FINANCIAL SERVICES REGULATORY AUTHORITY OF ONTARIO

Territory Rating Review Report

October 28, 2022

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Commitment Beyond Numbers

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October 28, 2022

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RE: Territory Rating Review Report

Dear Mr. Wang:

Attached is the report prepared by Pinnacle Actuarial Resources, Inc. (Pinnacle) regarding the territory rating regulatory review for Financial Services Regulatory Authority (FSRA).

Roosevelt C. Mosley, Jr., FCAS, MAAA, CSPA, is responsible for the content and conclusions set forth in the report. I am a Fellow of the Casualty Actuarial Society and a member of the American Academy of Actuaries, and am qualified to render the actuarial opinion contained herein. It has been a pleasure working with you and your team to complete this study. I remain available for any questions or comments you have regarding the report and its conclusions.

Respectfully Submitted,

Roosevelt C. Mosley, Jr., FCAS, MAAA, CSPA
Principal and Consulting Actuary

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Financial Services Regulatory Authority of Ontario

Territory Rating Review Report

EXECUTIVE SUMMARY

Financial Services Regulatory Authority of Ontario (FSRA) has engaged Pinnacle Actuarial Resources, Inc. (Pinnacle) to perform a review of FSRA's current territory definition guidelines and bulletins and to provide recommendations and assist FSRA with building a principles-based approach/framework for future territory rating guidance.

FSRA has committed to being a principles-based regulator that focuses on ensuring proper market outcomes. To this end, FSRA has developed rate regulation principles to guide the regulation of development of rates. These principles are still in consultation and thus are not finalized yet. The principles are:

- Consumer-focus
- Sustainability
- Transparency and Disclosure
- Simplicity
- Responsiveness
- Innovation

In addition to reviewing current FSRA territory requirements, Pinnacle has also reviewed approaches insurance companies are taking to satisfy the requirements. While there does appear to be a significant amount of innovation occurring in the development of territories, the benefit of this innovation is not being realized by consumers as the implementation of this innovation is limited as companies must comply with current FSRA requirement.

Ultimately, FSRA will need to decide on a balance between the key principles. It will not be possible to fully satisfy all principles simultaneously, so FSRA will have to determine which principles are most important. The evaluation of current requirements and proposed changes should be evaluated in the context of these principles and how they should be balanced.

Overall, there are a number of current FSRA requirements that are negatively impacting Simplicity and Innovation. The Simplicity principle attempts to focus on the output, while many of the FSRA requirements attempt to regulate the inputs. Also, as there are many limitations on how territory rates can vary, it limits the benefits of innovation as insurance companies have to abide by limiting requirements.

Several of the current FSRA requirements have a positive impact on Transparency and Disclosure, as the details of the territory development process must be filed and supported for regulators to review. These same requirements, however, are in conflict with the Simplicity principle, highlighting the balance that FSRA must strike in developing a new principles-based approach.

None of the current FSRA requirements impact the principle of Responsiveness. Responsiveness is not necessarily related to specific territory regulations, but more related to how FSRA operates. This principle will be incorporated in the process of developing regulations as FSRA consults with the industry on the proposed guidance.

Pinnacle also reviewed "Auto Insurance Territory Analysis" data received from FSRA, representing Ontario industry premium and loss information. Within coverages, the variation in loss ratio across Toronto is significant. If territory rates across all of Toronto were adequate, we would expect to see more even loss ratios across Toronto. In addition, the range of variation in loss ratios by coverage differs as well. This also suggests that using one set of definitions for all coverages is also limiting insurance company ability to match premiums to the risk of loss by coverage.

Pinnacle also reviewed territory regulations in other jurisdictions in North America.

In most states in the United States, there are no specific rules applicable to territory rating. Rather, territories are subject to the same regulatory process as most other rating variables. The jurisdictions that have specific requirements are the states of California, Connecticut, Illinois, Michigan, and New Jersey and the province of Alberta.

There is no publicly available information to fully analyze the impact of these restrictions. However, we do have two points of reference that show the negative impacts of regulation that attempts to restrict territory rates in high-cost areas. In Michigan, the territory rate limits lasted for only five years before they was repealed because of the loss and availability issues it was causing in the market. The other example is Alberta, where significant issues in the market led to the removal of the territory rate restrictions. Restrictions in other states like California, New Jersey and Connecticut still continue, however, and the markets still appear to be functioning effectively. Additional reviews of loss experience by geography may provide more insight into whether these markets truly are functioning well.

Moving from a rules-based approach to a principles-based approach to regulation will have potential implications for the principles outlined earlier. Removing the restrictions on territory rating would likely lead to more evidence-based rates and would also positively impact a company's likelihood of innovation, which would result in increased customer choice and competition. Conversely, relaxing some of the current restrictions might have negative impacts on Transparency and Disclosure if insurance companies are not required to provide as much information up-front.

A principles-based regulation approach includes the development of outcome-focused tests to determine if the desired outcomes are being achieved. The specific details of the principles-based regulation and the outcome-focused tests will be developed as part of the next phase of this engagement, but the idea would be to help ensure that the territory definitions being implemented are consistent with the principles established by FSRA.

For each identified principle, we will determine potential measures or tests for determining whether the territories are meeting the identified requirements. As an example, for the risk-based principle, measures such as the change in indications over time, or a review of the emerging experience since implementation would be options.

In addition to the outcome measures related specifically to territory, there are several outcome focused tests FSRA should consider that would be apply more broadly than just to territorial rating. These outcome tests include:

- **An overall rate change cap**
- **Development of fairness criteria**
- **Development of affordability criteria**

PURPOSE & SCOPE

Financial Services Regulatory Authority of Ontario (FSRA) has engaged Pinnacle Actuarial Resources, Inc. (Pinnacle) to:

- perform a review of FSRA's current territory definition guidelines and bulletins,
- research territory definition/grouping techniques and issues across North America,
- provide recommendations and assist FSRA with building a principles-based approach/framework for future territory rating guidance,
- identify potential risks (such as unfair discrimination) in defining territory rating practices, and
- provide risk mitigation in detailing how FSRA reviews insurers' territory definition model/proposal to ensure they are actuarially justified and not unfairly discriminatory.

This review includes data analysis, research and review of territory modeling and related techniques, jurisdictional scans, insights, and recommendations to FSRA for the ultimate purpose of establishing a principles-based and outcome focused guidance for supervising territory rating for Ontario personal auto Insurance.

DISTRIBUTION AND USE

This report is being provided to FSRA for its use and the use of makers of public policy in developing revised territory rating regulatory guidelines. Permission is hereby granted for its distribution on the condition that the entire report, including the exhibits and appendices, is distributed rather than any excerpt. We are available to answer any questions that may arise regarding this report.

Any third parties receiving the report should recognize that the furnishing of this report is not a substitute for their own due diligence and should place no reliance on this report or the data contained herein that would result in the creation of any duty or liability by Pinnacle to the third party.

Our conclusions are predicated on several assumptions as to future conditions and events. These assumptions, which are documented in subsequent sections of the report, must be understood to place our conclusions in their appropriate context. In addition, our work is subject to inherent limitations, which are also discussed in this report.

RELIANCES AND LIMITATIONS

In this report, we have included a list of data sources Pinnacle has relied upon in our analysis. We have relied on the accuracy of these data sources in making our recommendations and drawing our conclusions. If it is subsequently discovered that the underlying data or information is erroneous, then our recommendations and conclusions would need to be revised accordingly.

We have relied on a significant amount of data and information from external sources without audit or verification. However, we did review as many elements of the data and information as practical for reasonableness and consistency with our knowledge of the automobile insurance industry. It is possible that the historical data used to develop our estimates may not be predictive of future claim experience. We have not anticipated any extraordinary changes to the legal, social or economic environment which might affect the number or cost of claims.

Pinnacle is not qualified to provide formal legal interpretation of Ontario legislation or FSRA policies and procedures. The elements of this report that require legal interpretation should be recognized as reasonable interpretations of the available statutes, requirements and administrative rules.

DATA

Pinnacle reviewed the following data elements as part of our research and analysis.

1. "Automobile Insurance Experience, Special FSA Analysis: Kxx, Lxx, Mxx, Nxx and Pxx" – General Insurance Statistical Agency, 2021/12.
2. "Private Passenger Automobile Filing Guidelines – Major" – Financial Services Commission of Ontario, October 2016.
3. "Technical Notes for Automobile Insurance Rate and Risk Classification Filings" – Financial Services Commission of Ontario, October 2016.
4. FSRA - Auto Product PBR deck_.pptx
5. "Proposed Principles-Based Regulation" – Financial Services Regulatory Authority of Ontario. These guidelines are still in the consultation stage, and thus are not yet finalized.
6. Proposed Territory Changes in Recent Rate Filings
7. "Automobile Insurance Territory Analysis - Financial Services Regulatory Authority of Ontario
8. United States General Accounting Office. Report to Congressional Requesters. "Auto Insurance: State Regulation Affects Cost and Availability." August 1996.
9. FSRA Standard Filing Requirement No. AU0126APP (https://www.fsrao.ca/industry/auto-insurance/regulatory-framework/guidance-auto-insurance/standard-filing#appendix1)

PRINCIPLES-BASED REGULATION BACKGROUND

FSRA was established as an independent regulatory agency in Ontario. FSRA is designed to respond to a rapidly evolving financial services sector by:

- **promoting high standards of business conduct,**
- **fostering strong, sustainable, competitive and innovative financial services sectors,**
- **responding to changes in the financial services landscape on a timely basis where possible, and**
- **promoting good administration of pension plans.**

FSRA has committed to being a principles-based regulator that focuses on ensuring proper market outcomes. Principles-based regulation facilitates a regulator's ability to:

- **respond more quickly to technological changes, consumer and beneficiary needs, and disruptions in the financial services landscape,**
- **more effectively focus on desired regulatory outcomes and objectives to be achieved, and**
- **reduce regulatory burden through a more flexible regulatory approach, which allows regulated entities to determine how to best achieve adherence with outcomes based on their size, complexity, and risk profile.**

FSRA has developed a set of principles to guide its regulatory approach. These principles are still in consultation and thus are not finalized yet. These principles are separate and from the Rate Regulation Principles. The principles are:

1. **Outcome-Focused – FSRA will focus its regulatory activities on the outcomes it seeks to achieve for consumers and pension plan beneficiaries, regulated entities and the sectors based on the statutory objects in the FSRA Act, which will be used as an overlay to the interpretation of the sector statutes.**

2. **Innovative – FSRA will continue to develop its own culture and capabilities in a manner that enables it to fulfill its objects, which specifically includes facilitating innovation and transformation in the sectors it regulates.**

3. **Consumer-Centric – In formulating its regulatory approach toward regulated entities and individuals, FSRA will focus on impact on consumers and pension plan beneficiaries. FSRA Rules and guidance strive to reflect the interests and needs of consumers.**

4. **Risk-Based – FSRA will direct its resources to the issues and regulated entities and individuals that pose the highest risk. FSRA's risk assessment will consider the size, complexity, nature of the regulated entity, and where non-compliance or the inability to achieve the desired outcomes, will result in the most harm to consumers or pose the greatest threat to FSRA's ability to execute against its statutory objects.**

5. **Transparent – FSRA will communicate its expectations and/or requirements, as well as its activities and performance to stakeholders. FSRA will design Rules and guidance that reference the applicable principles against which FSRA will supervise and identify the specific outcomes FSRA is seeking to achieve.**

6. **Collaborative – FSRA will engage with all stakeholders and leverage public consultations to ensure that its regulatory activities reflect the viewpoints and needs of its stakeholders, which include the interests of consumers and pension plan beneficiaries.**[1]

As part of the development of principles-based regulation, FSRA would like to update territory rating regulatory guidelines. To accomplish this, FSRA will need to develop principles associated with territory definitions, understand what regulatory steps can be taken related to territory to achieve those principles, and quantify measurable outcomes to determine if the principles are being achieved.

[1] "Proposed Principles-Based Regulation" – Financial Services Regulatory Authority of Ontario.

CURRENT FSRA TERRITORY RATING REQUIREMENTS

Current FSRA territory rating requirements include the following rules:

- **Methodology**: FSRA does not require insurers to use a specific ratemaking methodology. Insurers are required to provide adequate actuarial documentation and support for the rate levels subject to prior approval.

- **Territorial Indications**: Territorial indications must be provided, and the territorial ratemaking process must be outlined in detail in every major filing, even if the insurer is not proposing territorial rate changes. However, when companies make major filings, they can request an exemption from filing territory indications when not making changes to territorial differentials. FSRA has typically granted these exceptions. Also, as part of a Standard Filing, insurance companies can change territorial differentials without filing support if the change results in no more than an overall 5% increase in any 12-month period, and no one consumer receives more than a 15% increase.

- **General Approach to Calculating Territory Differentials**: The approach to calculating territory differentials is expected to remain reasonably constant over the years for the insurer. Any change in either the approach or the underlying data from the prior rate filing should be disclosed and supported. Costs must be fairly allocated between territories, and rates for newly formed adjoining territories should not vary by more than +/-10%.

- **Credibility**: Credibility procedures must be disclosed and supported. Territories should be based on a minimum of three years of company data and at least 2,500 annualized average vehicles over the three-year period where a unique territory definition is proposed.

- **Proposed Changes**: Proposed changes are expected to be in the direction of the indication, as well as within +/-10% of the current factor. Changes are required to be in the direction of the indication and within +/-10% of the indication for all coverages, as well as on an overall basis.

- **Large Losses**: Large claims should be capped in establishing territorial rates, but no specific guidance is provided.

- **Limitation on the Number of Territories**: There can be no more than 55 territories in the province, and a maximum of 10 territories in Toronto.

- **Contiguity**: Territories must be contiguous, and bodies of water are not appropriate to use to establish a contiguous area.

- **Common Definition**: A common territorial definition must be used for all coverages.

- **Maps**: Filing must include colored maps showing current and proposed boundaries if there are any territory changes.

- **FSA Note**: Insurers should be aware not to rely exclusively on Canada Post's Forward Sorting Area (FSA) or postal code assignments when creating territories, as the way Canada Post assigns postal codes and FSAs may introduce issues of non-contiguity. In any case, whenever territory definitions are changed, an attestation of contiguity may be required.

OVERVIEW OF CURRENT TERRITORY DEVELOPMENT TECHNIQUES IN ONTARIO

In addition to reviewing current FSRA territory requirements, Pinnacle has also reviewed approaches insurance companies are taking to satisfy the requirements. We have reviewed territory filings from four insurance companies and summarize the review of these filings here. All identifying information was removed from the filing documentation Pinnacle reviewed.

Data

Companies use different experience period lengths for developing territories.

- One company used 12 years of experience for Accidents Benefits and Third Party Liability coverages, and used four years of experience for Collision, Comprehensive and Direct Compensation Property Damage (DCPD)
- One company used five years of experience for all coverages, and capped losses for long tailed coverages
- One company used five years of data and capped large losses for all coverages
- One company used three years of data

Three of the companies reviewed also used a standard training and testing approach to validate the territory definitions developed.

In additional to using internal company data, companies also used external data to supplement the analysis. These external data sources included:

- Census
- Traffic density
- Road data
- Crime statistics
- Proximity measures
- Environmental data
- Industry experience

All companies indicated that ethically sensitive data was not included in the analysis.

Clustering Methodology

A variety of methods were used by insurance companies to develop territories. These methods included:

- Extreme Gradient Boosting

- Data analyzed either separately at the frequency and severity level, or at the combined pure premium level.
- Smoothing applied to lessen the differences between neighboring geographical areas
- Adjusted proposed relativities based on a review of competitive position

Satisfying Clustering Constraints

To satisfy the FSRA territory requirements, approaches used by companies included:

- Increasing the credibility requirements for clustering algorithms to meet the requirement for the number of territories in Toronto and Ontario
- SKATER: clustering algorithm that creates contiguous territories and allows the use of parameters to meet FSRA territory requirements.
- MaxP clustering
- Agglomerative clustering

Currently, insurance companies are using a variety of methodologies and multiple data sources to develop territories, and then are applying the FSRA territory requirements to constrain the results to satisfy the requirements. While there does appear to be a significant amount of innovation occurring in the development of territories, the benefit of this innovation is not being realized by consumers as the implementation of this innovation is significantly limited.

PRINCIPLES FOR TERRITORY REGULATION

To implement a principles-based approach to territory regulation, FSRA will need to identify which principles are important for territory ratemaking. FSRA has proposed overall rate regulation principles as outlined below.

FSRA Rate Regulation Principles

The FSRA rate regulation principles are Consumer-Focus, Sustainability, Transparency and Disclosure, Simplicity, Responsiveness, and Innovation.

Consumer Focus

The Consumer Focus consists of four elements:

- Risk-Based: resources are focused on consumer outcomes and market health; regulation is transparent, anchored in public policy objectives and proportionate to objectives; and assessment of regulation is relative to public policy objectives
- Competition and Choice: insurers can bring forward new business or pricing models that create more choice for the consumer and a more competitive marketplace
- Accountable: insurers are accountable for their business, business practices, pricing models and related inputs
- Fair: creating models are free of bias and unfair discrimination as defined by public policy objectives.

Sustainability

Sustainability consists of the following two elements:

- Adequate: FSRA's rate regulation framework provides for a rate adequate market with an expectation that insurers effectively manage claims costs and expenses. The marketplace supports competition, consumer choice and innovation.
- Evidence-Based: Insurers attribute the costs resulting from physical damage and injury claims to those generating the expense. Pricing decisions are actuarially sound and supported by appropriate evidence and sound business decisions. Evidence-based pricing provides a signal to consumers, markets and stakeholders about the underlying risk and creates an incentive for risk mitigation.

Transparency and Disclosure

Transparency and disclosure consist of the following two elements:

- Open: FSRA publicly discloses its guidance, standards and the public policy basis for rate regulation. Rating models, including those employing advanced methods (such as machine learning and artificial intelligence), are subject to accepted governance practices and available for regulatory review.
- Comprehensible: FSRA's guidance processes and standards are clear and consistent. Insurers know how to meet regulatory requirements. Factors which impact individual premiums and changes to that premium over time are explainable to the consumer.

Simplicity

Simplicity includes:

- Low-Burden: Rate regulation requirements are proportionate to the rates and risk classification systems proposed. FSRA's oversight will focus on outputs (price) over inputs, costs and methodology. Regulatory guidance, direction and decisions are consistent with the objective of enabling a competitive marketplace and consistent with stated public policy objectives.
- Consistent: The basis for FSRA's decisions is reasonable, consistent and understood.

Responsiveness

Responsiveness involves:

- Collaborative: FSRA engages with, and encourages, stakeholder input to facilitate continuous improvement of the rate regulation framework.
- Timely: Insurers receive timely decisions from FSRA and understand how FSRA prioritizes its work.

Innovation

Innovation means that FSRA's rate regulation framework permits experimentation that benefits consumers by providing greater choice, convenience, and ease of use. The regulatory framework is flexible and adaptable to technological changes and consumer needs. FSRA also applies risk-based principles to monitor and address the impact of new products and models.

Balancing Key Principles

Ultimately, FSRA will need to decide on a balance between the key principles. It will not be possible to fully satisfy all principles simultaneously, so FSRA will have to determine which principles are most important. As an example, if companies implement rates that are more closely based on loss costs, it may decrease the likelihood that rates will remain stable. The evaluation of current requirements and proposed changes should be evaluated in the context of these principles and how they should be balanced.

REVIEW OF CURRENT FSRA TERRITORY REQUIREMENTS

As FSRA endeavors to develop revised territory requirements in a principles-based environment, it will be useful to understand how current FSRA requirements impact the desired principles for the Ontario market. The table below outlines the current FSRA requirements and how they relate to the principles outlined in the section titled Principles for Territory Regulation.

Table 1: Review of Current FSRA Territory Requirements

Current Requirements	Consumer Focus	Sustainability	Transparency and Disclosure	Simplicity	Responsiveness	Innovation
Methodology FSRA does not require insurers to use a specific ratemaking methodology. Insurers are required to provide adequate actuarial documentation and support for the rate levels subject to prior approval.	This does not generally have an impact on Consumer Focus.	Providing flexibility to insurers to use different methodologies enhances the ability of territory pricing to be evidence based.	Requiring adequate actuarial documentation increases transparency and disclosure.	Requiring adequate actuarial documentation increases the burden on insurance companies.	No impact.	No impact.
Territorial Indications Territorial indications must be provided, and the territorial ratemaking process must be outlined in detail in every major filing, even if the insurer is not proposing territorial rate changes.	This does not generally have an impact on Consumer Focus.	Requiring a major filing every three years will increase the likelihood that territory rates are evidence-based, as it requires insurance companies to evaluate the rate adequacy more frequently. Providing exemptions to the requirement if territory rates are not changing potentially decreases the likelihood that territory rates are evidence-based.	Requiring a major filing every three years will increase Transparency and Disclosure.	Requiring detail in major filings increases the burden on insurance companies.	No impact.	No impact.
Territory Differentials	The expectation that the approach is to remain reasonably	The expectation that the approach remain reasonably consistent over	No impact.	Limiting territory relativity does not	No impact.	Benefits of experimentation may be limited if there are limits on

Current Requirements	Consumer Focus	Sustainability	Transparency and Disclosure	Simplicity	Responsiveness	Innovation
The approach is expected to remain reasonably constant over the years for the insurer. Any change in either the approach or the underlying data from the prior rate filing should be disclosed and supported. Costs must be fairly allocated between territories, and the rates for newly formed adjoining territories should not vary by more than +/-10%.	consistent over the years may limit the ability of insurance companies to bring forward new pricing models.	the years may discourage insurance companies from innovating if they are concerned newly introduced techniques might not be approved by regulators. This may result in premiums, at least temporarily, to deviate from evidence-based values. Similar consequences can result from the 10% limitation in the rate differentials between newly formed territories.		focus on the outputs.		how much rates can vary.
Credibility Credibility procedures must be disclosed and supported. Territories should be based on a minimum of three years of company data and at least 2,500 annualized average vehicles over the three-year period where a unique territory definition is proposed.	May help ensure insurance company models are free of bias.	The use of credibility can both enhance and detract from evidence-based pricing. If the credibility standard is set too high, it could prevent insurers from reflecting differences in expected loss costs. If it is set too low, proposed territory rating factors may react inappropriately to random fluctuations in experience.	No impact.	Requirement for credibility does not focus on the outputs.	No impact.	No impact.
Proposed Changes Rebased indicated and proposed changes are expected to be in the direction of the indication as well as within +/-	This does not generally have an impact on Consumer Focus.	The expectation that proposed changes are expected to be in the direction of the indication improves evidence-based pricing. The	No impact.	Focus on limiting territory relativity does not focus on the outputs.	No impact.	Benefits of experimentation may be limited if there are limits on how much rates can vary.

Current Requirements	Consumer Focus	Sustainability	Transparency and Disclosure	Simplicity	Responsiveness	Innovation
10% of the current factor.		limitation of 10% on proposed changes, however, limits the ability to base prices fully on risk.				
Large Losses Large claims should be capped in establishing territorial rates	May help ensure insurance company models are free of bias.	Capping large losses improves evidence-based pricing as it avoids reliance on large claims that may not necessarily be reflective of future experience.	No impact.	Focus on limiting large losses does not focus on the outputs.	No impact.	No impact.
Limitation on Number of Territories There can be no more than 55 territories in the Province, and a maximum of 10 territories for Toronto.	May limit choice and competition.	Limiting the number of territories may limit the ability of insurers to differentiate fully between areas with different expected costs, thus limiting the ability of prices to fully reflect evidence-based rates.	No impact.	Focus on limiting the number of territories does not focus on the outputs.	No impact.	Benefits of experimentation may be limited if there are limits on the number of territories. This requirement will also not be flexible or adaptable in the future.
Contiguity Territories must be contiguous, and bodies of water are not appropriate to use to establish a contiguous area.	May limit choice and competition	The contiguity requirement limits the ability of insurers to differentiate fully between areas with different expected costs, thus limited the ability of prices to fully reflect evidence-based rates.	No impact.	Focus on contiguity does not focus on the outputs.	No impact.	Benefits of experimentation may be limited if there is a contiguity requirement. This requirement will also not be flexible or adaptable in the future.
Common Definition A common territorial definition must be used for all coverages.	May limit choice and competition	Requiring common definitions by coverage may limit the ability of insurers to charge evidence-based rates by coverage.	No impact.	Requiring common definitions does not focus on the outputs.	No impact.	Requiring common definitions by coverage will not impact stability.

Current Requirements	Consumer Focus	Sustainability	Transparency and Disclosure	Simplicity	Responsiveness	Innovation
Maps Filing must include colored maps showing current and proposed boundaries if there are any territory changes.	No impact	No impact	Requiring maps will increase Transparency and Disclosure.	No impact.	No impact	No impact

Overall, there are a number of current FSRA requirements that are negatively impacting Simplicity and Innovation. The Simplicity principle attempts to focus on the output, while many of the FSRA requirements attempt to regulate the inputs. Also, as there are many limitations on how territory rates can vary, it limits the benefits of innovation as insurance companies have to abide by limiting requirements.

There are several current FSRA requirements that have a negative impact on the Consumer Focus rate regulation principle. Several of the current requirements restrict the ability of the proposed territory rates to reflect the indicated territory rates. This may limit competition in certain segments of the market, as companies may be less like to compete for business if they feel the rates are inadequate. This leads to decreased choice for consumers. Even though the credibility and large loss capping requirements may help decrease bias, the positive impacts do not offset the potential negative impacts.

Several of the current FSRA requirements have a positive impact on Transparency and Disclosure, as the details of the territory development process must be filed and supported for regulators to review. These same requirements, however, are in conflict with the Simplicity principle, highlighting the balance that FSRA must strike in developing a new principles-based approach.

None of the current FSRA requirements impact the principle of Responsiveness. Responsiveness is not necessarily related to specific territory regulations, but more related to how FSRA operates. This principle will be incorporated in the process of developing regulations as FSRA consults with the industry on the proposed guidance.

Ontario Data

To evaluate the current FSRA territory requirements, Pinnacle also reviewed “Auto Insurance Territory Analysis” data received from FSRA, representing Ontario industry premium and loss information. This data allows us to analyze historical experience to determine if some of the potential outcomes of the FSRA territory requirements describe above are being realized in the market. Due to the limitations of the data, not all potential outcomes could be analyzed. We were able, however, to analyze the

experience of various areas in Toronto to determine if the limitation in the number of territories was causing differences in loss ratios, and also reviewing the experience by coverage to determine if requiring the same territory definitions by coverage is creating challenges in achieving evidence-based rates by coverage.

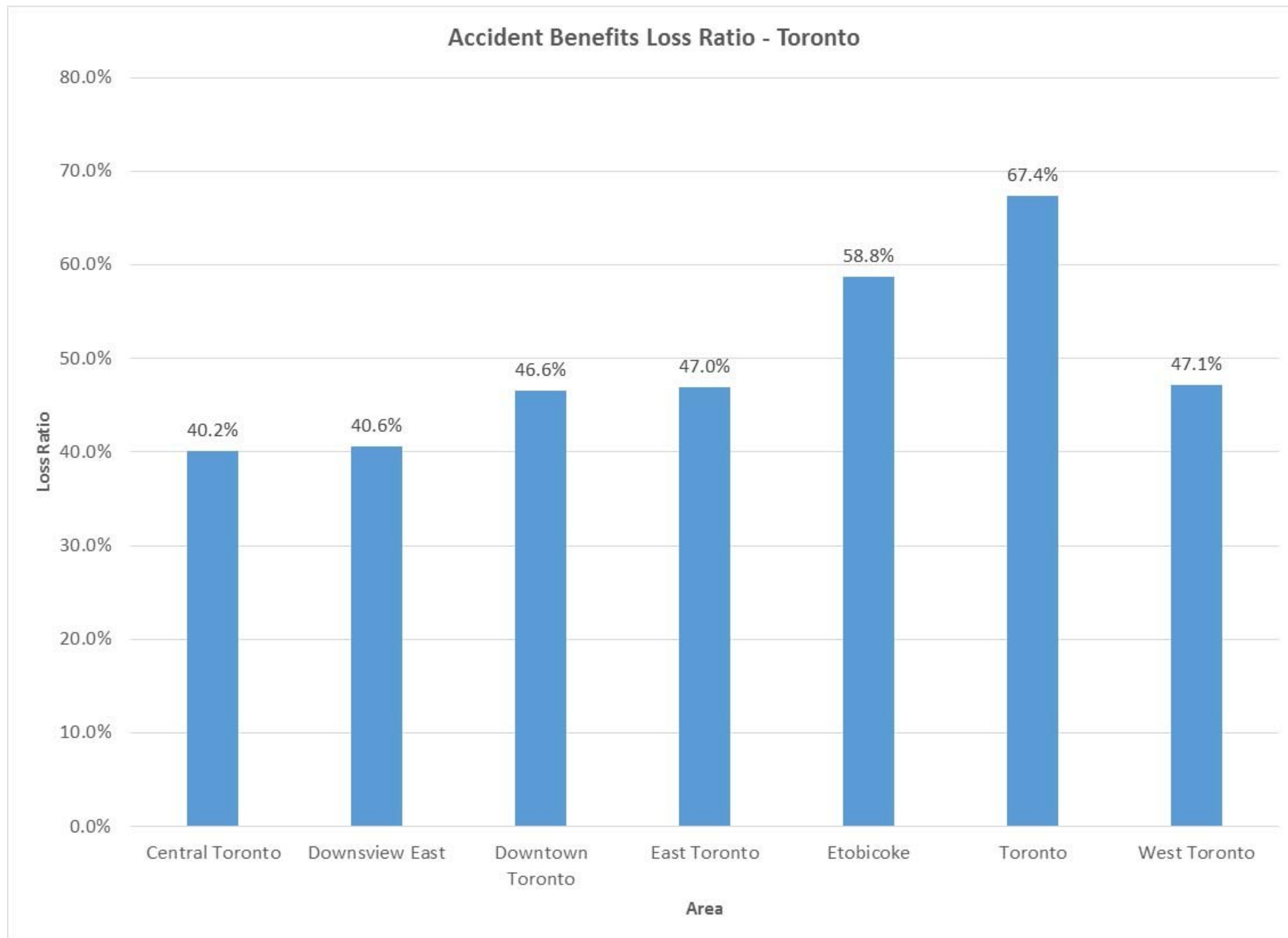
We used definitions of Outwards Codes for Toronto from worldpostalcode.com to define these nine areas in Toronto:

- Central Toronto
- Downsview East
- Downtown Toronto
- Downtown Toronto Stn A Po Boxes 25 The Esplanade
- East Toronto
- East Toronto Business Reply Mail Processing Centre 969 Eastern
- Etobicoke
- Toronto
- West Toronto

Ultimately, the credibility associated with Downtown Toronto Stn A Po Boxes 25 The Esplanade and East Toronto Business Reply Mail Processing Centre 969 Eastern was not sufficient, so we removed those territories from the analysis.

Chart 1 below shows the Accident Benefits loss ratio for each of these areas based on data from accidents years 2017 – 2021.

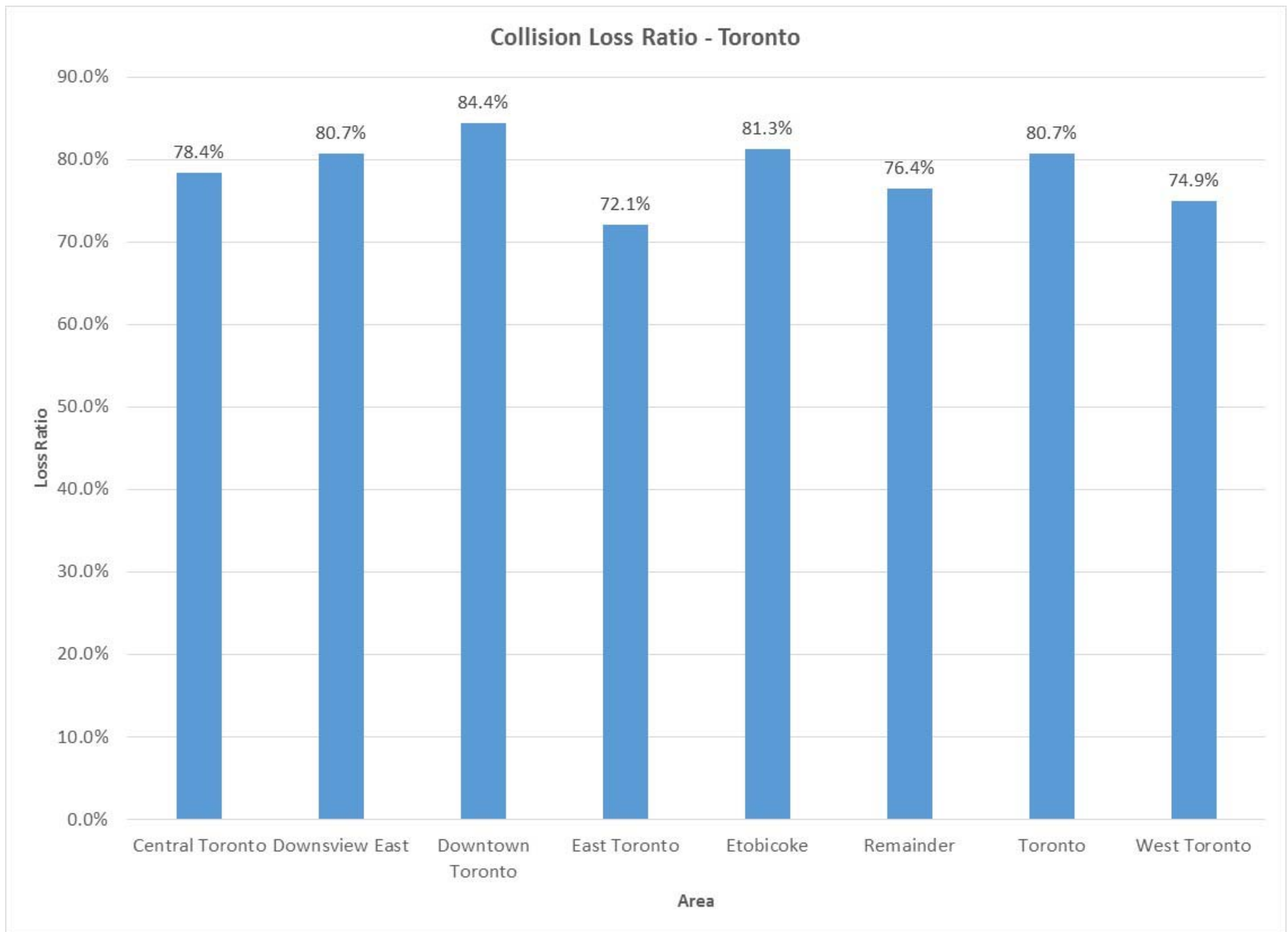
Chart 1: Accident Benefits Toronto Loss Ratios



As can be seen from this chart, there is a significant variation in loss ratio based on the area of Toronto identified. This suggests that there may be support for the conclusion that the limitation in territories may be causing a variation in loss ratios in the Toronto area, as only using 10 territories in Toronto does not allow insurance companies to adequately reflect loss costs in all of Toronto. For Accidents Benefits, the loss ratio varies from 40.2% to 67.4%, a range of 27.2%.

Chart 2 shows the Collision loss ratio for each of these areas based on data from accidents years 2017 – 2021.

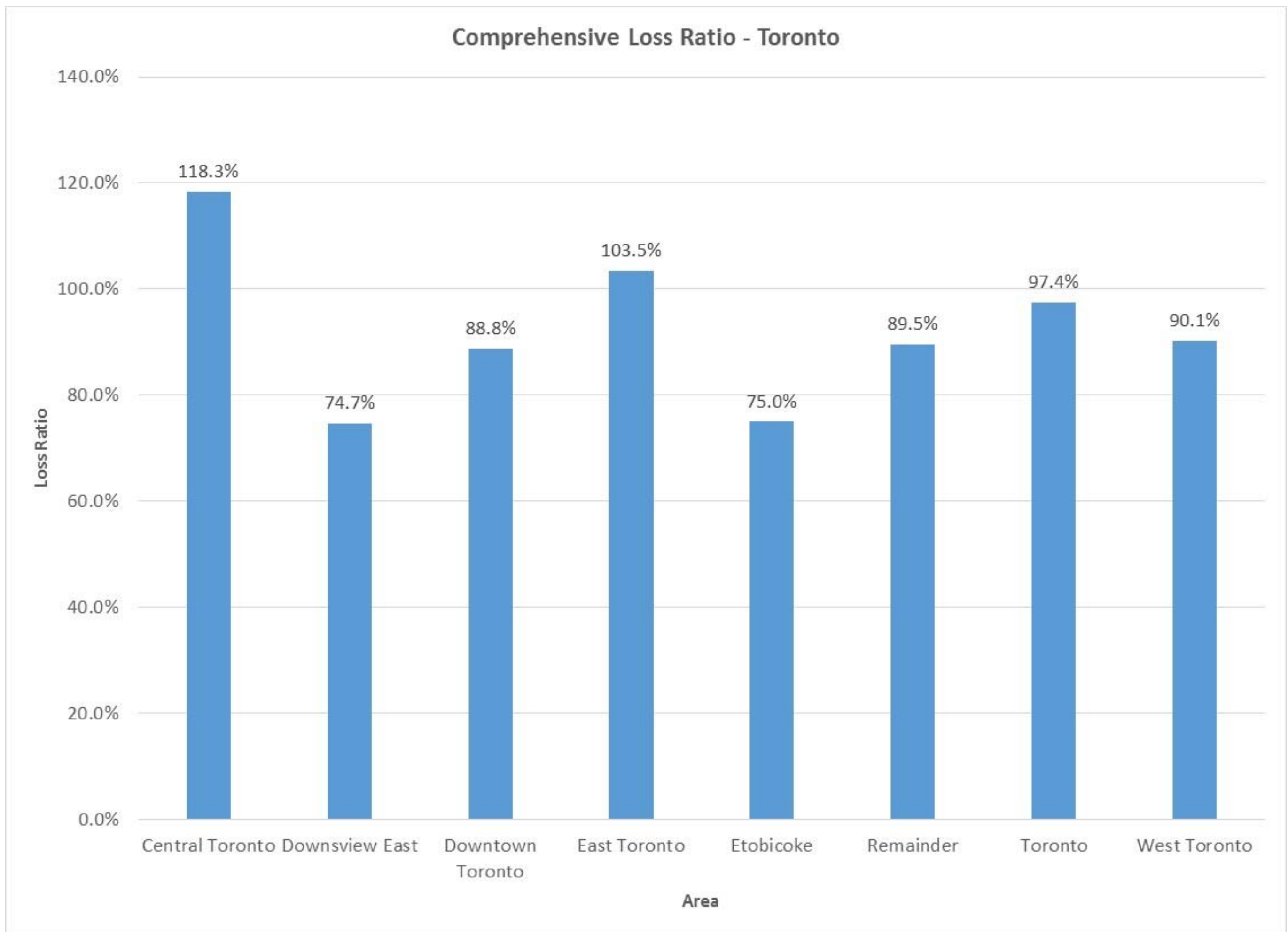
Chart 2: Collision Toronto Loss Ratios



For Collision, the loss ratio varies from 72.1% to 84.4%, a range of 12.3%.

Chart 3 shows the Comprehensive loss ratio for each of these areas based on data from accidents years 2017 – 2021.

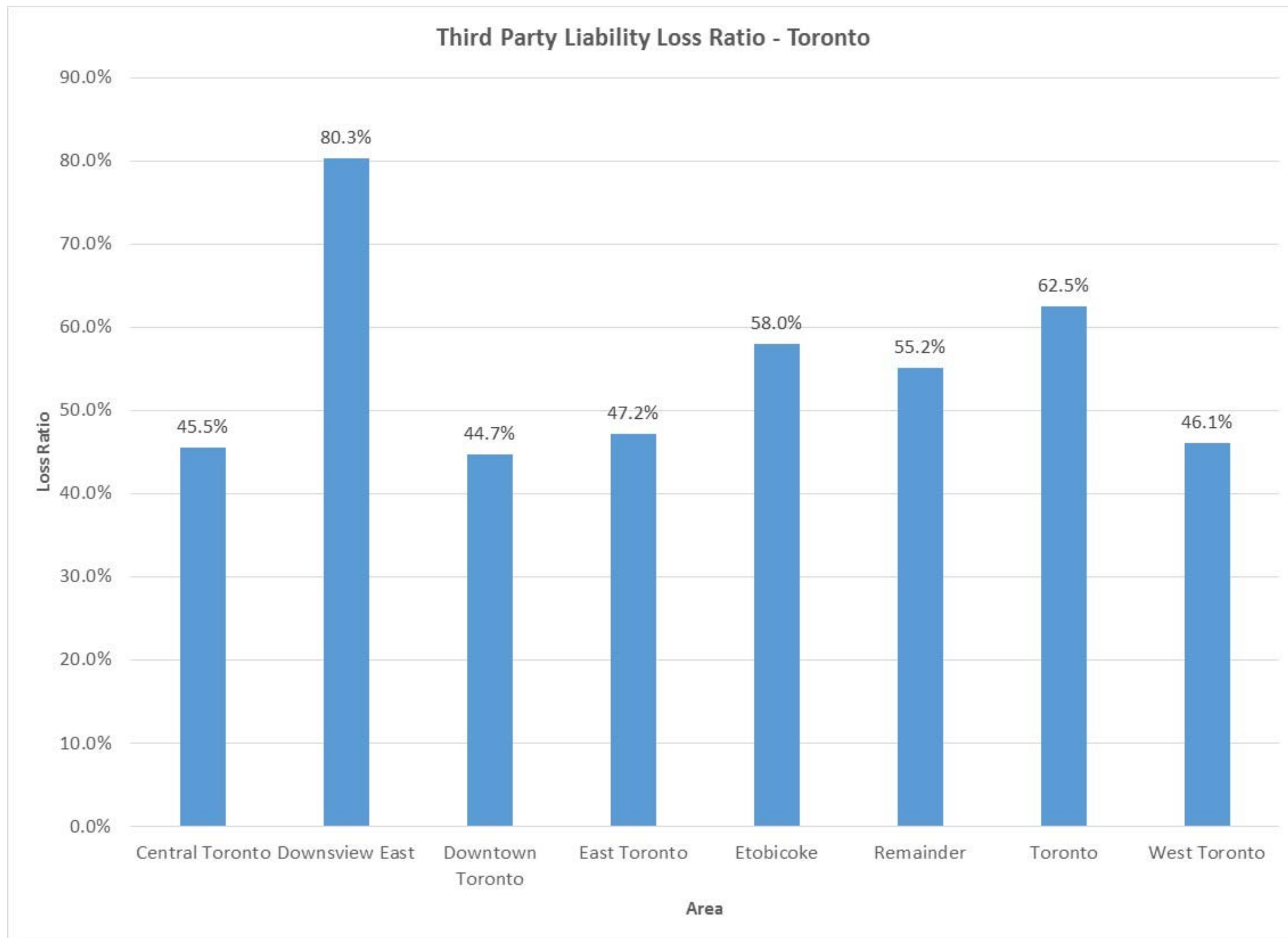
Chart 3: Comprehensive Toronto Loss Ratios



For Comprehensive, the loss ratio varies from 74.7% to 118.3%, a range of 43.6%.

Chart 4 shows the Third Party Liability loss ratio for each of these areas based on data from accidents years 2017 – 2021.

Chart 4: Third Party Liability Toronto Loss Ratios



For Third Party Liability, the loss ratio varies from 44.7% to 80.3%, a range of 35.6%.

Within coverages, the variation in loss ratio across Toronto is significant. If territory rates across all of Toronto were adequate, we would expect to see more even loss ratios across Toronto. As you look across coverages, you can also see that the range of variation in loss ratios differs as well. This also suggests that using one set of definitions for all coverages is also limiting insurance company ability to match premiums to the risk of loss by coverage.

TERRITORY REGULATION IN OTHER JURISDICTIONS

As FSRA develops revised territory regulations, one source of information to study is how territories are regulated in other jurisdictions. As part of this study, Pinnacle has reviewed territory regulations in other jurisdictions in North America.

In most states in the United States, there are no specific rules applicable to territory rating. Rather, territories are subject to the same regulatory process as most other rating variables. Territory definitions and associated rates must be supported based on loss experience, and are subject to the standard that rates are to be "not inadequate, not excessive, and not unfairly discriminatory."

However, there are several states that either currently have specific rules applicable to territory rating, or have had specific rules for territory rating regulation in the past. These states are California, Connecticut, Illinois, Michigan, and New Jersey. Pinnacle also reviewed territory rating regulations in the Canadian province of Alberta.

California

California has a prescriptive approach for developing rating factor indications called sequential analysis. The following information is taken directly from the California Department of Insurance website. [2]

The sequential analysis shall analyze the rating factors one at a time, in the following order:

1. Driving record,
2. Annual mileage,
3. Years licensed,
4. Optional factors which can be analyzed in any order, except for frequency band and severity band which shall be analyzed last.

Developing frequency and severity bands is the required approach for incorporating territories. California is the only state that requires the geographical effect be accounted for separately between claim frequency and claim severity.

The frequency band can only consist of up to ten categories and reflects where the insured vehicle is garaged. The geographical unit used for rating must be ZIP code.

[2] https://www.insurance.ca.gov/0400-news/0200-studies-reports/0600-research-studies/auto-class-plan/frequency-severity-bands.cfm

The severity can only consist of up to ten categories and reflects where the insured vehicle is garaged. The geographical unit used for rating must be ZIP code.

Given there are ten frequency bands and ten severity bands, this ultimately results in 100 unique territory rates when combining frequency and severity bands.

California produces a “Frequency and Severity Bands Manual” which contains data on the claims frequency and claims severity for most of the ZIP codes in California. It can be used to create rating bands or as a complement of credibility.

The experience in California has been the subject of much debate since the implementation of sequential analysis. The market still functions appropriately in California, and studies have been produced that argue that overall profits in California compare well to profits in other states. To understand the impact of limitations on geographical rating, however, would require a review of loss ratios by territory, which is not publicly available at the industry level. Anecdotal evidence suggests that loss ratios in urban areas in California are higher, as less urban and rural areas subsidize the more urban areas. This has also led to companies using other approaches to mitigate their exposure in urban areas (less marketing, no agency presence, etc.)

Connecticut

This information is taken directly from the Connecticut Department of Insurance website. [3]

Connecticut law requires insurers using a territorial rating system to balance an individual territory loss experience with the statewide loss experience, using a 75%/25% weighting. This means that the total rate for a territory is calculated by combining 75% of the territory loss cost and 25% of the statewide lost cost.

A weighted territory rating system tends to lower rates in urban areas compared with an unweighted system, as high loss-costs in urban areas are combined with the lower average statewide loss-cost. Conversely, it tends to increase rates in suburban and rural areas. In general, the less weight given to territorial experience, the lower auto insurance rates are in urban areas, but with a related increase in rates in all other areas of the state.

Territories are generally associated with one or more ZIP codes, but Connecticut regulations prohibit insurers from splitting a town or city into two or more territories, regardless of how many ZIP codes it

[3] https://cga.ct.gov/2010/ACT/PA/2010PA-00007-R00HB-05014-PA.htm; https://www.cga.ct.gov/2015/rpt/pdf/2015-R-0234.pdf

contains. Insurers are required to file their territories and associated ZIP codes with the department for approval.

Illinois[4]

In Illinois, the base rate for bodily injury liability must be the same for all territories within a city with a population of 2,000,000 or more. Currently in Illinois, this applies only to the city of Chicago.

Given that this only restricts rates in one city for one coverage, the impact on the Illinois market has not been significant. Despite this restriction, Illinois generally allows insurance companies more flexibility in how they set their rates, so this flexibility outweighs this one restriction.

Michigan[5]

In 1981, Michigan implemented comprehensive insurance reform called the Essential Insurance Act. Part of this act included a limit in the differences in rates charged in different geographical areas of the states in three ways.[6]

1. Only 20 different territorial rates could be used
2. Rates between adjacent territories could only vary by 10%
3. The highest territory rate could not exceed 222% of the lowest territory rate in the state

A major reason for implementation of these rules was to lower prices in Detroit, which had the worst loss experience in the state and thus the highest premiums. Despite these intentions, the territory portion of the Essential Insurance Act was repealed in 1986. This was because the regulation had an uneven impact on different insurance companies based on geographical concentration. Those insurance companies with a minimal presence in Detroit were not impacted as significantly as those insurance companies that wrote more business in Detroit. Also, insurance companies used other means to limit the amount of business written in Detroit - such as limiting marketing in those areas.

With the restriction removed, insurance premiums in the city of Detroit were significantly higher than premiums in the remainder of the state, and for many that live in Detroit, the cost of insurance was a significant burden. The results of this included citizens going without insurance. One of the reasons for

[4] https://www2.illinois.gov/sites/Insurance/Companies/Documents/PrivatePassengerAuto.pdf

[5] https://www.michigan.gov/difs/industry/insurance/faq/no-fault-faq

[6] United States General Accounting Office. Report to Congressional Requesters. "Auto Insurance: State Regulation Affects Cost and Availability." August 1996.

this was because of the requirement of Michigan that all insureds carry unlimited personal injury protection (PIP) coverage.

To address this issue, among others, on May 30, 2019, the governor of Michigan signed no-fault auto insurance reform legislation to provide lower rates for Michigan drivers, protect insurance coverage options, and strengthen consumer protections. As part of this reform, insurance companies were no longer able to use ZIP codes to develop territories. Companies can, however, use any other geographical unit to develop territory definitions, including census blocks, which are typically smaller geographical units than ZIP codes. Given that insurance companies still have significant flexibility in setting territory rates, this change has not significantly impacted the ability to rate by territory. The ability to purchase lower limits of PIP and other reforms has led to the potential for lower rates in Detroit.

New Jersey[7]

Each insurer must have its territorial rating plan approved by the New Jersey Department of Banking and Insurance (DOBI). An insurer may use the common territorial rating plan (established by the Automobile Insurance Territorial Rating Plan Advisory Commission) or an approved territorial rating plan developed from its own loss experience. The DOBI will not approve any plan that does not comply with statutory and regulatory requirements, or that has anticompetitive implications for insurers in the State. Insurers must also analyze their territory definitions every five years and certify that the DOBI that the territories are appropriate. The DOBI also will not approve any rating plan that creates territorial relativities that are significantly disproportionate to those in place on May 19, 1998, the effective date of the Automobile Insurance Cost Reduction Act.

According the DOBI, “when establishing territorial rating plans, New Jersey law requires the following:

- Territories must be defined so that one can recognize throughout the territorial rating plan both qualitative similarities and qualitative differences in driving environments or mix of driving environments, which may include, but not be limited to, traffic density, population density, comparative severity of loss, and the degree of homogeneity within a territory in terms of driving environments, population, and driver classification.
- Territories must be contiguous.
- Territories must contain a sufficient number of exposures to result in statistically credible experience and must be defined in a manner that minimizes the effect of loss variability in a territory on a year-to-year basis.

[7] https://www.state.nj.us/dobi/proposed/pn03_292.pdf; https://www.state.nj.us/dobi/proposed/prn07_10.pdf; https://law.justia.com/codes/new-jersey/2013/title-17/section-17-29a-50/

- Territory definitions must take into account the impact of the overlapping of traffic patterns on exposure to loss, including the relative number of intra-territory trips and inter-territory trips applicable to each proposed territory.
- Territories created must result in an equitable distribution of exposures among territories throughout the state and no territorial rating plan may result in territories that are arbitrary, unfairly discriminatory, significantly disproportionate in terms of the number of exposures per territory, or created in a manner which is primarily for marketing purposes rather than measuring relativity of exposure to probable loss.
- Territories created must not result in disproportionate differences in territorial relativity factors or territorial base rates between contiguous territories with similar driving environments or similar mix of driving environments.
- Factors considered in establishing territorial rate relativities must take into account similarities or differences in driving environments or mix of driving environments, including traffic density, population density, mix of driver classifications within a territory, comparative degree of severity of loss, and the relative number of intra-territory and inter-territory trips.
- Territories created must not result in unfair inter-territorial subsidization among territories with significant differences in driving environments or mix of driving environments, population density, traffic density, mix of driver classifications, and comparative degree of severity of loss.
- For the purpose of defining territories and establishing territorial relativity factors, loss experience allocated to any territory by an insurer must (1) take into account any recovery applicable to exposures in the territory attributable to subrogation or any other kind of recovery and (2) not include any loss attributable to capping of driver classifications.
- The auto insurance rate charged an insured driver cannot exceed 2.5 times the insurer's territorial base rate filed with the department, exclusive of driving record surcharges and discounts. The rate for the base class in any territory cannot exceed 1.35 times the insurer's statewide average base rate, exclusive of driving record surcharges and discounts for any basic policy (i.e., the minimum required coverage). The rate for a driver age 65 years or older cannot exceed 1.25 times the statewide average rate for all similar drivers, exclusive of driving surcharges and discounts.
- New Jersey allows insurers to classify insureds by rate tiers, assigning them based on risk characteristics common to that group of insureds. Insurers must file underwriting rules used for tier rating plans with the DOBI. No underwriting rule for implementing a tier rating plan may be based on the territory in which a driver resides or any other factor that is a surrogate for the territory."

Alberta[8]

In Alberta, insurers are required to explain and support their methodology for defining rating territories and determining corresponding relativities. Also, territories must be statistically credible. To this end, insurers may use either their own experience, industry experience, or other relevant data. In addition, territory relativities changes must be capped at +/-10% per year.

Prior to March 1, 2021, there was a limitation on the number of territories that could be used in Alberta. Due to the negative impact this had on the market, Alberta removed this restriction and left it to the discretion of the Automobile Insurance Rate Board to determine whether insurance company territory rates were appropriate.

Impacts of Territory Restrictions

The impact of these territory restrictions in North America on loss experience is not publicly available. To determine the impact, ideally, we would review the differences in loss ratios between geographical areas with higher loss costs and those areas with lower loss costs. This data is not available on an industry aggregated basis.

However, we do have two points of reference that show the negative impacts of regulation that attempts to restrict territory rates in high-cost areas. In Michigan, the territory rate limits lasted for only five years before it was repealed because of the loss and availability issues it was causing in the market. The other example is Alberta, where significant issues in the market led to the removal of the territory rate restrictions. Restrictions in other states like California, New Jersey and Connecticut still continue, however, and the markets still appear to be functioning effectively. Additional reviews of loss experience by geography may provide more insight into whether these markets truly are functioning well.

[8] https://albertaairb.ca/wp-content/uploads/2022/07/airb-technical-guidance.pdf

POTENTIAL IMPACTS OF A PRINCIPLE-BASED APPROACH

Moving from a rules-based approach to a principles-based approach to regulation will have potential implications for the principles outlined earlier. For each current territory requirement, we discuss how each potential change could impact the key principles.

We note here that the potential impacts should be considered in light of the outcome-based tests that will be developed as part of a principles-based approach. While the specific tests will be developed as part of the next phase of this project, we comment on the approach to developing the outcome tests in the next section.

Methodology

Currently, FSRA does not require a specific methodology, and instead requires insurers to document and support the methodology used to develop territory definitions. Table 2 shows the potential impact if this requirement is removed.

Table 2: Options for Changing Current Requirement Related to Territory Development Methodology

Principles-Based Change	Consumer Focus	Sustainability	Transparency and Disclosure	Simplicity	Responsiveness	Innovation
Remove the requirement to file documentation supporting the territory changes	No impact.	No impact.	Removing the requirement for actuarial documentation may decrease Transparency and Disclosure.	Removing the requirement for actuarial documentation would decrease the burden on insurance companies.	No impact.	No impact.

We note here that moving to a principles-based approach is not necessarily inconsistent with requiring support of the territory development process.

Territory Indications

Currently, territory indications must be included with every major filing even if territory rates are not changing. This requirement is often waived by FSRA if a company is not proposing changes to territory rates. The options for changing this requirement are shown in Table 3.

Table 3: Options for Changing Current Requirement Related to Territory Indications

Principles-Based Change	Consumer Focus	Sustainability	Transparency and Disclosure	Simplicity	Responsiveness	Innovation
Do not require territory	No impact.	Not requiring a major filing every	Removing the requirement to	Removing the requirement to	No impact.	No impact.

Principles-Based Change	Consumer Focus	Sustainability	Transparency and Disclosure	Simplicity	Responsiveness	Innovation
indications to be filed even when territory definitions are changing		three years has the potential to decrease the likelihood that territory rates are evidence-based.	file territory indications may decrease Transparency and Disclosure.	file territory indications will decrease the burden on insurance companies.		

Even if territory indication support is no longer required, outcome-based tests could be implemented to test whether filed territory rating factors are supported by the experience that has emerged.

New Territory Differentials

Territory development approaches are expected to remain reasonably constant over the years for the insurer. Any change in either the approach or the underlying data from the prior rate filing should be disclosed and supported. Costs must be fairly allocated between territories, and rates for newly formed adjoining territories should not vary by more than +/-10%.

Many of these requirements are discussed in other recommendation sections. Below are the impacts of removing the requirement that newly formed adjoining territories should not vary by more than +/-10%.

Table 4: Options for Changing Current Requirement Related to New Territory Differentials

Principles-Based Change	Consumer Focus	Sustainability	Transparency and Disclosure	Simplicity	Responsiveness	Innovation
Do not limit the percentage by which newly formed adjoining territories may vary.	Removing the limitation on the percentage by which new territories can vary may increase the ability of insurance companies to bring forward new pricing models.	Removing this limitation will increase the likelihood that territory rates are evidence-based.	No impact.	Removing this limitation increases the focus on the outputs.	No impact.	Benefits of experimentation may be increased if there are limits on how much rates can vary is removed.

In many jurisdictions in the United States, there are no specific limits on the variance in rates between newly formed adjacent territories. However, many insurance companies limit the overall change that a policyholder's rate can change with each rate change, either because of specific regulation or as a business practice. In a principles-based regulation environment, the stability of overall rates is best addressed at the vehicle or policy level, not the individual variable level.

Credibility

Credibility procedures must be disclosed and supported. Territories should be based on a minimum of three years of company data and at least 2,500 annualized average vehicles over the three-year period where a unique territory definition is proposed. The potential impact of removing this requirement is shown below.

Table 5: Options for Changing Current Requirement Related to Credibility

Principles-Based Change	Consumer Focus	Sustainability	Transparency and Disclosure	Simplicity	Responsiveness	Innovation
Remove the credibility standard.	May increase the chance that company models are biased.	The removal of credibility standard can both enhance and detract from evidence-based pricing. If the removal allows rates to more adequately reflect loss costs, rates will be more evidence based. If the removal introduces more random variation into the process, rates could be less evidence-based.	No impact.	Removal of a credibility standard would increase focus on the outputs.	No impact.	No impact.

The potential increase in reflection of random fluctuation in territory rates can also be addressed with testing of implemented territory factors relative to emerged experience.

Proposed Changes

Rebased indicated and proposed changes are expected to be in the direction of the indication as well as within +/-10% of the current factor. The potential impact of removing this requirement is shown below.

Table 6: Options for Changing Current Requirement Related to Proposed Changes

Principles-Based Change	Consumer Focus	Sustainability	Transparency and Disclosure	Simplicity	Responsiveness	Innovation
Do not limit the percentage by which proposed rates can change.	No impact.	Removal of this limitation would increase the likelihood that	No impact.	Removal of this limitation would increase the focus on the outputs.	No impact.	Benefits of experimentation may be increased

Principles-Based Change	Consumer Focus	Sustainability	Transparency and Disclosure	Simplicity	Responsiveness	Innovation
		rates are evidence-based.				if these limits are removed.

In many jurisdictions in the United States, there are no specific limits on the proposed changes in rates for territory factors. However, many insurance companies limit the overall change that a policyholder's rate can change at each rate change, either because of specific regulation or as a business practice. In a principles-based regulation environment, the stability of overall rates is best addressed at the vehicle or policy level, not the individual variable level.

Large Losses

Currently, large claims should be capped in establishing territorial rates in Ontario. As this is standard practice in ratemaking, moving to a principles-based environment would not change this consideration.

Limitation on Number of Territories

Currently, there can be no more than 55 territories in the Province, and a maximum of 10 territories for Toronto. The potential implication of removing this limitation is shown below.

Table 7: Options for Changing Current Requirement Related to Limitation on the Number of Territories

Principles-Based Change	Consumer Focus	Sustainability	Transparency and Disclosure	Simplicity	Responsiveness	Innovation
Remove the territory limit in Ontario and in Toronto.	May increase choice and competition.	Removing this limit may increase the ability of insurers to differentiate fully between areas with different expected costs, thus resulting in rates that are more evidence-based.	No impact.	Removing this limitation increases the focus on the outputs.	No impact.	Removal of this limitation may increase the benefits of experimentation and increase flexibility in the future.

In most jurisdictions in North America, there is no limitation on the number of territories. California is the example of a state that has a limitation, and it ultimately has a limit of 100 different territory rates.

Contiguity

Currently, territories must be contiguous, and bodies of water are not appropriate to use to establish a contiguous area. The potential impact of removing this requirement is shown below.

Table 8: Options for Changing Current Requirement Related to Contiguity

Principles-Based Change	Consumer Focus	Sustainability	Transparency and Disclosure	Simplicity	Responsiveness	Innovation
Remove the contiguity requirement	May increase choice and competition.	Removing this requirement may increase the ability of insurers to differentiate fully between areas with different expected costs, thus resulting in rates that are more evidence-based.	No impact.	Removing this requirement will increase focus on the outputs.	No impact.	Removal of this requirement may increase the benefits of experimentation and increase flexibility in the future.

While it is not common for states in the United States to require contiguous territory definitions, there are some companies that impose this constraint on territories as it is more easily explained to regulators and consumers.

Combined Definition

Currently, a common territorial definition must be used for all coverages. The potential impact of removing this requirement is shown below.

Principles-Based Change	Consumer Focus	Sustainability	Transparency and Disclosure	Simplicity	Responsiveness	Innovation
Remove the combined definition requirement	May increase choice and competition	Removing this requirement may increase the ability of insurers to charge evidence-based rates by coverage.	No impact.	Removing this requirement increases the focus on the outputs.	No impact.	Removal of this requirement may increase the benefits of experimentation.

To our knowledge, no jurisdictions in the United States have a requirement of the same territory definitions to be used for each coverage. California actually requires that territory definitions be set by coverage. In addition, as different coverages represent different causes of loss, allowing territories to vary by coverage is more reflective of the differences in what is actually covered.

Additional Considerations

Removing many of the current FSRA territory requirements will have positive impacts on several aspects of the FSRA Rate Regulation Principles, including increasing the choice for consumers through increased competition and innovation, increased stability through the rates that are more evidence-based, and increasing Simplicity by removing many of the current territory requirements. The changes, however, will not end with simply removing the existing requirements. There will be additional changes implemented that focus on more outcome-based tests, as discussed in the next section. These changes will help ensure that rates from a territory perspective (and ultimately overall rates) are fair and insurers are accountable for outcomes being consistent with expectations.

OUTCOME-FOCUSED TESTS

A principles-based regulation approach includes the development of outcome-focused tests to determine if the desired outcomes are being achieved. The specific details of the principles-based regulation and the outcome-focused tests will be developed as part of the next phase of this engagement, but the idea would be to help ensure that the territory definitions being implemented are consistent with the principles established by FSRA.

For each identified principle, we will determine potential measures or tests for determining whether the territories are meeting the identified requirements. As an example, for the risk-based principle, measures such as the change in indications over time, or a review of the emerging experience since implementation would be options.

In addition to specific measures for each principle, there are some broader outcome-focused considerations that may support multiple principles, and also will potentially extend beyond just regulating territories. Two examples of this are discussed below.

Overall Rate Change Cap

One of the key principles for FSRA is stability. FSRA is very focused on ensuring that policyholder rates do not vary significantly from year to year. One step in accomplishing this is the limitation on proposed changes in territory rates to +/- 10% of the current factor.

While this requirement can help keep rates stable, it is not guaranteed to work as the impact on policyholder premiums could ultimately come from multiple changes in the rating plan. Also, limiting changes in individual factors also does not provide insight into how far away the current rates are from the proposed rates and the proposed rates may be significantly limited.

To address this, Pinnacle recommends that FSRA consider an overall cap on policyholder premium change based on a rate change filing. This would allow FSRA to maintain the focus on stability, and would also allow insurers and FSRA to get a more complete view of indicated changes in rates. This can be structured as an outcome test by evaluating premium changes not just in one rate change, but over time as well.

Fairness Criteria

Some of the existing FSRA requirements are perceived to improve fairness, but there is no evidence this is the case. Part of the reason for this is that there is no specific definition of fairness, and as such it is very difficult to determine whether they have led to more fair results. Insurance companies are charged with developing models that are free of bias and unfair discrimination as defied by public policy. It will be important for all stakeholders (FSRA, insurance companies, consumers) to

collaborate to determine what this definition should entail for insurance pricing. Once this definition is finalized, metrics can be defined to determine whether regulatory changes should be implemented to enhance or ensure fairness.

Many of the regulatory approaches related to fairness often involve subjective determinations of whether rates are fair in general, or more specifically whether particular rating factors are deemed to be fair. The subjective evaluation focuses on whether specific factors are perceived to impact different groups of insureds differently. As an example, the use of credit-based insurance scores has been attacked in the United States as being unfair to some minorities and low-income policyholders as they may be more likely to have lower credit scores. The use of territories in rating has also been attacked, as some believe that due to the history of segregation, using territories is a way to bias rates higher against minorities or low-income policyholders.

In Ontario, FSRA has taken steps in the past in an attempt to ensure that rates are fair. This has included implementing many of the territory requirements described in the Current Ontario Territory Requirements section. There is also a take all comers requirement in Ontario to promote fairness to all potential customers. There are also a number of factors that are not allowed to be used in developing Ontario auto rates, such as credit-based insurance scores, race and income.

In the United States, regulators have taken a few different approaches to promote fairness.

- Some regulators require insurance companies to justify why rating factors are not unfairly discriminatory.
- Some states have prohibited the use certain rating factors – e.g., credit based insurance score, education, occupation, gender
- California has specified a particular methodology for calculating indicated rates to force more of the weight on factors which are deemed to be more fair (driving history, annual mileage, years licensed)
- Colorado has passed specific legislation requiring each insurance company to test whether or not rates are unfairly discriminatory, which is defined as a balance between a variable being predictive of loss and it's correlation to a protected characteristic.

Ultimately, FSRA should develop a definition of fairness that incorporates key considerations that are important in Ontario. Potential considerations for this definition are:

- Rating factor is predictive of loss costs
- How correlated a rating factor is to protected characteristics
- Overall impact of rates on different levels of protected characteristics

Once this definition is determined, there are several next steps that could be taken.

- Review available industry data to determine if there is a fairness issue in rates
- Develop regulatory rules to help ensure fairness
- Develop outcome tests to determine whether rates are fair

One of the reasons that there have been a number of solutions proposed and implemented is because there is not always a consistent definition of fairness, and thus not always consistent ways to address what may be perceived as unfair. While input on the definition will come from many stakeholders, Pinnacle believes the idea of fairness in pricing should be rooted in this fundamental premise:

> ***As a society, we have agreed that there are certain elements that should never be considered in pricing, no matter how predictive they are.***

All stakeholders to the insurance process accept this premise as a given. In today's increasingly sophisticated world, availability of data is increasing at a significant pace, and we have greater ability to analyze that data in more complex ways. If the prohibited elements are predictive of auto insurance loss, then increasing amounts of data and more sophisticated analysis techniques increases the potential that the predictive power of these prohibited variables will be indirectly picked up in pricing models. So, there is the potential that impacts we have agreed as a society not to reflect may, in part, be reflected. The ultimate questions are how to measure whether this is occurring, and if it is occurring, is the level at which it is concerning problematic.

With this potential fairness framework, data would need to be collected related to the prohibited factors to conduct an analysis to determine whether premiums are picking up predictive power of prohibited factors. This would allow FSRA to identify whether there is truly a concern. With the results of this analysis, FSRA would be able to determine whether premiums are fair, and can also define thresholds at which action should be taken or mitigation should occur.

Given the complexity of interactions of data elements and more sophisticated analyses, analyzing fairness ultimately is not a question of whether specific variables are fair or not (such as territory), but whether ultimate premiums are fair. Given that fairness in insurance is not defined by one variable (i.e. territory will not perfectly correlate with a prohibited factor), the ultimate solution is not related to one variable, but to the overall adjustment of the premium outcome.

Affordability Criteria

Some of the existing FSRA requirements are perceived to improve affordability, but there is no evidence this is the case. We recommend FSRA develop a definition of affordability, and outcome test metrics can be defined to determine whether regulatory changes should be implemented to enhance or ensure affordability.

There have not been consistent measures of affordability in the United States regulatory market, nor have there been consistent analyses developed to determine whether affordability is a problem.

Affordability is a function of the cost of insurance relative to the income of those purchasing the insurance coverage. Insurance companies have information on the cost of insurance, and so when insurance costs rise, concerns are raised about whether insurance is affordable, often without considering the income portion of the equation.

Affordability is not a market-wide issue, it is rarely the case that insurance is affordable or not affordable across an entire market. Affordability is more localized and will likely vary within segments of a market. As an example, rates may be higher in an urban area due to traffic density and higher frequency of accidents, but if income is also higher in the urban area, it may not necessarily result in an affordability problem. Also, rates tend to be higher for younger drivers, and younger workers also tend to have lower incomes than older drivers. Therefore, it may be more likely that there is more of an affordability issue with younger drivers.

In 2017, the Federal Insurance Office in the United States completed a study of affordability at the ZIP code level. The study analyzed average premium paid per ZIP code relative to the average income in each ZIP code. The standard of affordability that was used was a 2% ratio of premium to income. If this ratio was above 2%, insurance was deemed unaffordable in this area. While this provided a high level look at affordability, the study was not performed at a granular enough level to truly determine whether there was an affordability problem.

There are several considerations that should be incorporated when defining Affordability.

- Cost of insurance purchased
- Cost of minimum coverage
- Income at a granular level
- Threshold of affordability

Once the definition of affordability is developed, industry data can be studied to determine whether there is an issue of affordability in specific segments of the Ontario market. Once these studies have been completed, FSRA can determine appropriate next steps, which could be either implementing regulatory rules to address any issues discovered or implementing market outcomes tests to continue to monitor affordability.