity- mean)^2
	Claims	Amount			
Less than \$0	0	0	-	0.00%	-
\$0	91	15717	173	12.67%	2,997,999
\$1 - \$50	16	2354	147	2.23%	532,682
\$51 - \$100	7	767	110	0.97%	236,642
\$101 - \$150	9	1170	130	1.25%	301,736
\$151 - \$200	3	1333	444	0.42%	88,104
\$201 - \$250	5	2331	466	0.70%	145,445
\$251 - \$300	5	1756	351	0.70%	152,857
\$301 - \$400	7	3129	447	0.97%	205,337
\$401 - \$500	7	3809	544	0.97%	196,737
\$501 - \$750	23	18035	784	3.20%	579,197
\$751 - \$1000	26	24400	938	3.62%	608,079
\$1001 - \$2000	90	150103	1,668	12.53%	1,422,297
\$2001 - \$3000	100	259889	2,599	13.93%	827,438
\$3001 - \$4000	64	227409	3,553	8.91%	196,048
\$4001 - \$5000	35	157913	4,512	4.87%	13,411
\$5001 - \$10000	128	928879	7,257	17.83%	879,043
\$10001 - \$15000	48	572780	11,933	6.69%	3,179,713
\$15001 - \$20000	27	484726	17,953	3.76%	6,273,783
\$20001 - \$25000	10	220186	22,019	1.39%	4,016,689
\$25001 - \$30000	8	218388	27,299	1.11%	5,522,064
\$30001 - \$40000	7	231846	33,121	0.97%	7,689,684
\$40001 - \$50000	2	89149	44,575	0.28%	4,354,509
\$50001 - \$75000	0	0	-	0.00%	-
\$75001 - \$100000	0	0	-	0.00%	-
\$100001 - \$150000	0	0	-	0.00%	-
\$150001 - \$200000	0	0	-	0.00%	-
\$200001 - \$300000	0	0	-	0.00%	-
\$300001 - \$400000	0	0	-	0.00%	-
\$400001 - \$500000	0	0	-	0.00%	-
\$500001 - \$750000	0	0	-	0.00%	-
\$750001 - \$1000000	0	0	-	0.00%	-
\$1000001 - \$2000000	0	0	-	0.00%	-
\$2000001 - \$9999999	0	0	-	0.00%	-
Total	718	3616069	5,036	100.00%	40,419,494

Mean Square 25,364,396

Ratio 1.593552391

Collision: \$250, \$500 and \$1,000 Deductibles

Cina of Lasa Damas	Commented	Lasa Assal	C	Distribution	Count Distribution *
Size of Loss Range	Generated Number Of	Loss And Expense	Severity	Distribution	(Severity- mean)^2
		•		of counts	(Seventy- mean)^2
th	Claims 0	Amount		0.009/	
Less than \$0		10373	-	0.00%	2 700 402
\$0	106	19373	183	13.17%	2,708,402
\$1 - \$50	14	4410	315	1.74%	337,158
\$51 - \$100	4	1047	262	0.50%	98,675
\$101 - \$150	5	632	126	0.62%	130,950
\$151 - \$200	6	1217	203	0.75%	151,952
\$201 - \$250	2	666	333	0.25%	47,772
\$251 - \$300	4	1381	345	0.50%	95,012
\$301 - \$400	14	4976	355	1.74%	330,994
\$401 - \$500	9	3676	408	1.12%	207,642
\$501 - \$750	27	19710	730	3.35%	533,436
\$751 - \$1000	31	27081	874	3.85%	569,156
\$1001 - \$2000	115	180260	1,567	14.29%	1,417,985
\$2001 - \$3000	94	242999	2,585	11.68%	531,229
\$3001 - \$4000	83	299577	3,609	10.31%	126,729
\$4001 - \$5000	60	278083	4,635	7.45%	517
\$5001 - \$10000	138	1019596	7,388	17.14%	1,222,426
\$10001 - \$15000	49	629482	12,847	6.09%	4,021,859
\$15001 - \$20000	22	402647	18,302	2.73%	5,043,009
\$20001 - \$25000	10	231124	23,112	1.24%	4,203,147
\$25001 - \$30000	6	162694	27,116	0.75%	3,739,041
\$30001 - \$40000	1	33445	33,445	0.12%	1,025,142
\$40001 - \$50000	3	128628	42,876	0.37%	5,426,205
\$50001 - \$75000	2	105300	-	0.25%	55,304
\$75001 - \$100000	0	0	-	0.00%	-
\$100001 - \$150000	0	0	-	0.00%	-
\$150001 - \$200000	0	0	-	0.00%	-
\$200001 - \$300000	0	0	-	0.00%	-
\$300001 - \$400000	0	0	-	0.00%	-
\$400001 - \$500000	0	0	-	0.00%	-
\$500001 - \$750000	0	0	-	0.00%	-
\$750001 - \$1000000	0	0	-	0.00%	-
\$1000001 - \$2000000	0	0	-	0.00%	-
\$2000001 - \$9999999	0	0	-	0.00%	-
Total	805	3798004	4,718	100.00%	32,023,741

Mean Square 22,259,688

Ratio 1.438642839