Travel Industry Council of Ontario

Actuarial Study and Financial Assessment

Compensation Fund

May 31, 2017

DELOITTE.

Table of Contents

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EXECUTIVE SUMMARY

Background

This report has been commissioned by Richard Smart, CEO of the Travel Industry Council of Ontario (TICO) for the purposes of performing Actuarial and Consulting services to determine appropriate Compensation Fund levels. A full background regarding the current mechanism can be found in Section A of this Report.

Scope

As per our Engagement Letter dated February 14, 2017, the objective of the Actuarial and Consulting services provided by Deloitte is to determine the appropriate fund levels of TICO's Compensation Fund (the FUND). Deloitte has worked alongside TICO to understand the current FUND modelling approach and parameters, and to understand how TICO currently estimates future FUND levels. Deloitte has read and understood the *Travel Industry Act, 2002* ("Act") and Ontario Regulation 26/05 ("Regulation") to ensure that the Actuarial opinions provided in this document are compliant with our interpretation of the rules and regulation.

Deloitte has determined the appropriate future FUND balance required by determining:

- the Expected Claims to the FUND, and
- the impact to consumer claim payouts from the FUND after considering legislated maximums.

This report is a comprehensive actuarial analysis that has utilized modelling of scenarios under the current and stress test / catastrophic scenarios. The key findings and Target FUND level recommendations are key outcomes of this study. Deloitte has reviewed TICO's set of recommendations made to the Government, dated April 13, 2017, leveraging on those when aligned with our independent observations.

Approach and Timeline

Over a period of approximately 12 weeks, Deloitte held weekly update and discussion meetings with the TICO executive team. A weekly agenda was shared in advance and discussions were documented. These discussions served also to validate the underlying assumptions used for our actuarial simulations. Details of the timings and discussions for these meetings can be found in Appendix A.

During the discussions with the TICO team, the following items were explored in relation to the FUND.

1. Data: Exploring data availability, understanding the current claims process, identifying supplemental data for use in our analyses
2. Exposures: Identifying key risk factors that TICO is exposed to
3. Large Losses: Understanding the causes of large losses and the probability of occurrence
4. Analysis: Modelling of Frequency and Severity Distributions, determining FUND Target Levels and developing an income model to project future state
5. Predictive Modelling: Techniques including decision trees and generalized linear models to determine potential drivers associated with TICO Registrant ("Registrant") failure
6. Mitigation: Exploring risk transfer mechanisms

These discussions were used in Deloitte's analysis, as shown in Section B of this Report. The following table lists the key findings as a result of the analysis.

Summary of Key Findings

Focus Area	Finding[1]
Current Health of FUND	• The current funding mechanism and size of losses to the TICO FUND is resulting in a year-over-year loss • If the current environment were to continue (claims, funding, investment returns, Registrant numbers), then TICO's FUND would not be large enough to continue supporting Ontario consumers in 10-15 years
Chargebacks	• Historical chargebacks correspond to 9.47% ($1.3M) against total claims paid of $13.2M • There is a significant risk that leading credit card and reward programs General Terms and Conditions will eventually exclude liabilities arising due to the failure, insolvency or inability to perform a service from a travel agent, tour operator, accommodation provider, airline or other carrier • The chargeback rate used throughout our analysis is 4.5%
Trust Accounting	• Deloitte is supportive of the suppression of Trust Accounts and the transition to increased security deposits
Recommended FUND size	• All methods imply a Target FUND range of between $40M to $60M • Deloitte recommends a FUND size of approximately $50M

[1] The complete list of findings is available in Appendix G

A. Introduction: About TICO

A.1 Background

TICO is a not-for-profit corporation that administers and enforces the Travel Industry Act within Ontario on behalf of the Ontario government. TICO assumes responsibility for the Registrant-financed Travel Industry Compensation Fund (herein known as the FUND). TICO governs approximately 2,418 travel agents and wholesalers Registrants in Ontario, who are required to be registered under the Act and comply with the law.

The purpose of the FUND is to protect consumers who purchase travel services from Ontario-registered retailers in the event that the travel services cannot be provided because of financial failure or insolvency of a Registrant, or where the consumer has purchased travel services through an Ontario retailer, and those services are not provided due to a failure of an end-supplier airline/cruise-line.

A.1.1 TICO Funding Mechanism

The current FUND can be financed through three mechanisms:

1. Contributions made by Registrants, which account for approximately 75% of yearly revenues;
2. Recoveries of money paid from the FUND;
3. Investment income earned on assets backing the FUND.

Contributions made by Registrants fall under the following categories:

1. Fee Schedule for registration and renewal fees:

   a. Registration

Entity	Required Fees
Travel Agent or Travel Wholesale – Head office	$3,000
Travel Agent or Travel Wholesale – Branch office	$800

   b. Renewal

Sales volume	Renewal Fee
$2,000,000 or less	$300
More than $2,000,000 but not more than $5,000,000	$600
More than $5,000,000 but not more than $10,000,000	$900
More than $10,000,000 but not more than $50,000,000	$1,200
Over $50,000,000	$1,800

2. Payment Schedule – FUND contribution rates per volume of sales:

    a. Semi–annual assessments as per the TICO Payment Schedule.
    b. Travel agents and travel wholesalers pay $0.25 (plus the applicable taxes) per $1,000 of sales made in Ontario.

3. Education Standard Fee:

    a. Based on the number of exams written in FY 2015, this represented $195,000 for FY 2015/2016. Exam fees ranged from $35 to $50 per exam.

TICO is facing challenges due to new business models, consolidation and vertical integration of travel companies, and the continued low interest rate environment.

Ontario travel sales are growing annually in the range of 3% to 5% per annum yet there is an overall reduction in the number of new Registrants and an increase in the level of renewal cancellations. This decline in Registrant numbers results in lower fees, but this is partially offset by higher fees from the larger entities. However, the larger Registrants bring a different risk profile to the FUND.

Investment income has decreased from approximately $1.5 million at its peak in 2007/2008, to around $0.5 million for the latest period. A continuing low-interest rate environment will likely keep investment returns at the lower end.

These factors, along with other industry trends such as online sales, fraud etc. is increasing the underlying risk exposure to the TICO FUND which raises the question of the adequacy of the FUND in the longer term. In particular, the risks associated with the failure of a large Registrant or airline/cruise line may significantly deplete the FUND and place significant constraints on TICO in fulfilling its commitment of consumer protection.

To mitigate these risks, TICO has introduced a number of measures, outlined below, directed to increasing revenue streams and offering other financial guarantees – like minimum levels of working capital.

This report introduces and explains several mechanisms that can be used to build up TICO's FUND to levels that are commensurate to the underlying risks and changing market dynamics.

A.1.2 Assessment (FUND) Increases

The assessments illustrated in the Table below have seen revisions over time as TICO has been required to increase the level of assessment in order to ensure maintenance of their mandate in an evolving travel market.

TICO assessment fee changes from 2013 to 2017

Travel agents & travel wholesalers	Prior to May 1, 2013	After May 1, 2013	2016	2017
Twice a year, make payments in the amount that is the greater of the following:				
	$25 plus the applicable taxes	$25 plus the applicable taxes	-	-
The amount of:				
	$0.05 plus the applicable taxes for every $1,000 or part of $1,000 of sales made in Ontario	$0.15 plus the applicable taxes for every $1,000 or part of $1,000 of sales made in Ontario	$0.20 plus the applicable taxes per $1,000 of sales made in Ontario	$0.25 plus the applicable taxes per $1,000 of sales made in Ontario

Percentage wise, and taking $0.05 as the starting point, the table above represents a 400% increase on contribution fees over the last 3 years.

A.1.3 Minimum Working Capital

In order to ensure the financial stability of its Registrants, TICO requires the following minimum working capital to be held based on the yearly sales of the Registrant.

Minimum Working Capital

Sales in Ontario during previous fiscal year	Minimum working capital
$500,000 or less	$5,000
More than $500,000 but not more than $750,000	$10,000
More than $750,000 but not more than $1,000,000	$15,000
More than $1,000,000 but not more than $2,000,000	$20,000
More than $2,000,000 but not more than $5,000,000	$25,000
More than $5,000,000 but not more than $10,000,000	$35,000
More than $10,000,000 but not more than $20,000,000	$50,000
More than $20,000,000	$100,000

In addition to holding minimum working capital, TICO also requires new Registrants to provide TICO with a security deposit of $10,000 to be held in trust in the event of future claims. This security deposit may be released back to the Registrant after, but not before, the Registrant has successfully filed financial statements with TICO for two years.

On April 13, TICO submitted a recommendation to the government proposing that Registrants must not only maintain a positive Working Capital balance at all times, but also provide debt/tangible net worth and profitability ratios. These ratios, designed to monitor debt and equity, will be compiled in forms of tables in order to facilitate analysis[2].

A.1.4 Financial Inspections

Under instructions from the Registrar, TICO is responsible for conducting financial reviews and inspections. There are two types of reviews: bench reviews and site inspections. During the fiscal period 2016/2017, TICO performed bench reviews for approximately 72% of Ontario's Registrants (1,747 out of 2,418) and followed up with 370 on-site inspections.

Financial reviews focus on key indicators and, in particular, on indicators where non-compliance would trigger regulatory action by TICO (since mandatory disclosure is required as per the TIA). TICO has mechanisms and procedures in place that support Registrants with their compliance on financial indicators.

Monitoring financial indicators is designed to help identify Registrants with a higher risk of failure. In section B.7, Deloitte has leveraged detailed data shared by TICO and introduced sophisticated predictive models using financial indicators. An example of a potential predictive relationship is the *percent change compare to last year in Ontario Gross Sales.* Further details are introduced in section B.

Under the current assessment mechanism, once a Registrant is flagged for an on-site inspection after red-flags have been identified during financial reviews, a Risk Assessment Framework is used to rate Registrants either low, medium or high risk.

The Risk Assessment framework is therefore a good potential 'early-warning' indicator for potential future Registrant failure. As a next step, TICO could look to incorporate additional risk factors, including Registrant trends, to further facilitate the monitoring of Registrants risk profile. Ideally, these risk factors would be stored on TICO's IT systems.

Deloitte is aware that TICO is currently performing enhancements to the Risk Assessment Framework and is moving in this direction.

Finally, TICO has a potentially rich dataset including macro level, micro level, and policy drivers that can be very useful, for example, in the application of modern predictive modelling techniques to enhance Registrant bench reviews and on-site inspection processes.

Possible enhancements include developing a machine-generated risk score - a process that automatically highlights areas in Registrant financial reporting that may require further attention from an inspector (such as magnitude of year over year sales change). This would aid in prioritizing inspector workloads during bench review and on-site reviews, and potentially generate time and cost efficiencies.

See Section B for quantitative detail on factors that can serve as inputs to a predictive model for the Registrant failure risk score.

[2] TICO Comprehensive Review: recommendations for modernization, April 13, 2017

A.1.5 Additional Requirements

TICO is aware that financial risks are not the only contributor to the failure of a Registrant and TICO has therefore introduced a combination of requirements and supporting mechanisms to be fulfilled by its members:

- Educational requirements and training offered to Registrants
- Placing requirements on the information to be provided to consumers at the time of booking
- Ability to refuse registration, revoke, suspend or impose sanctions to a member/Registrant that is not complying with the law

A.2 Project Plan

The main project objective was to help TICO determine the appropriate levels of the FUND. The steps performed to determine the Target FUND level were as follows.

Data	•Data Validation •Risk Parameters •Supplemental Data •Claims Process
Key Risk Factors	•Identify Key Risk Factors •Exposure to TICO •Select Risk Parameters for modelling Registrant Failure •Agree on Thresholds for small vs large catastrophic losses
Analysis	•Derive Frequency and Severity Loss Distributions •Determine Expected Losses to the FUND •Predict Aggregate Loss amounts from the model
Stress Testing	•Stress Test of Expected Losses to the FUND •Establish FUND Target •Profit & Loss Projections
Predictive Models	•Collect additional historical data •Identify potential applications of predictive models •Identify preliminary relationships between micro/macro variables and the probability of failure
Risk mitigation	•Analysis of impact from Consumer Protection Fee (CPF) •Analysis of proposed extension of coverages •Revise risk exposures and FUND levels •Explore risk transfer options
Report & Recommendations	•Recommend target FUND level, level of reinsurance, and methods of funding
Enhanced Analysis	•Large Loss •CATO Data, Chargebacks, Quebec Fund •Analysis on low-cost airline failures •Chargeback analysis

B. Analysis

B.1 Data and Current FUND

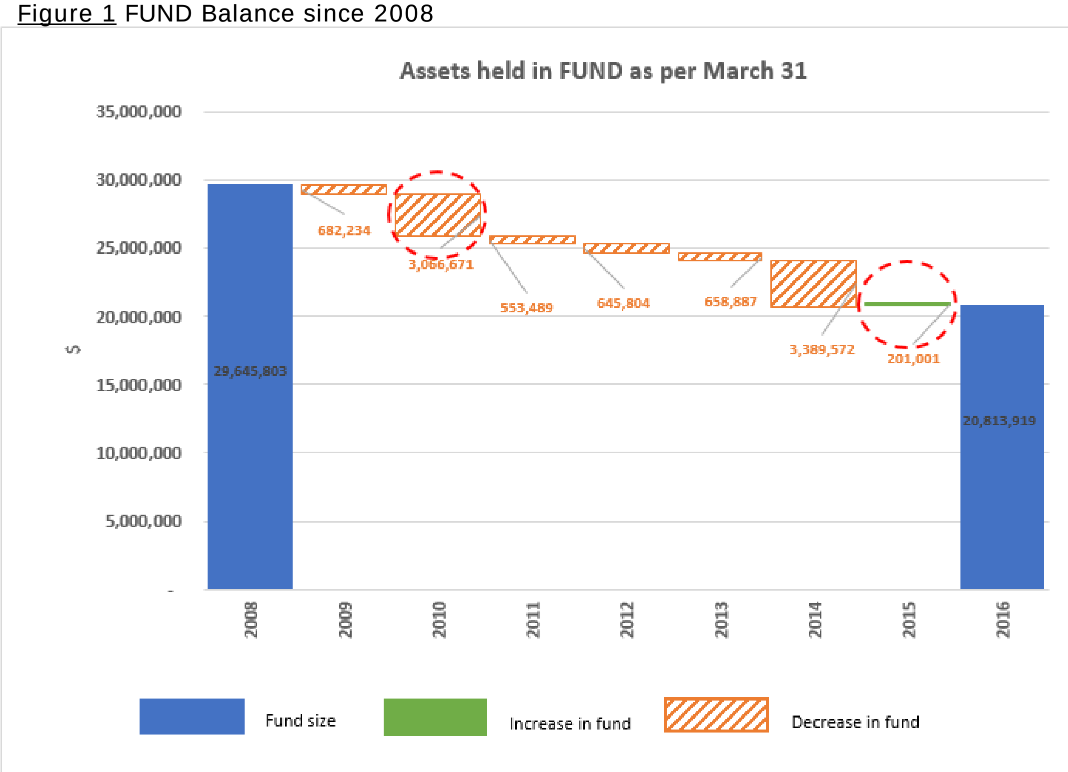
Deloitte met with TICO to determine how to appropriately extract the data in a way that could be used in the analysis, validated micro and macro parameters to use in the analysis, gathered Quebec Fund Data and sent out a survey to Canadian Association of Tour Operators (CATO) Ontario members to obtain additional data that could be used in the analysis. Furthermore, Deloitte held discussions and collected documentation to understand TICO's claims process, financial bench reviews, key performance indicators and details of the unusual large loss hits to the FUND. These key themes are discussed in this section.

B.1.1 Current FUND Levels

Deloitte has assessed the FUND balance for the past 10 years using TICO's annual reports while also leveraging 20 years of data on historical failures for both Registrants and non-Registrants.

As evidenced by Figure 1, the size of the FUND has been decreasing over time mainly due to large losses experienced during 2010 and 2014. However, even in the absence of large claims, the FUND has seen a declining trend in the current environment as Registrant fees and investment income have generally fallen short of covering claims and expenses. It is worth noting that in the past three fiscal years (including Fiscal 2016/2017), TICO has experienced a turnaround and has generated an operating surplus.

Figure 1 FUND Balance since 2008



B.1.2 Quebec Fund levels

Deloitte has examined the structure of the Quebec Travel Compensation fund to understand how the funding mechanism compares against that of the TICO FUND. Quebec charges consumers $1 per $1,000 of sales compared to TICO's current rate of $0.25 per $1,000 of sales[3]. TICO which is exclusively funded by Registrants. The P&L in Table 1, taken from Quebec's Annual Reports since 2010, indicates that the Quebec claims and expenses are consistent with TICO however, the Quebec fund has remained in a surplus position each year.

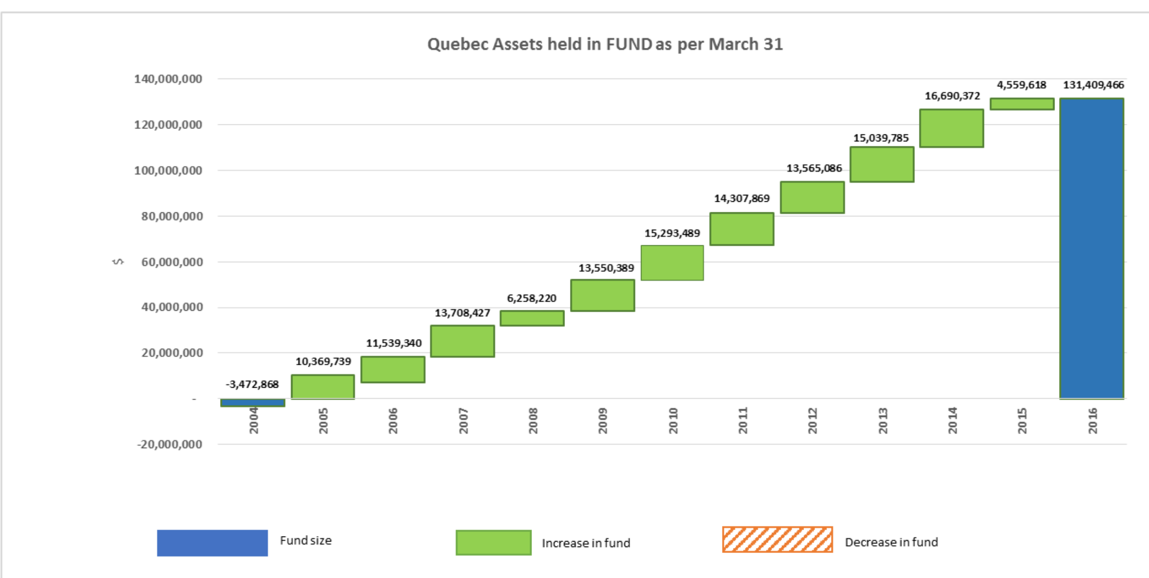
Table 1: Quebec Profit and Loss (P&L) for years 2010 - 2016

Quebec Income Statement ending March 31, 2016

INCOME	2016	2015	2014	2013	2012	2011	2010
Travel Agent Customer Contributions	3,713,077	3,777,249	7,110,531	7,163,219	12,213,123	11,602,326	10,840,068
Investment Income from funds held	2,747,013	14,176,851	10,843,985	6,290,310	4,158,182	5,847,146	1,403,749
Investment Income from Term Deposits	9,217	10,721	10,939	2,388	-	-	-
	6,469,307	17,964,821	17,965,455	13,455,917	16,371,305	17,449,472	12,243,817
EXPENSES							
Net Trust Claims and expenses	992,093	370,058	2,264,675	(624,188)	1,683,926	1,714,608	289,508
Administrative Fees							
Consumer Protection Office	660,505	659,510	466,289	425,000	200,000	300,000	300,000
Advertising and Promotion	245,117	215,634	163,126	50,045	164,914	95,248	62,941
Professional Services	11,200	28,480	30,823	39,629	14,477	45,368	-
Office Expenses	774	767	757	345	119	759	-
	1,909,689	1,274,449	2,925,670	(109,169)	2,063,436	2,155,983	652,449
NET INCOME AND COMPREHENSIVE INCOME	4,559,618	16,690,372	15,039,785	13,565,086	14,307,869	15,293,489	11,591,368

Deloitte has observed that the total amount of claims paid by the Quebec fund are around $9M since inception. This figure seems reasonable and consistent with the amount of claims that have been paid by TICO's FUND since inception ($13M). Figure 2 shows the fund Balance and the surplus to the FUND

Figure 2 Quebec Size of Fund from 2004 - 2016



[3] Refer to Section A.1.2 of this Report for TICO fees since inception

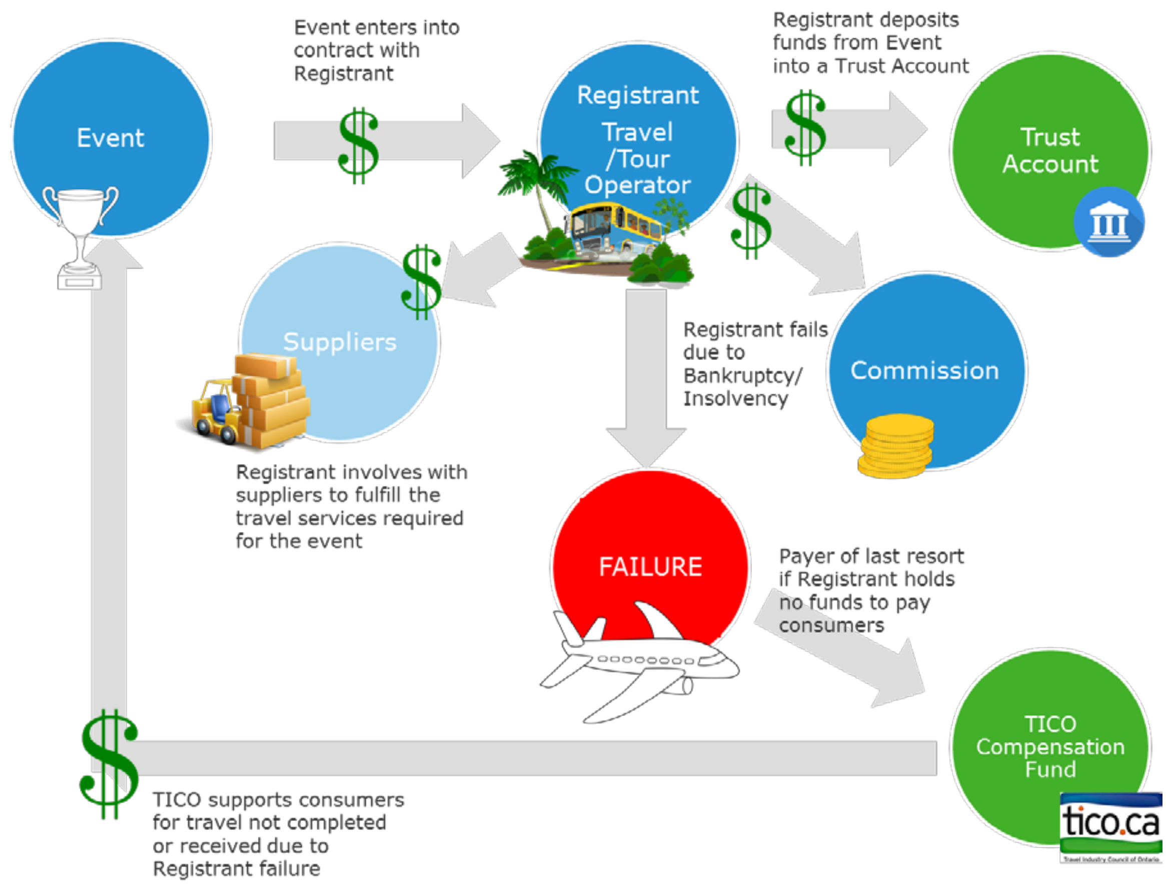
each year since 2004. The current FUND balance of $131M is consistent with the Deloitte projections made in Section B.5.6 of this Report.

Key Finding #1: The experience of the Quebec fund can be used as a benchmark for the Consumer Protection Fee that is being considered in Ontario's comprehensive review of the Act and Regulation. A Fund size in excess of $130M is a likely scenario if the full amount of the Consumer Protection Fee ($1 per $1,000 of sales) is maintained.

B.1.3 Large Losses

TICO has suffered two losses that were significant hits to the FUND, totaling around $4M. Deloitte has investigated each case separately to better understand TICO's exposure to large failures and to understand whether or not TICO should expect claims similar in nature to occur in the future. Figure 3 illustrates a scenario in which a large loss can occur and the resulting consequences to the FUND as a result.

Figure 3 Large Loss Ecosystem



A Registrant must deposit all monies received from a customer for travel services into a Trust Account. However, a Registrant that is entering a state of insolvency will most likely not follow this procedure resulting in fraud as consumer monies that should have been in the trust are misused. Deloitte's discussions with TICO and a review of the claims' files suggest that a handful of the major losses could be considered outliers. Further comments on the relevance and inclusion of large losses as required for our actuarial modelling can be found on the Analysis section.

Key Finding # 2: Even though large losses can be considered outliers, it is unwise to remove them from the modelling of future expected losses. TICO is still responsible for the reimbursement of consumers due to Registrant failure up to a maximum of $5M and an additional $2M for repatriation. These large losses will be used to stress test the size of the FUND and are considered worst-case scenarios.

B.1.4 CATO and Consumer Survey

TICO submitted a request to the wholesale Registrants that are members of the Canadian Association of Tour Operators (CATO) asking them to complete a Deloitte study survey. The aim of this survey was to identify the distribution of Ontario Sales by quarter, the percent of online bookings, method of consumer payment, consumer payments vs end supplier duration of time between end supplier payment and customer travel. Deloitte also requested Registrants to rank the risk of their business (high, medium or low) in different environmental situations. In addition to the responses we received from this survey, TICO requested IPSOS to undertake a Consumer Research Survey (around 750 respondents) to understand consumer awareness of the FUND and the interest in increasing coverage. This included tolerance thresholds for a consumer pay model.

The results of CATO survey and Consumer Research findings were consistent with one another, and Deloitte has drawn upon these results to support the findings in this report. In particular,

- Consumers are likely to accept an increased fee of $1 per $1,000 in sales for expanded coverage
- The Majority (more than 90%) of bookings are made by credit card
- On average, consumers have taken 2.6 pleasure trips in 12 months
- Within the last 12 months, Consumers have taken 2.6 pleasure trips within Ontario (27%), US (26%), Canada (16%), Caribbean (15%), Europe (9%)
- Travel to the US has marginally declined from previous years

CATO respondent groups were diverse in sales volumes; therefore, they were divided into two groups: Small and Large.

The CATO respondents rated the risks to their business on a scale from 1 to 3. Figure 4 illustrates the average response from all members, with adverse movements in FX rates being rated as the highest risk. The increase in incident of fraud was considered a low risk amongst most Registrants, and the increase of price of fuel and other surcharges were considered medium risk. There were variable responses for the risk of competitive pressures arising from Online Travel Agencies (“OTA”) and other new business.

Figure 4 CATO Respondent's Average Risk Rating (0 = no risk; 3 = high risk)

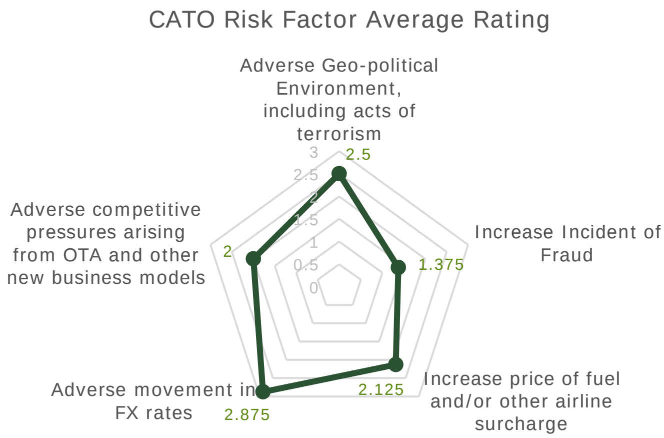
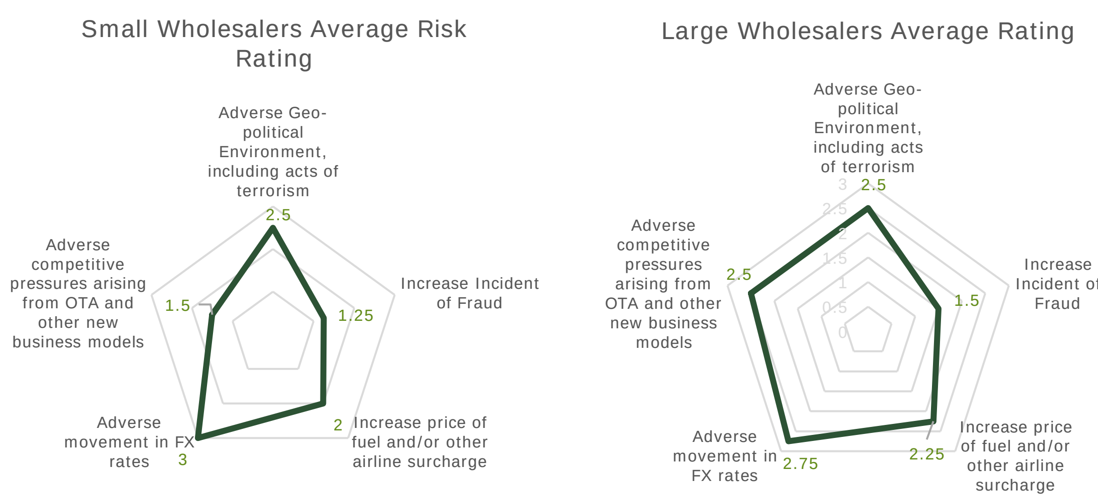


Figure 5 shows the responses split by group: small vs large wholesalers. Small wholesalers generally rated business risk as being lower across all areas, with the exception of movement in FX rates, which they have rated higher.

Figure 5 CATO Respondents' Average Risk Rating for small vs large Retailer/Wholesaler



Key Finding #3:

1. Since 2012, total Ontario gross sales for the survey respondents has increased each year. The year with the largest growth was from 2014 to 2015 (9.7%) and the year with the lowest growth was from 2012 to 2013 (1.6%).
2. The percent of transactions paid by credit card has been consistently in the range of 90-93% over the past five years. There is no discernible trend.
3. The percent of transactions paid through online booking has been consistently in the range of 29-31% over the past five years. There is no discernible trend.
4. Two risks were identified as having a potential "High" impact on the health of the travel industry: adverse geopolitical environment (e.g., acts of terrorism) and adverse movement in exchange rates.
5. One risk was identified as having a "Low" impact on the health of the travel industry: increasing incidence of fraud.

B.2 Risk Parameters

Deloitte and TICO held several meetings to determine the micro and macro parameters exposing TICO to risk. These factors were discussed and agreed upon with TICO, and are considered in the analysis in Section C.4 of this Report.

Risk Factor	Description
Competitive Risk	Travel is a highly competitive industry and consolidation is a threat to the smaller and more traditional business models. The impact of competitive pressures from the use of internet for travel bookings, and business and financial pressures, represents a risk to TICO. Many business models exist which rely on the internet - including those of Large Registrants. Home based Agents have different models as they are independent contractors who do not have real estate costs. TICO faces financial risks because of the low margins for these business models. The risk in particular is due to the shrinking base of Registrants and the risk of non-provision of travel service because of a (non-fraud) bankruptcy or other cessation of business. The risk of unregulated travel sellers is growing – those that are not within TICO's jurisdiction or those that choose to take the risk of operating as an unregulated seller – which creates a competitive risk environment for all regulated businesses.
Fraud/Cyber Crime	Recent trends show that internet booking is the preferred method of booking travel and 93% of all transactions are through credit cards. TICO is exposed to risk of Fraud and Cyber-crime and has experienced several cases of identity theft and credit card scams. The internet has triggered and will continue to drive the transformation of the travel industry. Some of this transformation will be disruptive to traditional Registrants who do not or cannot change, while other Registrants will seize the opportunity. The internet also impacts consumer purchasing behaviour and travel industry sales through consumer purchasing decision process.
Capacity	Capacity management, such as over or under-booking, for tour operators in terms of booking rooms and airlines is a significant factor causing disruptions in consumer travel. Primarily for vertically integrated airline/tour operators, capacity can make or break profitability. This in turn can have a dramatic impact on the funding sources for TICO as these are revenue driven.
Regulation	The travel industry is heavily regulated which can prevent new business entrants and impact the sustainability of Registrants. Too much regulation can also drive the "underground" market in which travel is sold by unregulated businesses. The underground market is a significant risk to TICO, both financially and reputational.
Fuel & Currency Risk	The travel industry is affected by oil and currency fluctuations. Tour operators will often pass on a surcharge to the consumer when prices are high (e.g., fuel surcharges). Additionally, operators cannot change the price to the consumer once it is sold. Where margins are very thin to begin with, market fluctuations can lead to weakened financial results. While some Registrants hedge these risks, others do not have the sophistication to do so; this leaves some Registrants vulnerable to major shifts in price, or changing consumer preferences (i.e., to different destinations). TICO's regulations provide some price protection to consumers but cannot protect against this risk in the long run.

Geo / Political	The travel industry is highly affected by events that are difficult to predict such as terrorism, Brexit, and the ZIKA virus. However, these events will likely not affect major tour operations because they will re-direct the traffic to other areas. This risk is particularly felt by those Registrants who focus on one market (e.g., SUN) or one destination (Africa). Lack of diversification increases the risk of failures.

In addition to the micro and macro parameters indicated above, financial measures can be used to indicate risk of failure.

TICO's financial performance indicators are:

- Sales
- Net Profit / Loss
- Equity
- Working Capital
- Deposits from Registrants
- Net Surplus (Deficit) of Trust Account(s)
- Shareholder Loans and
  Deposits, Trust Accounts

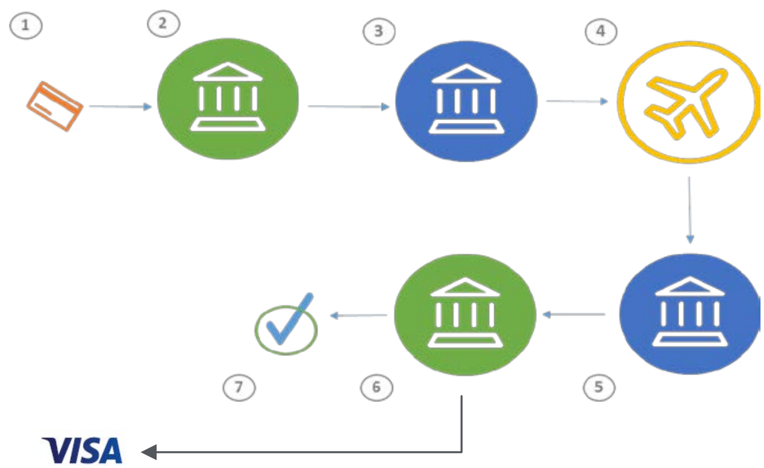
Section A.1.4 above and Section B.7 on predictive modelling refer to the use of these financial parameters in the actuarial study. Definitions of these Financial Performance Indicators are available in Appendix D.

B.3 Chargebacks

B.3.1 The chargeback lifecycle

Chargebacks are the return of funds from a credit card merchant to a customer who successfully disputes a credit card transaction. Chargebacks are an important factor influencing the size of the eventual claim against the TICO FUND. To understand how chargebacks influence the claims made against the FUND, it is worthwhile looking at a "typical chargeback lifecycle" as seen from the major credit card issuers[4]. The diagram below explains a credit card dispute resolution in detail.

Figure 6 Chargeback lifecycle



The steps in the process are explained below:

1. The cardholder disputes a transaction.
2. The issuer bank of the credit card asks the cardholder for an explanation of the dispute, then sends the transaction back to the acquirer / merchant bank.
3. The merchant bank receives the chargeback dispute and has the option to resolve the dispute or to forward it to the merchant.
4. The merchant either accepts the chargeback item or addresses the chargeback request giving explanations as why this is rejected.
5. The merchant bank reviews the information received from the merchant. If the merchant bank agrees that the merchant information addresses the chargeback, the merchant bank releases the chargeback to the issuer bank.
6. The issuer bank will re-post the transaction to the cardholder's account.

If the merchant / merchant bank does NOT agree to release the chargeback, the issuer bank may submit a pre-arbitration case for a financial liability decision. If the dispute cannot be solved via pre-arbitration, the issuer may finally submit the dispute to the credit card company (VISA, MasterCard, American Express, etc.) asking for a financial liability decision.

[4] VISA, Chargeback Management Guidelines for VISA merchants 2015 and Deloitte

In most cases, the credit card company decision on who is liable is final and must be accepted by both the bank issuer and the merchant issuer. The future reliance on a chargeback remedy for consumers is uncertain at best. Changes to current merchant/credit card agreements, issuer policy decisions, other market disruptors etc. will influence the availability of future chargeback policy. In other words, a chargeback is a policy decision, and not a guarantee.

The simplified process described above highlights the thoroughness leading credit card companies have in place in order to make sure consumer disputes are processed in a structured and timely manner. This review of the chargeback process guided the actuarial assumptions used in projecting the loss amounts in future years.

B.3.2 TIA Consultation report Phase 1

The Ontario Government recently launched a consultation of the *Travel Industry Act* (TIA) and the regulation that is under review for the first time in almost 20 years.

The overall goal of the Phase 1 consultation report is to have an open discussion on what the risks related to travelling are today, who is involved in travel, how travel is booked and whether or not the TIA adequately addresses the needs of consumers and business today. Further details can be found here: https://www.ontario.ca/page/review-travel-industry-act-summary-phase-1-consultations.

The topic of credit card chargebacks is addressed under *Key Findings 1: Consumer Protection Issues*. There is widespread belief amongst consumers that credit card companies currently offer coverage for travel services that are purchased through a credit card but which are not provided in actuality, even in the case of insolvency.

Furthermore, some stakeholders have stated that the availability of this perceived recourse has created redundancies in requirements under the TIA.

In order to corroborate these statements, Deloitte has researched and analyzed credit cards terms and conditions issued from leading Canadian financial institutions. Merchant manuals and reward programs were also part of the analysis.

B.3.3 Credit Cards / General Terms and Conditions[5]

The table below summarizes terms and conditions of leading credit cards as well as reward programs and merchant agreements. A set of Credit Card liability exclusions can be found in Appendix E.

As it can be seen, the vast majority of providers explicitly exclude many types of travel supplier liabilities. In particular, failure arising from travel supplier insolvency or failure is mentioned across all samples.

Deloitte also observed that the more up-to-date terms and conditions are more explicit in terms of excluding travel supplier failure from the coverage.

As an example, the General Exclusions from American Express Green Card dated January 1, 2017, states:

"Number 13. The refusal, failure or inability of any person, company or organization, including but not limited to a travel agent, tour operator, accommodation provider, airline or other carrier, vehicle

[5] MasterCard, Chargeback Guide May 2016

rental agency or any other travel or tourism services provider to provide services or accommodation due to their Insolvency or the Insolvency of any person, company or organization they deal with."

Further, reward programs such as RBC Rewards have also incorporated exclusions as follows:

"*In no event will we be liable or responsible for, and you release us from, all claims in respect of any loss or damage suffered in connection with the Program, by you or others, that is caused by: ….*

… Failure of any party to honor a gift certificate/card, RBC Financial Rewards voucher or e-certificate for any reason, including the insolvency or bankruptcy of that party."

Credit Cards and Rewards – Terms & Conditions overview

Credit card / Rewards Program	Issuance Date	Explicit exclusions of travel suppliers liability?	Explicit mention of travel supplier insolvency?
TD First class Travel	Unknown	Yes	No, but failure mentioned
BMO World Elite	06/2016	Yes	Yes
CIBC Infinite Aventura	06/01/2016	Yes	Yes
American Express Green Card	01/01/2017	Yes	Yes
ScotiaCard, Cardholder Agreement	Unknown	No	No, but failure to provide services mentioned
RBC Rewards Program	10/2016	Yes	Yes
Diners International, Club Rewards	2015	No	No, but failure to provide services mentioned
Mastercard Merchant Chargeback Guide	05/10/2016	Yes	Yes
VISA Chargeback Management, Guidelines for Merchants	26/10/2015	No	High Brand Risk Chargeback Monitoring program (HBRCMP) where travel services are included

Key Finding #4: In Deloitte's view, it is highly likely that leading credit cards and rewards programs General Terms and Conditions will end up excluding liability arising due to the failure, insolvency or inability to perform a service from a travel agent, tour operator, accommodation provider, airline or other carrier.

B.3.4 Travel Insurance / Trip cancellation

A small sample was conducted by the travel insurance industry and, in particular, focused on trip cancellation policies. The results were consistent with Deloitte's findings in that travel suppliers' insolvency is excluded from the liabilities insurance companies carry. It is interesting to note that leading insurance carriers have been excluding insolvency of travel suppliers since 2009.

Travel Insurance – Terms & Conditions Overview

Coverage provider	Issuance Date	Explicit exclusions of travel suppliers liability?	Explicit mention of travel supplier insolvency?
CAA Travel Insurance	02/06/2017	Yes	Yes
RSA Medoc Plan	09/2010	Yes	Yes
Intact Travelwell Policy	2009	Yes	Yes

Key Finding #5: It appears that leading travel insurance carriers General Terms and Conditions exclude liability arising due to the failure, insolvency or inability to perform a service from a travel agent, tour operator, accommodation provider, airline or other carrier.

Zero Liability policies and Chargebacks.

Zero Liability policies protect credit cardholders who have a Canadian issued credit card and have experienced *fraud through the unauthorized usage of their card.* A purchase of an airplane ticket, for example, is not an unauthorized usage of a credit card unless it is a fraud or the credit card has been stolen to realize the purchase.

As such, chargebacks and zero liability coverages serve very different purposes.

B.3.5 Historical chargebacks

TICO has provided Deloitte with historical claims statistics which show the percentage of chargebacks over the last 20 years were approximately 9.47% (or $1.3M) against total claims paid of $13.2M.

Furthermore, the historical amount corresponding to (miscellaneous) abandoned claims rises to 41% (or $5.65M) against total claims paid of $13.2M, or 22% when compared with the total amount claimed of $25.3M.

The main reasons for claim abandonment can be summarized as follows:

- Wrong claimant (new claim form would have been sent to the appropriate claimant – the person that paid)
- No response – after months of asking for additional supporting documentation to prove a claim, TICO received no further response from the claimant
- Claimant reimbursed by third party – credit card company provided a chargeback or claimant was reimbursed by Trustee
- Restitution received – consumers are part of a prosecution that resulted in restitution for the consumer prior to the claim being presented to the Board for its consideration

- Ineligible – claim is filed but classified as ineligible for various reasons (i.e., filed late, cost, quality value of services received or claiming for vouchers with no cash value).

During the claims process, the claimant is provided with correspondence outlining the eligibility provisions and given the option to have their claim presented to the Board or abandoned. Thus, there is potential for claims to be reopened but this has been almost negligible over the years.

Key Finding #6: Historical chargebacks correspond to 9.47% (or $1.3M) against total claims paid of $13.2M.

B.3.6 Deloitte modelling of chargebacks

Based on the analysis of more recent General Terms and Conditions for credit cards, loyalty programs and travel insurance, Deloitte believes that, going forward, the amount of chargebacks will likely be reduced and could be in the range of 4% to 6% of total amounts claimed.

For modelling purposes, chargeback amounts were assumed to be 4.5% of total expected losses in each year of the 10-year projection. The chargeback assumption was also stress tested in Section B.6 by considering a scenario wherein lower chargebacks give rise to higher historic claims which has the effect of increasing the assumed average claim size for modelling purposes.

It is also worth mentioning that a minor change in the percent of claims abandoned (for example, on the category “No Response”) could have a significant effect on eligible claims being settled against the FUND. Consumers might well follow-up with TICO when being informed that their credit card issuer is not covering events caused by the insolvency of travel agents, wholesalers, or airlines and cruise lines.

B.3.7 European trends

Itemized ticket costs, as well as the prevalence of non-refundable credit card charges, might very well account for the lower percent of online purchases via credit cards in Europe compared to North America. In Europe, credit card charges have been in place for many years now, and the airlines / travel carriers have passed the cost of using credit cards onto consumers. This may be a temporary phenomenon, as new European rules banning card surcharges become effective in 2019.[6]

Another significant European trend is the introduction of alternative payment methods such as bank transference using the International Bank Account Number (IBAN), debit cards, PayPal and other electronic payment platforms whereby credit card charges are avoided. Appendix F shows two quotations for travel services from two leading European airline carriers, one traditional airline and one low-cost carrier. Additional ticket cost for the usage of credit cards for pan-European flights ranges from EUR 6 to EUR 9.95, or CAD 9 to 15. For continental flights, costs are often double and credit card charges are non-refundable to the consumer.

TICO’s proposed CPF of $1 per $1000 of travel purchase, would account for less than 10% of existing credit card fees in Europe or elsewhere. Deloitte sees this as a nominal fee representing value for money to the consumer.

[6] http://europa.eu/rapid/press-release_MEMO-16-2162_en.htm

Deloitte is of the opinion that, in the mid-term, TICO is unlikely to see any material change in the percent of travel online purchases using credit cards, currently in the 90% to 93% region. Only the introduction of itemized ticket costs, for example, could result in significant changes to the current trends.

B.4 Trust Accounts and Security Deposits

Under current TIA regulation, it is mandatory for Registrants to maintain a trust account. The purpose of trust accounts are to protect customer monies from being misused for reasons other than the purchase of their travel services. The money that goes into this account does not belong to Registrants but rather is intended to be used solely for the purpose of protecting customers' purchases. Trust accounts for the largest Registrants can reach levels in excess of $200 million.

The current Travel Industry Act requires Registrants to maintain trust accounting. TICO Registrants must therefore maintain a trust account and have their bank specifically acknowledge that the trust account is properly designated as a trust.

As per the Registrant comments collected on the *Travel Industry Act: Summary of Phase 1 consultations* dated February 2017, since many transactions are purchased via credit card, many TICO Registrants were critical towards the trust accounting system. Even when paying by cash, trust accounting was perceived as complicated, onerous and costly.

Echoing TICO's Registrants' opinions and the experience gathered since the introduction of trust accounting[7], TICO has proposed to eliminate the trust accounting mechanisms (page 36 of *Comprehensive review: recommendations for modernization* submission to the government dated April 13, 2017).

At the same time, on Page 38 of the above mentioned submission, the introduction of enhanced security deposits is proposed as an alternative mechanism to replace trust accounting. In summary:

- Existing deposits from Registrants, initially to be maintained by TICO for two years and amounting $10,000, will be maintained for the life of the TICO license.
- Current security deposits, amounting approximately $3.2 million, will be extended from two to five fiscal years.
- After five years, the security deposits will be calculated as percentage of Ontario Gross Sales up to a maximum of $100,000.

Throughout the period of this actuarial study, Deloitte has been working with TICO to explore mechanisms and alternatives that would better align interests and share risk with TICO Registrants. Contrary to Registrants' impressions, current trust accounts DO carry significant exposures and therefore a security mechanism that better aligns with Registrant exposure is sensible.

[7] Supporting this, TICO commissioned a report in 2015 that was intended to understand the workarounds of trust accounting for a registrant that had filed insolvency under the Company's Creditors Arrangements Act (CCAC). A key outcome of the report was that the only way to achieve absolute certainty that the customer funds would not be available to the Company's creditors in the case a company fails, was to obtain a declaration from a CCAA Court clarifying that the charges do not extend to the TIA trust accounts (or in other words, that the customers' money cannot be used for other purposes).

Finally, under a low interest rate environment, the introduction of higher security deposits will also allow TICO to generate higher investment yields, thus further contributing to TICO's financial strength. Deloitte has assessed that the introduction of this enhanced security mechanism can, all other things being equal, easily triple TICO's current investment returns of currently $0.5 million.

Key Finding #7: Deloitte is supportive of the suppression of Trust Accounts and the transition to increase security deposits as a measure of aligning interests and sharing risk with TICO Registrants.

B.5 Methodology

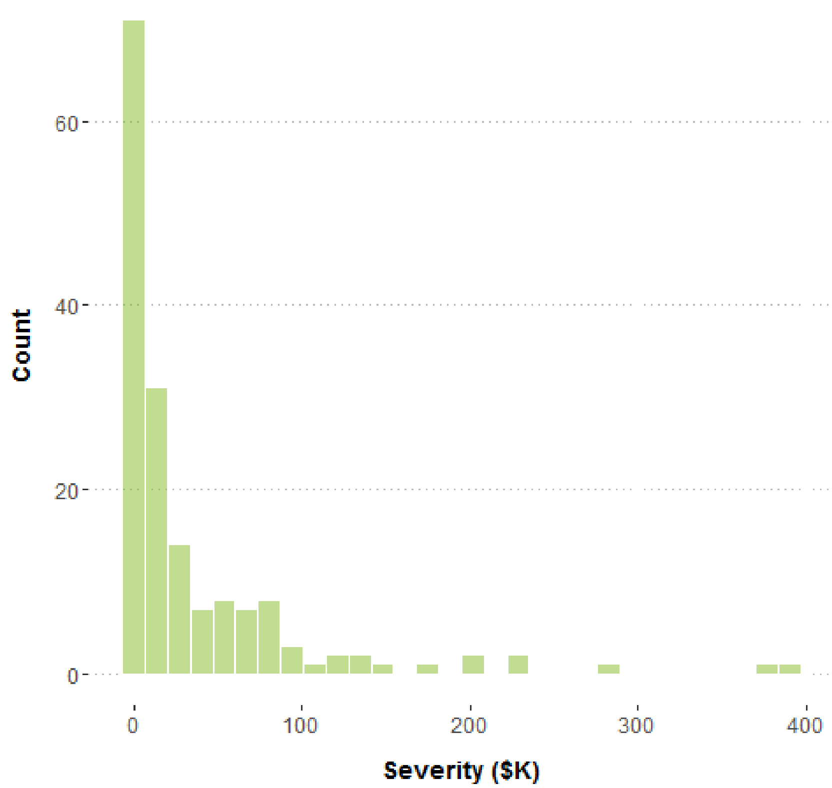
B.5.1 Severity

Severity is defined as the dollar amount of claims paid (not including recovered amount) in a Registrant and/or end-supplier failure. The severity distribution has a thick tail with 95% of the claims less than $400K. As a result, severity was categorized into two groups which were modelled as separate distributions. “Normal” failures were those which had a total claim amount of less than $400K, and “large” failure were those which had a total claim amount greater than $400K. Modelling them as separate distributions allows for a better fit and results in a more accurate prediction of future FUND levels.

Figure 7 displays the severity distribution of failures that were less than $400K while Figure 8 presents the severity distribution for failures greater than $400K. Each chart shows the count of failures that occur within specific intervals. As an example, Figure 7 tells us that there were approximately 70 failures that occurred between $0 and $13K.

Normal failures have a right-skewed distribution with the most common group being between $0 and $13K. A right-skewed distribution means that there were many failures with a small dollar amount and fewer failures with a large dollar amount.

Figure 7 Severity of Normal Failures

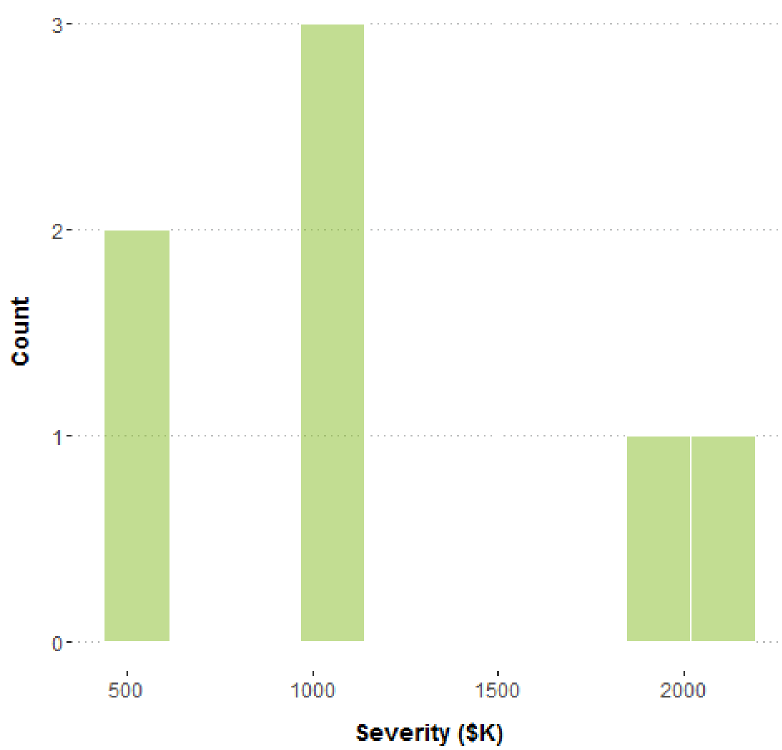


There were only seven failures larger than $400K during the past 20 years. Since there were fewer large losses than normal losses, it was not possible to rely heavily on historical data to predict future events. Therefore, in the modelling, it was assumed that:

i. Large failures could be greater than $2M. The largest failure ever seen by TICO was $2M but logic would dictate that larger losses can occur.
ii. Losses of $500K are more common than losses of $1M. According to Figure 8 this is not true, likely due to a small sample size. Again, logic would dictate that the opposite is true.

It is important to include large failures in the simulation of expected losses and the projection of the level of the FUND. Even in the event that these historical large failures are seen as outliers, TICO must be able to administer these events in the future.

Figure 8 Severity of Large Failures



Key Finding #8: The severity of expected future losses will be split into two distinct groups: normal losses and large losses. Each group of losses will have a separate assumed distribution which will be used in a Monte Carlo simulation.

B.5.2 Frequency

Frequency is defined as the number of failures in a fiscal year and has been categorized into four distinct groups. Each group is modelled as a separate distribution:

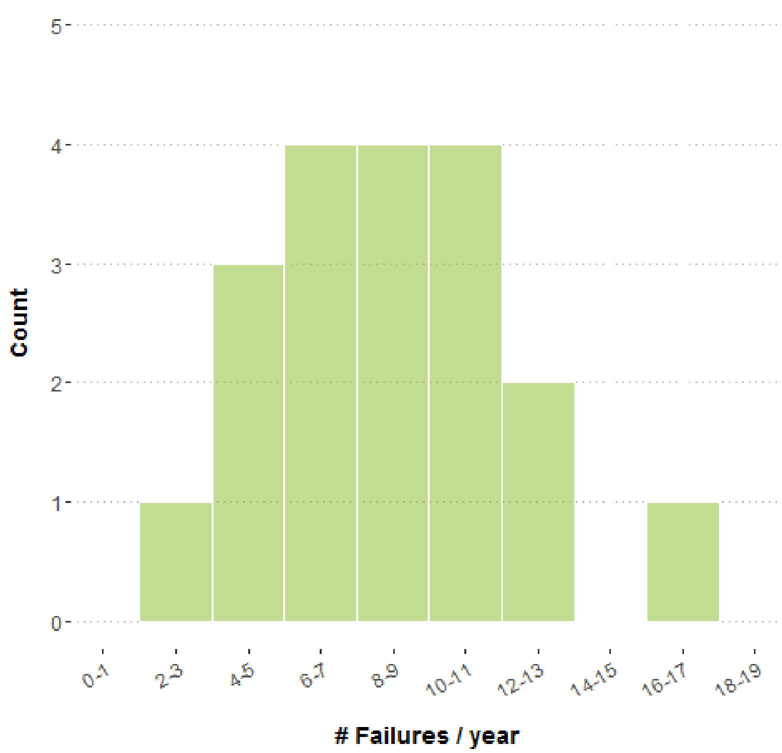
1. Normal Registrant failures
2. Large Registrant failures
3. Normal non-Registrant failures
4. Large non-Registrant failures

There were two reasons that four groups were chosen to model the frequency of Registrant and non-Registrant failures. First, severity has been split into normal and large failures, which in turn also requires a separate distribution for frequency. Second, the number of Registrant failures is dependent on the number of Registrants (i.e., the more Registrants, the higher the number of failures). This does not hold true for the number of non-Registrant failures. As a result, a different distribution was assumed for Registrants than for non-Registrants. Splitting the frequency distribution into four categories was performed due to necessity and provided for a more accurate representation of future events.

Figure 9 displays the frequency of failures that were less than $400K and Figure 10 presents the frequency of failures greater than $400K. Each chart shows the count of the number of failures in a given year. As an example, Figure 9 tells us that there were three separate years that had four or five failures.

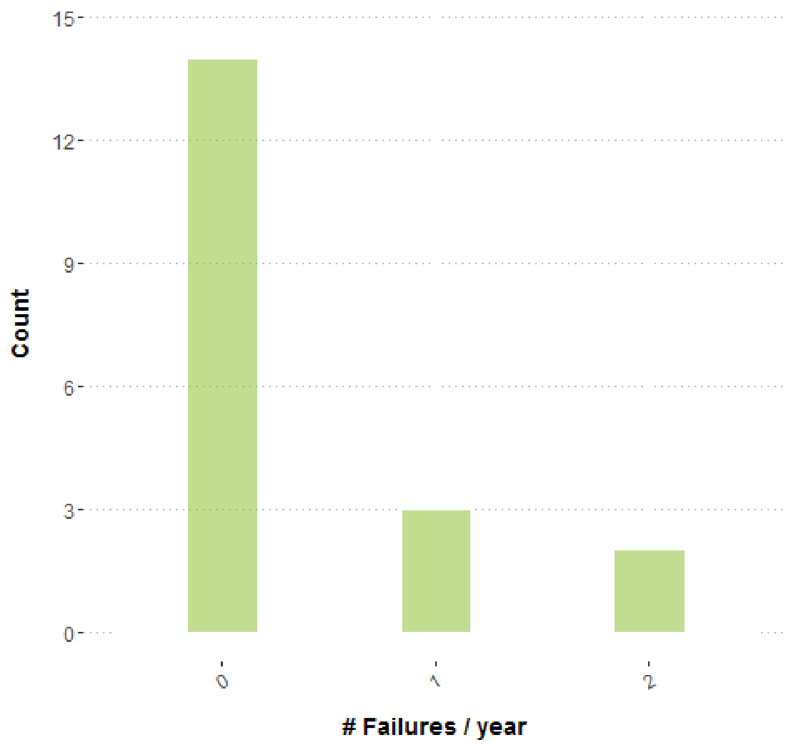
The frequency of normal failures follows a bell-shaped distribution with the most common number of failures in a year being within the range of six to 11. Having less than six or greater than 11 failures in a given year is less common. The year with the highest amount of normal failures (17) was 2001.

Figure 9 Frequency of Normal Failures



The frequency of large failures does not follow a bell-shaped distribution; the most common number of large failures in a year is zero. Historical data suggests that there is a 0% probability of having more than two large failures in a given year; however, Deloitte did not assume that the maximum number of large failures in a given year is two.

Figure 10 Frequency of Large Failures



Key Finding #9: The frequency of expected future losses will be split into four distinct groups: normal losses and large losses for both Registrants and non-Registrants. This will account for the mathematical differences between each group. A separate distribution for each group will be used in the Monte Carlo simulation.

B.5.3 Recovery Percent

Analyzing the historical data, it is evident that the amount that is recovered by TICO depends on the size of the failure. A negative correlation is present, which suggests that as the claim amount increases, the percent that is recovered by TICO decreases. Therefore, the percent that is recovered by TICO has two separate assumptions (based on historical results), depending on whether the failure is normal or large:

i. Normal failures: 24.0%
ii. Large failures: 6.6%

B.5.4 Additional Assumptions

In the procedures for calculating the FUND level, additional assumptions were required for predicting the FUND level over the next ten years.

Loss amounts from previous years were adjusted for both inflation and industry productivity. Historical inflation rates were extracted from Statistics Canada (see Appendix A). Industry productivity was assumed to be a constant 1% for all years. For projecting loss amounts in future years, the assumed inflation rate was 2% which is in line with the targeted inflation rate for the Bank of Canada.

Historically the number of Registrants has been decreasing due to consolidation and vertical integration of the industry despite overall growth in the travel industry. However, in the modelling of losses, the number of Registrants was assumed to stay constant at 2,418 as this was a more prudent assumption since reducing the number of Registrants would also reduce the number of predicted failures.

B.5.5 Aggregate Losses

The aggregate losses were defined as the sum of all losses in a fiscal year minus the amount recovered by TICO. In order to forecast the aggregate losses, Deloitte used the distributions that are assumed for all variables listed in sections C.3.1 – C.3.4. These distributions were combined and a Monte Carlo simulation was performed. 50,000 simulations were executed to determine the distribution of aggregate losses over the next 10 years which in turn were used in the forecast of the FUND level. The graph and tables in this section display the distribution of aggregate losses, for one fiscal year, from the Monte Carlo simulation.

Figure 11 graphs the results of the simulation and provides general insight into the shape and size of the results. The simulated results have a similar, right-skewed distribution when compared to the historical data and peak at around $400-500K. In order to gain deeper insight into the forecasted aggregate losses, percentiles of the distribution were also produced. Table 2 presents key percentiles of the simulation for the first five projection years. The percentile represents the probability that aggregate losses will be less than a given value in a single fiscal year.

Figure 11 Simulated Aggregate Losses in 2017

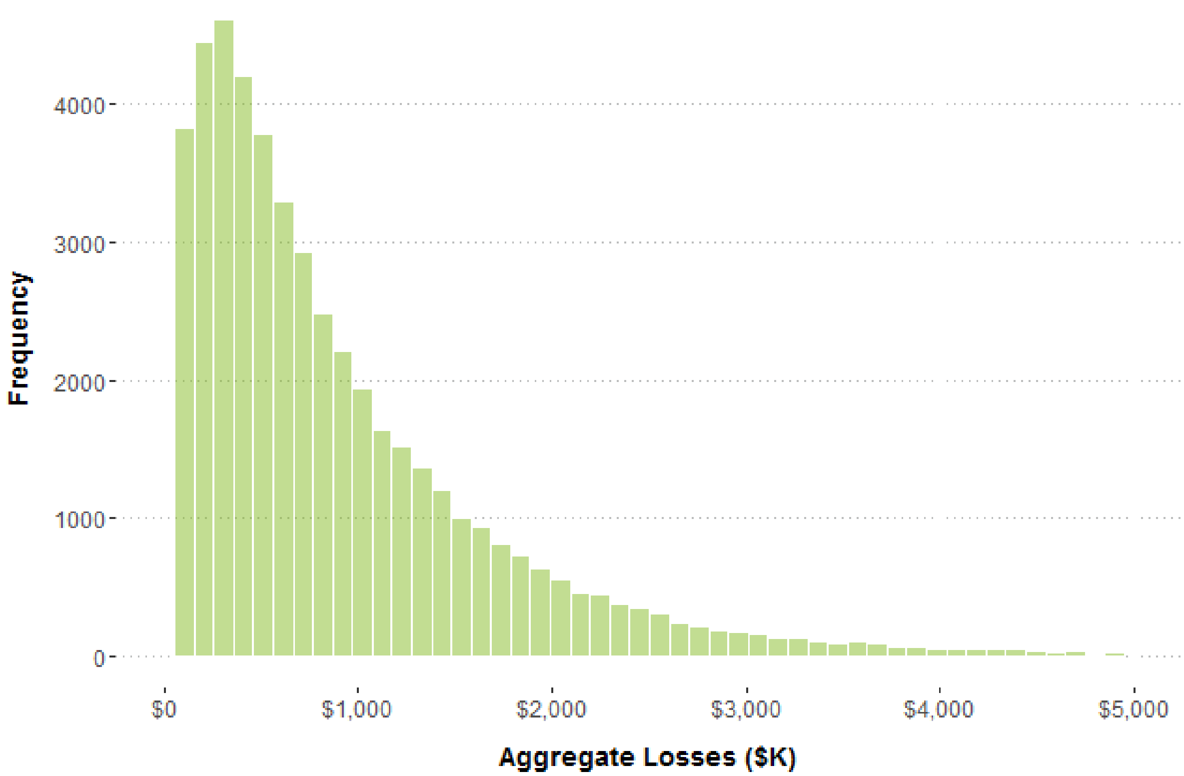


Table 2: Aggregate Loss Percentiles

Percentile	2017	2018	2019	2020	2021
50%	$ 650	$ 670	$ 690	$ 710	$ 730
60%	$ 830	$ 860	$ 880	$ 910	$ 940
85%	$ 1,670	$ 1,710	$ 1,760	$ 1,810	$ 1,870
95%	$ 2,670	$ 2,730	$ 2,830	$ 2,930	$ 3,030
99%	$ 4,560	$ 4,520	$ 4,740	$ 4,940	$ 5,220
99.5%	$ 5,500	$ 5,540	$ 5,700	$ 6,030	$ 6,160
99.75%	$ 6,030	$ 6,120	$ 6,260	$ 6,590	$ 6,870

For example, there is a 50% probability that aggregate losses will be less than $650K in 2017 and a 95% probability that aggregate losses will be less than $2.67M in 2017. Both of these values are highlighted in grey in Table 3 (overleaf).

Note that these probabilities do not extend to multiple years. For example, the probability that the aggregate losses next year will be less than $650K *and* the aggregate losses in the following year will be less than $670K is 25%, not 50%.

Key Finding #10: The median expected losses in 2017 is $650K, with a long tail that is right-skewed. The median expected losses is higher than the normal/large loss threshold since it is expected that there will be multiple failures in each year. The aggregate loss distribution will be used to determine the Target FUND level.

B.5.6 FUND Size Projection

In order to determine the financial health of the FUND managed by TICO, a comprehensive financial projection of the Profit & Loss (“P&L”) was performed. This approach allowed the expected range of the FUND, up until 2026, to be determined.

The “base case” is the starting point for determining the health of the FUND since it uses assumptions that align with the current state of TICO operations, including the current funding mechanism. Additionally, it uses a conservative assumption that the losses seen in all years will be at the 50th percentile. Additionally, base case assumes that inflation is 2% and the travel industry grows at a rate that is 1% higher than inflation. Table 4 (overleaf) displays the “base case” Profit & Loss projection.

Table 3 displays the level of the FUND at five years and ten years after considering a number of different scenarios with different assumptions. This range illustrates the degree to which TICO can influence the level of the FUND with various funding mechanisms. Another important result is the impact that multiple large losses has on the FUND. The scenario that is labelled "Full CPF" refers to an assumed *level* Consumer Protection Fee; the "Variable CPF" refers to a *reduced* Consumer Protection Fee after 2019. The operation of the Consumer Protection Fee is discussed in section B.4.8 below.

Table 3: FUND Projections

Scenario	Five years	Ten years
Base Case (50th percentile, current funding)	$17.5	$13.1
Base Case + 2 large losses	$13.0	$8.0
Base Case + 2 large losses + Variable CPF	$44.2	$47.0
Chargeback/Extension (85th percentile, current funding)	$11.9	$0.2
Chargeback/Extension + Full CPF	$51.0	$119.7[8]
Base Case + Full CPF	$56.7	$132.6[9]

In the base case scenario the FUND is being depleted each year, resulting in a FUND size of $13.1M in ten years. When considering the base case scenario plus the addition of two large losses, the FUND size in ten years is even lower at $8.0M. Both of these scenarios illustrate that at the current funding mechanism and at a reasonable level of losses, the FUND is decreasing every year.

A "Chargeback/Extension" scenario is also considered, which envisages a situation in which the chargeback rate (prior to claiming with TICO) is cut in half, and the losses that hit the FUND are much larger than historical results. This scenario could also cover situations in which the industry experiences a significant shift towards higher losses from changes in legislation, extended coverages or enhanced consumer awareness reduces the amount of abandoned claims. The stress test used in this scenario is consistent with modelling losses at the 85th percentile of the expected loss distribution (85th percentile represents a loss in 2017 of $1,670K). As can be seen from this scenario, the FUND is nearly exhausted in 10 years.

In order to control for this depletion, alternative funding mechanisms are considered. The scenarios that include the Consumer Protection Fee or a variable Consumer Protection Fee resulted in more reasonable FUND sizes in ten years. It is recommended that once a target FUND size is selected, the Consumer Protection Fee is used to accumulate to that level. Once the target FUND size is reached, the Consumer Protection Fee could be reduced to maintain a reasonable FUND level.

[8] This figure is used for illustration purposes. Mechanisms would likely be in place that would cap the FUND at a reasonable level. It is unlikely that the FUND would actually grow to this size
[9] Please refer to footnote 7 on Page 27

Table 4: Profit & Loss for TICO until 2026 (Base Case)

	31-Mar-17	31-Mar-18	31-Mar-19	31-Mar-20	31-Mar-21	31-Mar-22	31-Mar-23	31-Mar-24	31-Mar-25	31-Mar-26
Revenue										
Payments from Ontario Gross Sales	2,690,000	3,090,000	3,088,764	3,181,427	3,276,870	3,375,176	3,476,431	3,580,724	3,688,146	3,798,790
Renewals	1,075,000	1,053,500	1,053,079	1,053,079	1,053,079	1,053,079	1,053,079	1,053,079	1,053,079	1,053,079
New registrants	296,800	290,864	296,681	296,681	296,681	296,681	296,681	296,681	296,681	296,681
Education standard fees	200,000	200,000	204,000	204,000	204,000	204,000	204,000	204,000	204,000	204,000
Total Revenue	4,261,800	4,634,364	4,642,524	4,735,187	4,830,630	4,928,936	5,030,191	5,134,484	5,241,906	5,352,550
Expenses										
Salaries and benefits	2,074,090	2,265,571	2,310,883	2,357,100	2,404,242	2,452,327	2,501,374	2,551,401	2,602,429	2,654,478
Administration	1,464,088	1,414,088	1,300,000	1,326,000	1,352,520	1,379,570	1,407,162	1,435,305	1,464,011	1,493,291
Consumer and registrant awareness	734,500	834,500	884,500	902,190	920,234	938,638	957,411	976,559	996,091	1,016,012
Inspections, compliance and investigation	632,489	685,139	698,842	712,818	727,075	741,616	756,449	771,578	787,009	802,749
Cost of Reinsurance	0	0	0	0	0	0	0	0	0	0
Total Expenses	4,905,167	5,199,298	5,194,224	5,298,109	5,404,071	5,512,152	5,622,396	5,734,843	5,849,540	5,966,531
Operating Income	-643,367	-564,934	-551,700	-562,922	-573,441	-583,217	-592,205	-600,360	-607,635	-613,981
Investment Income	643,590	627,330	612,044	596,360	579,497	561,341	541,882	521,055	498,960	475,373
Operating Income + Investment Income	223	62,395	60,344	33,438	6,055	-21,875	-50,323	-79,305	-108,675	-138,608
Claims										
Aggregate Losses	650,623	673,807	687,696	707,997	732,258	756,506	782,763	804,482	834,806	855,988
Expanded Coverage	0	0	0	0	0	0	0	0	0	0
Total Claims	650,623	673,807	687,696	707,997	732,258	756,506	782,763	804,482	834,806	855,988
Net Operating Income	-650,401	-611,411	-627,352	-674,558	-726,203	-778,381	-833,086	-883,786	-943,481	-994,596
End of Year Assets										
TICO Capital	1,629,664	1,629,664	1,629,664	1,629,664	1,629,664	1,629,664	1,629,664	1,629,664	1,629,664	1,629,664
TICO Fund	20,163,518	19,552,107	18,924,755	18,250,197	17,523,994	16,745,612	15,912,526	15,028,740	14,085,259	13,090,663
Total Assets	21,793,182	21,181,771	20,554,419	19,879,861	19,153,658	18,375,276	17,542,190	16,658,404	15,714,923	14,720,327

B.5.7 Investment Income

Under the current legislation, TICO currently holds a security deposit of $10,000 from each Registrant for two years. There have been recommendations made by TICO under the TIA consultation process for enhancements to this security deposit which would increase the amount of funds that are currently held by TICO. TICO cannot use these security deposits to support failures by other Registrants; however, in the event that the funds held by TICO increases then the amount of investment income would also increase.

TICO has proposed an additional security amount of 0.5% of cash sales up to a maximum of $100,000. This would increase the security amount currently held by TICO from $3.3M to $18.5M. This increase in funds would likely occur gradually from 2019 to 2020. If this is the case then this would increase the FUND by $3M at the end of ten years.

Key Finding #11: Increasing security deposits would align interests and share risk with TICO Registrants. The current security mechanism of a flat fee favors large Registrants. This proposed mechanism would alleviate some of this inequality by requiring larger Registrants to pay more in security deposits.

B.5.8 Consumer Protection Fee (CPF) and Alternative Funding Mechanisms

The method by which TICO will replenish the FUND needs to be modified if TICO is to achieve its objectives of:

1) Achieving an operating income level greater than, or close to zero (i.e. break-even)
2) Accumulating funds to reach the desired Target FUND level

The first option proposed by TICO to the government involves a fee applied to consumers. The fee would begin at $1 per $1,000 of sales. Afterwards, and once the Target FUND level is reached, consumer fees would be approved by the Board of directors at TICO at a level required to ensure the FUND level is maintained, and not grown to excess levels. This mechanism allows TICO to achieve both goals outlined above.

In the event that the CPF is not implemented, an alternative funding mechanism would need to be applied. One alternative is increasing the amount paid to the FUND by TICO Registrants. This process would take longer to achieve both goals listed above since the accumulation of funds would be gradual. It is likely that a gap in consumer coverage would occur. As an example, to reach a Target FUND level of $50M by the end of 10 years (assuming a base case scenario with two large losses), the amount paid by TICO Registrants would need to be increased to **$0.55 per $1,000 of sales,** or an increase of 120% above current Registrants contribution levels.

Since the Consumer Protection Fee accomplishes both goals in a quicker and more efficient manner, it is the more optimal approach.

Key Finding #12: The optimal approach to achieve Target FUND Levels is for TICO to employ a Consumer Protection Fee.

B.5.9 Catastrophic Losses

In addition to the normal and large losses that were discussed in sections B.5.1 and B.5.2, there is a third scenario which has been considered; catastrophic losses. A catastrophic loss is defined as a loss in excess of $5M which could have a significant impact on the FUND. This size of failure has not been seen in Ontario over the past twenty years, and thus is not present in the historical data. The possibility of a loss of this size is relevant, and thus is treated separately from normal and large failures.

The approach taken for catastrophic losses will be based on a "scenario analysis." With this approach, a frequency of failure is not determined; instead, the emphasis is placed on determining the severity of the failure. To calculate the severity of a catastrophic failure, actual data was considered for three large airlines (non-Registrants) that have a significant market presence in Ontario. Three separate levels of assumptions were calculated in order to determine a low, moderate, and high estimate of the severity. Table 5 shows the range of values that were calculated. Catastrophic failures that could impact the TICO FUND have a range of $37M to $210M.

The range of values presented in Table 5 should be used in the determination of the size of FUND. Since these catastrophic losses are a scenario which could potential hit the FUND, TICO should prepare the FUND to handle this size of loss or consider alternative risk mitigation options, including the use of reinsurance protection.

Table 5: Catastrophic losses

$(M)s	Airline #1	Airline #2	Airline #3
Low Estimate	$ 37	$ 41	$ 125
Medium Estimate	$ 49	$ 55	$ 163
High Estimate	$ 65	$ 72	$ 210

Key Finding #13: Catastrophic failures range from $37 Million to $210 Million. TICO should prepare the FUND to handle catastrophic losses and consider alternative risk mitigation options, including the use of reinsurance protection.

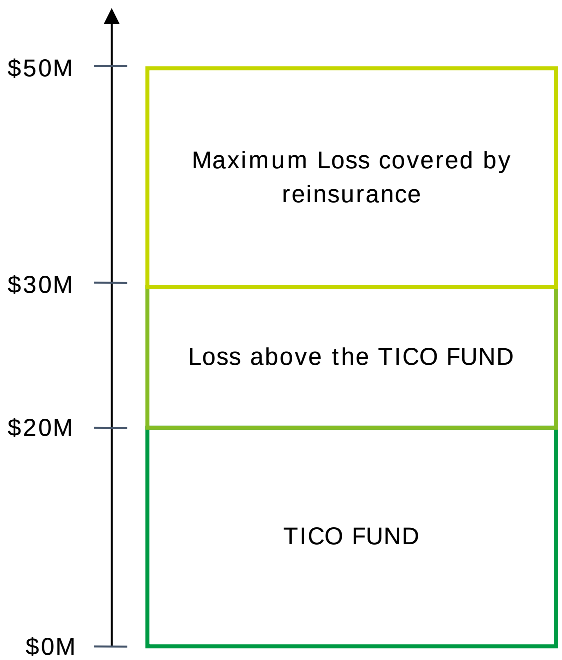
B.5.10 Risk Mitigation / Reinsurance

If a failure occurred that were larger than the size of the FUND, the consumers affected by the failure would not be refunded the full amount of their purchases. For example, if the FUND size was $20M, and a failure to an airline resulted in $30M in losses, only $0.66 would be returned for every dollar that the consumers paid. This is not ideal for the consumers or TICO.

Reinsurance coverage offers an additional layer of protection against catastrophic losses. Figure 12 demonstrates a basic contract with a reinsurer. If a loss of $30M occurs, then the FUND would only be able to cover the first $20M while all losses above $20M, and up to $50M would be covered by the reinsurer. In this example, the consumers are refunded 100% of their loss due to failure.

At the time of writing, TICO has received non-binding indicative pricing from a major reinsurer. However, pricing is a function of many variables, and for this reason, has not been included in this Report. It is fair to note that this indicative pricing will be funded from the consumer protection fee which is more than sufficient to fund this premium.

Figure 12: Catastrophic Loss with Reinsurance Coverage



B.6 Target FUND Size

The previous section shows the projected FUND levels under different scenarios with detailed P&L projections for the next ten years. These include scenarios with catastrophic losses.

One of the main purposes of developing multiple scenarios is to recommend Target FUND levels to TICO. Deloitte has identified and discussed with subject matter experts several ways to look and assess Target FUND levels. The Target FUND levels depend on many factors, including the overarching consumer protection mandate of TICO, the current and future level of coverage, the funding mechanism, and the level and cost of reinsurance protection.

Deloitte's recommended Target FUND level is $50M, based on the outputs from a range of scenarios which have projected FUND levels of between $40M and $60M as follows:

Scenario 1: Target FUND based on Base case (50th percentile & current funding levels)

Projected FUND levels based on actuarial simulation of expected losses have been disclosed in Table 4 which shows a FUND value at ten years of $13.1M. Expected losses have been determined from an analysis of historic claims, and as such it is appropriate to include a 'risk margin' to reflect the credibility and volatility of claims data. For these purposes Deloitte has selected a 'percentile corridor' based on projected FUND levels in ten years as a proxy risk margin. As an example, consider the range of 90th to 99.5th percentile, the Target FUND level should have a range of **$14M to $16M.**

In other words, at the 99.5th percentile with a $16M FUND level, there is a 0.5% probability that the FUND will be depleted after 10 years having absorbed all expected losses as per TICO's frequency and severity distributions.

Whilst this approach is theoretically sound, it is based upon historic claims experience which has not seen many large losses over the period, and therefore does not incorporate the risk of very large or catastrophic events.

Scenario 2: Base case + Two large losses + Variable Consumer Protection Fee (CPF)

This second scenario extends the FUND projection from scenario 1 to consider two large losses and introduce the variable Consumer Protection Fee (i.e., $1 per $1000 CPF for 2019 and 2020, reducing to $0.25 after 2020). Maintaining the percentile corridor of the 90th to 99.5th percentile, the Target FUND level has a range of **$47M to $50M.**

In other words, there is a 0.5% probability that a FUND of $50M will be depleted after having absorbed all expected losses as per TICO's frequency and severity distributions, plus two large losses.

Scenario 3: Target FUND based on TICO wind-up

An alternative to the previous two methods, but still based on stochastic simulation of losses, is deriving the Target FUND level in the event of a TICO wind-up. This scenario assumes the base case claims plus the impact of two large losses.

Under a wind-up, TICO would be required to pay out losses (50th percentile plus two large losses totaling $11.8M), cover salaries (totaling $24.2M) and meet ongoing administrative costs (totaling $14M) for the next years until the FUND depletes. Under this distressed scenario, and in order to be able to cover two large losses as seen in the past, an initial Target FUND level of **$50M** would be sufficient to cover all wind-up costs and claims over 10 years.

Although a wind-up is an unlikely scenario, this does highlight the importance of bringing the FUND to its desired Target FUND level over a fairly short time frame, which is what the CPF mechanism allows.

Scenario 4: Target FUND level using deterministic catastrophic loss scenarios

Table 5 above depicts low, moderate, and high losses that would be claimed against TICO due to an airline failure. The underlying assumptions for the catastrophic scenarios can be found in Section B.5.9.

One approach to determine an appropriate Target FUND level would be to choose one of these scenarios as the size of the FUND. This selection might be crucial since the Target FUND level would be the level at which a reinsurance cover would attach.

For example, a Target FUND level could be chosen in the **$40 to $65M range** assuming reinsurance attaches at this same level. In other words, if the Target FUND was set to cover a loss $50M, then to cover losses up to a maximum of $200M would require reinsurance coverage between $50M and $200M. Risk mitigation mechanisms are discussed in further detail in Section B.5.10.

Section B.4 listed the trust accounts balances for the largest TICO Registrants at levels in excess of $200 million. As a comparison, the largest catastrophic claim estimates are of $210M.

Scenario 5: Target FUND level using "returns to travel sales"

The TICO Registrant fee structure has recently been revised and increased to $0.25 per $1,000 on travel sales. Without any reinsurance protection in place it is reasonable to argue that under a major catastrophic loss, the return to the consumer should be at least the amount that the Registrant had been originally charged.

This implies a Target FUND level maximum of **$53M** (i.e. 25% of worst estimated catastrophic loss, as shown in the table below)**.** The worst case scenario is chosen due to lack of reinsurance protection.

$(M)s	**Airline #1**	**Airline #2**	**Airline #3**
Low Estimate	$ 9.3	$ 22.5	$ 31.3
Medium Estimate	$ 12.3	$ 29.8	$ 40.8
High Estimate	$ 16.3	$ 38.5	$ 52.5

TICO should be able to answer this question of how much return would be appropriate for a government organization like TICO to return to the consumer in the event of a catastrophic loss.

Key Finding #14:

All methods support a Target FUND range of **$40 to $60M**, with Deloitte's recommendation for a Target FUND size of **$50M**.

- Reinsurance protection, as explained in Section B.5.10, should be attached at the Target FUND level, so as not to leave any gap in consumer protection.
- Funding / replenishment to Target FUND levels should be financed through a variable Consumer Protection Fee (CPF). This variable CPF can also be used to pay for the reinsurance coverage costs.
- In the case where a CPF, or variable CPF, is not implemented there will likely be a gap in coverage and it will take longer to accumulate to the proper Target FUND level. As an example, it would require 10 years at $0.55 per $1,000 of sales to build a Target FUND of $50M.
- Further discussions on the attachment and the limit of the reinsurance coverage need to happen between TICO and a reinsurer.
- Finally, any mega catastrophic loss (above a given reinsurance limit) may need to be addressed by the Ontario government. Further discussions between TICO and the Government is recommended.

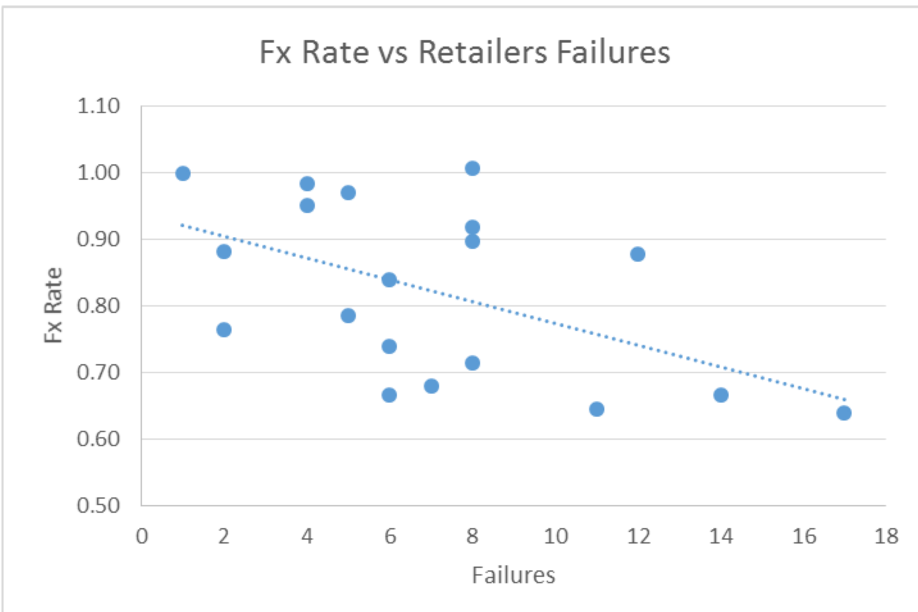
These recommendations align all market participants; Registrants, TICO, private industry solutions, and the Government, in securing consumer protection at all levels.

B.7 Predictive Modelling

In order to determine policy, macroeconomic, and microeconomic drivers of registrant failure, predictive modelling associating registrant failure with potential drivers was performed utilizing several techniques including decision trees and generalized linear models. Under this approach, preliminary factors were identified that indicated a correlation between TICO Registrant failure and macro and micro level indicators.

M*acro level drivers* are defined as factors at the level of national or province economy such as foreign exchange rate, unemployment rate, Gross Domestic Product etc. The forecasts of macroeconomic factors are not available for extended forward looking time periods. However, historical data shows that they contribute to TICO Registrant failure to a varying extent. Analyzing historical data has revealed an inverse link between foreign exchange rate and number of registrant failures (see Figure 13). Deloitte did not utilize macroeconomic predictors in simulations of registrant failure frequency due to the extended time horizon of simulations (10 years) and lack of available macroeconomic variable forecasts supporting this time window. Showing a parallel with the banking system, capital reserving forecasting techniques, based on hypothetical macroeconomic scenarios, can be borrowed to perform loss frequency simulation.

Figure 13:

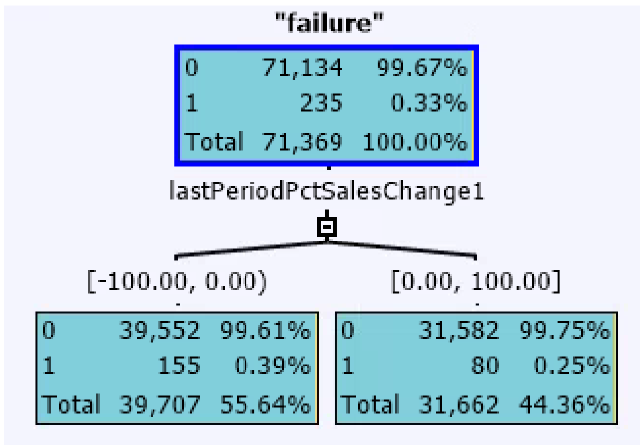


On the other hand, *micro level drivers* are defined as factors at the level of individual TICO registrant such as time series data on Ontario sales, profit, working capital. Similarly with the macro level factors, the forecasts of micro level drivers cannot be feasibly extended into prolonged time horizons (such as 10 years) and were not used in frequency and severity simulations of potential future FUND losses.

However, micro level drivers can be highly indicative of near to medium term risk of registrant failure. In Deloitte's analysis, percent sales change compared to the last filing period resulted in a statistically significant predictor of Registrant failure in near term. See Figure 14 for a decision tree visualization of the association utilizing 2010-2017 deposit record data. Out of over 71 thousand deposit events, a total of 39,707 events were associated with a negative percent gross sales change as compared to the corresponding prior filing period. Out of these records, 155 (0.39%) were indicated as failure records of Registrants (deposit records that immediately preceded failure year). The counterpart number of failure records corresponding to a positive percent sales change was lower at 80 (0.25%).

Deloitte concludes that, while micro level factors are not practical for long term FUND loss simulation and forecasting, they can be used for effective automatic prediction of Registrant risk of failure over short term (1-2 years) time horizon.

Figure 14:



Finally, Deloitte defines *policy drivers* as point-in-time events of policies pertinent to TICO Registrants coming into effect. Deloitte analyzed six policy change events spanning time period from January 1, 2002 to July 1, 2016 for their impact on Registrant failure. The analysis showed that the regulation passed on July 1, 2010 setting up a new, 3 month claim filing deadline is associated with a lower frequency of Registrant failure events. However, whether the identified link is incidental or there exists a causal link requires further analysis. Based on historical data analysis, Deloitte concludes that policy changes may affect likelihood of TICO Registrant failure.

Key Finding #15: There is an inverse link between Foreign Exchange rate and the number of failures.

Key Finding #16: Percent sales change compared to last filing period has resulted in a statistically significant predictor of Registrant failure in the near term.

Key Finding #17: Based on historical data analysis, policy changes may affect likelihood of TICO Registrant failure.

C. Conclusions

Deloitte has examined TICO’s current FUND mechanism and has confirmed that keeping the current mechanism as-is will only continue to deplete the FUND and therefore will not be an option.

This report introduced several options and scenarios available for TICO to determine the target FUND size. All the methods imply a Target FUND range between $40M to $60M. Deloitte recommends a Target FUND Size of **$50M.**

In addition to maintaining a target FUND balance, TICO should also consider reinsurance protection, as explained in section B.5.10. Reinsurance should be attached at the Target FUND level to not leave a gap in consumer protection. Further discussions on the attachment and limit of the reinsurance coverage need to happen between TICO and a reinsurer.

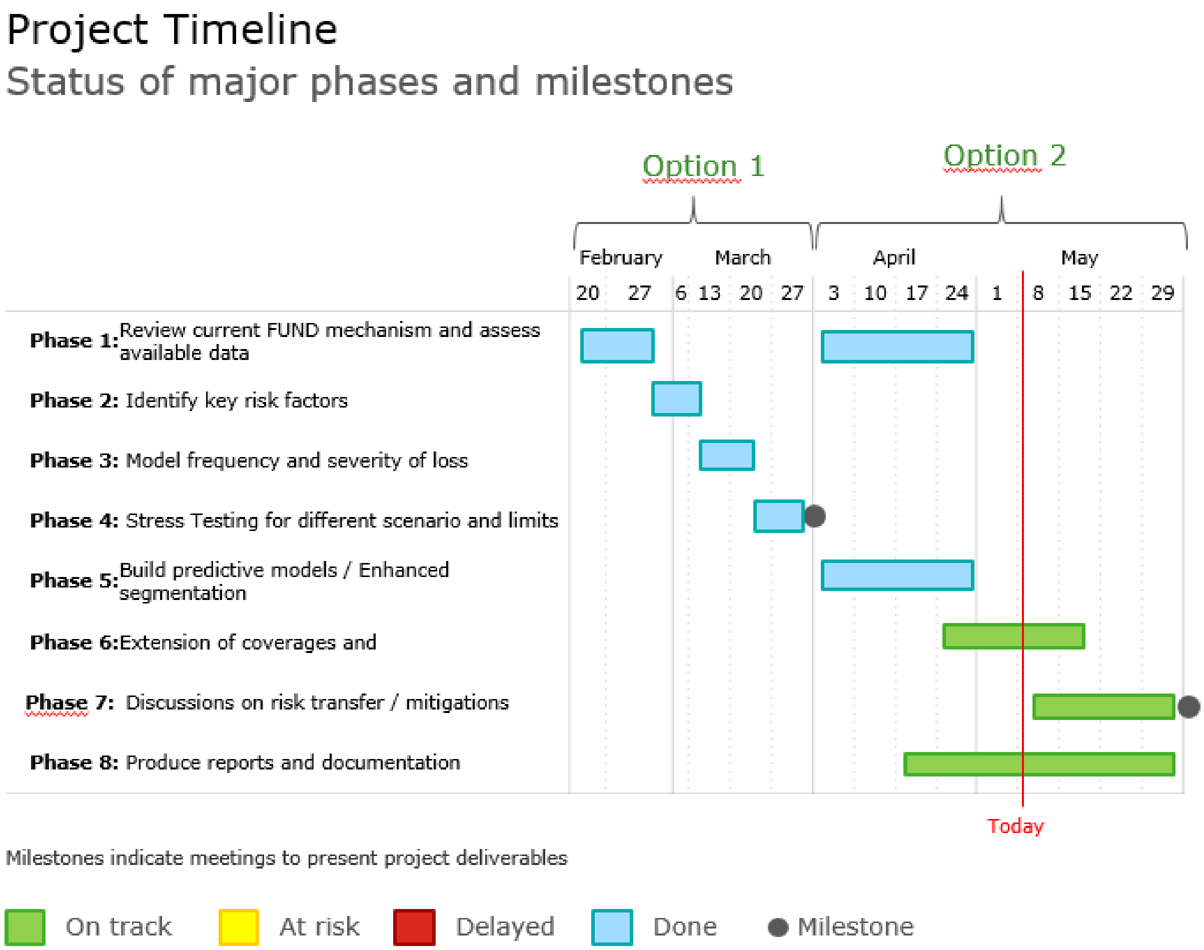
The funding and replenishment needed to achieve Target FUND levels should be financed through a Consumer Protection Fee (CPF), which can also be used to pay for reinsurance coverage costs. In the case where a CPF or variable CPF is not implemented, there will likely be a gap in coverage and it would take longer to accumulate to the proper Target FUND level.

Catastrophic losses (above the reinsurance limit) may need to be addressed by the Ontario Government.

Deloitte’s recommendations align all market participants: Registrants, TICO, private industry solutions, and the Government, to secure consumer protection at all levels.

APPENDIX A – Project Timeline

The following is an example of the project timeline Deloitte used in our weekly update report to illustrate the progress of our work and whether or not items were on track, at risk, delayed or complete. March 31 was the date of delivery for milestone I to present our initial findings to the Board. Milestone II is the date that the work was aimed to be delivered.



APPENDIX B – Yearly Summary

The following table displays the underlying data that was used to calibrate the distributions in the Monte Carlo simulation. All columns are aggregated by the Year of Registrant Failure.

Year of Registrant Failure[10]	Number Of Registrants	Number Of Retail Registrants	Number Of Wholesale Registrants	Number Of Failures	Total Claims Received	Total Claims Paid	Total Loss Amount
1997	2,903	2,380	523	8	243	201	273,030
1998	2,954	2,422	532	11	456	423	423,666
1999	3,010	2,518	492	11	384	311	845,906
2000	3,026	2,524	502	7	133	93	440,140
2001	3,055	2,542	513	19	4,208	1,560	2,735,175
2002	2,968	2,489	479	12	219	174	217,396
2003	2,953	2,476	477	8	93	81	329,005
2004	2,909	2,440	469	8	100	83	222,729
2005	2,884	2,421	463	7	1,036	263	244,033
2006	2,838	2,390	448	11	791	647	1,254,986
2007	2,786	2,337	449	6	85	59	159,970
2008	2,730	2,295	435	10	363	169	340,389
2009	2,632	2,220	412	14	926	491	3,139,889
2010	2,536	2,150	386	5	47	35	149,722
2011	2,501	2,135	366	8	279	159	483,019
2012	2,507	2,147	360	7	117	85	154,441
2013	2,550	2,184	366	3	70	53	2,113,000
2014	2,512	2,157	355	4	188	112	232,477
2015	2,485	2,137	348	4	122	40	69,733

[10] 2016 data was not available at the commencement of this study and so was not included in Deloitte’s analysis

APPENDIX C – Dictionary

Terminology	Definition
Random Variable	A variable whose value depends on possible outcomes
Percentile	Value on a scale of 100 that represents a percentage position or rank in a range of data. For example, if a student is at the 80^{th} percentile, he/she performs better than 80 percent of the class.
Distribution (Statistics)	A table or equation that links each outcome of a statistical experiment with a probability of occurrence
Frequency	Number of times the event occurred in an experiment or study
Frequency Distribution	In statistics, a frequency distribution is a table that displays the frequency of various outcomes in a sample. Each entry in the table contains the frequency or count of the occurrences of values within a particular group or interval, and in this way, the table summarizes the distribution of values in the sample.
Simulation	A method of modelling random events by repeating steps many times in an attempt to approximate real-world results
Exposure	Unit of measure of risk
Severity	The dollar amount of claims paid (not including recovered amount)
Skew	Asymmetry in a statistical distribution in which the curve appears distorted either to the left or right
Monte Carlo Simulation	Technique used to model the probability of outcomes for multiple variables in a process by generating random numbers according to predefined distributions. It is a common technique used for modelling risk or uncertainty.
Normal Loss	Failures that resulted in claims totaling less than $400K (not including recovered amount)
Large Loss	Failures that resulted in total claims greater than $400K (not including recovered amount)
Expected Loss	It is the long-run expectation of the average value of loss amounts that will impact the FUND
Aggregate Loss	The total amount of losses from all failures in a given fiscal year
Catastrophic Loss	Failures that cause loss amounts greater than anything previously experienced by TICO and could deplete the FUND entirely
Predictive Model	Process that uses data mining, data cleansing, and statistical models to forecast outcomes. Each model is made up of a number of predictor variables that are likely to influence future results.
Stress Testing	Scenario analysis used to determine the stability of a model by testing the breaking point or capacity and observing the results. For example, what happens if the aggregate losses rise by 30%?

APPENDIX D – Financial Performance Indicators and financial reviews

The Following financial indicators are analyzed during bench reviews:

1. **Gross Ontario sales**: Travel Services i.e. accommodation and /or transportation billed individually or in package.
    - If a package then anything bundled in that package would also be considered a travel sale
    - If a Retail Agency = All sales made to public from the Ontario locations (Head office and branches)
    - If a Wholesaler = All sales made to Ontario Retailers
2. **Profit/Loss**: Net Profit Loss
3. **Equity**: as per the Balance Sheet adjusted for Shareholder balances (if a payable then added back to equity, if a receivable then subtracted from equity). Includes adjustment for both short term and long term shareholder balances.
4. **Working Capital:** Formula is written in the Ontario Regulation 26/05, section 23(6) *"The Working capital of a Registrant shall be calculated in accordance with GAAP and shall not include the value of any security provided under subsection 25(1) (i.e. new Registrant security to TICO) or capital belonging to any person with whom the Registrant has a non-arms' length relationship (i.e. the "shareholder" balances = this includes any shareholder and other related party balances included in the he current assets/current liabilities)"*
5. **Deposits:** Customer deposits liability balance, which refers to the amount of customer monies that should be held in the trust account.

- If the amount held in the trust account is less than this balance then there is a trust deficit position.
- If there is more in the trust account than this balance then there is a trust surplus position. Trust should never be in a deficit position.

6. **Surplus/Deficit:** See above.
7. **Shareholder/Related**: All non-arm's length party balances (not just "shareholders")
8. **Net worth:** amount of net worth that a sole proprietor has that he/she can provide in lieu of working capital (Note: It only relates to sole proprietors, not applicable to corporations as they are separate legal entities from the owners)

APPENDIX E – Credit Cards General Terms and Conditions extracts[11]

Credit Card Issuer One:

"Liability for Travel Suppliers

We accept no responsibility or liability for the failure of any travel supplier, including any Other Travel Provider, to perform travel arrangements for any reason or for any other actions, errors or omissions by a travel supplier or Other Travel Provider. We will not, under any circumstances, assume any liability for any loss or damage caused by goods or services supplied or requested in connection with the Program. We accept no responsibility or liability if travel arrangements are voluntarily or involuntarily rerouted, downgraded or upgraded from your original paid itinerary and class of service by a travel supplier or Other Travel Provider or for any other changes or substitutions that a travel supplier or Other Travel Provider may make. It is the Primary Cardholder's responsibility to know the relevant policies, terms and conditions of the travel supplier, including those of any Other Travel Provider".

Credit Card Issuer Two:

"Failure of any travel supplier through which you contract for services if this supplier shall be, at the time of booking, in bankruptcy, insolvency or receivership; or in the case of U.S. Air Carriers, under Chapter 11 in the U.S. Bankruptcy Code. No protection is provided for failure of a travel agent, agency or broker".

Credit Card Issuer Three:

"The refusal, failure or inability of any person, company or organization, including but not limited to a travel agent, tour operator, accommodation provider, airline or other carrier, vehicle rental agency or any other travel or tourism services provider to provide services or accommodation due to their Insolvency or the Insolvency of any person, company or organization they deal with".

Credit Card Issuer Four:

"The bank and their agents are not liable or responsible for any loss, injury, death, cost, damage, liability or expense you or your family members or guests may suffer or incur, and you release and discharge the bank and their agents from any claims, demands, causes of action and actions which may arise, in connection with any:

> a)…
>
> e) Act or omission of any travel supplier, including its failure to perform as expected or described or if travel services are substituted or changed in any way or cancelled in whole or part".

Reward Program One:

[11] Deloitte's own research

"If we improperly deny you a Reward you select, our liability will be limited to the cash equivalent of that Reward. In no event will we be liable or responsible for, and you release us from, all claims in respect of any loss or damage suffered in connection with the Program, by you or others, that is caused by:

a)...

d) Failure of any party to honor a gift certificate/card, financial rewards voucher or e-certificate for any reason, including the insolvency or bankruptcy of that party".

Reward Program Two:

"Neither we nor XXX Loyalty shall not be liable for

(i) Any lost, stolen, or damaged correspondence, documents or tickets; and

(ii) Any bodily harm, property damage or loss that may result from participation in the Program or a service provider's lack of provision or failure to provide services, for any reason".

Merchant Chargeback Guide[12]:

Transactions for Travel Services-Additional Documentation Requirement. If a travel service is not provided due to insolvency, and this service was covered by a bonding authority, insurance or consumer protection scheme according to applicable law, the issuer must instruct the cardholder to claim from the bonding authority, insurance or consumer protection scheme. A chargeback is only permitted if the cardholder requested reimbursement from the bonding authority, insurance or consumer protection scheme within 120 calendar days from the expected service date and the claim was declined.

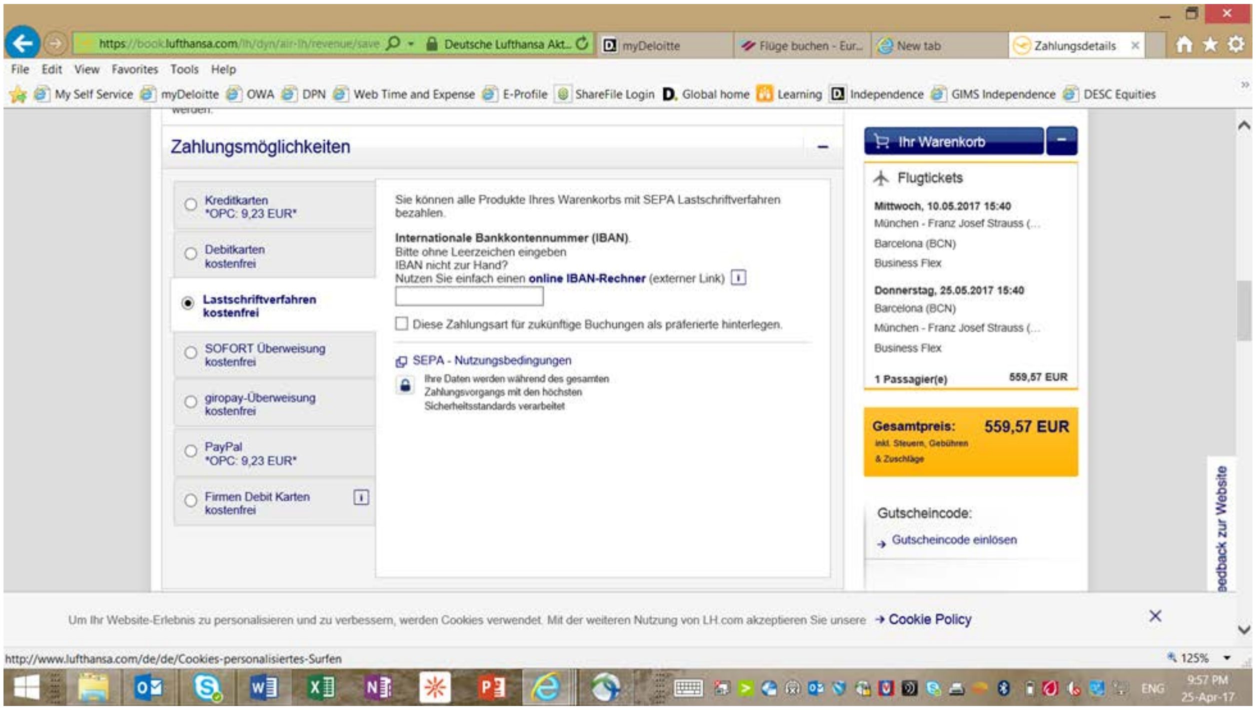
The cardholder need not wait more than 30 calendar days for a reply. The chargeback must be processed within 120 days after the expected service date or within 30 days of the negative reply, and at the latest within 150 days from the expected service date, whether the bonding authority, insurance or consumer protection scheme responded or not. The supporting documentation must include a cardholder statement or other evidence explaining the result of the claim from the bonding authority, insurance or consumer protection scheme.

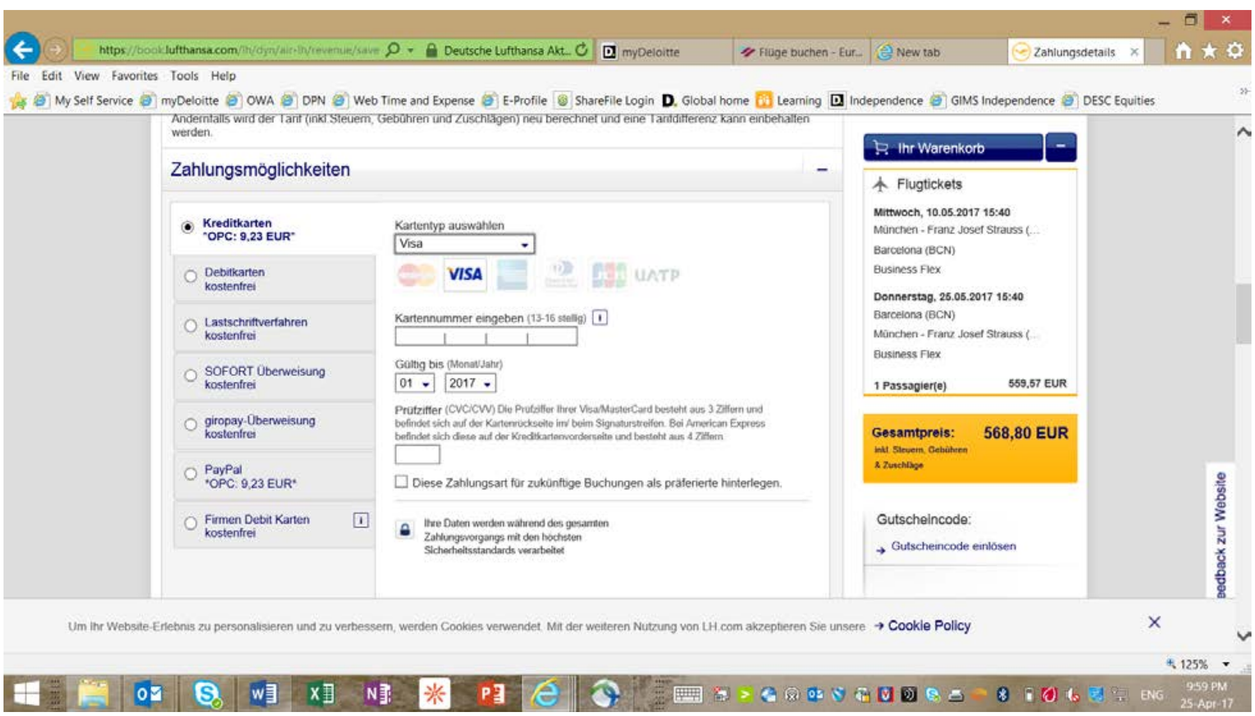
The acquirer may second present using reason code 2700 (Chargeback Remedied) and supplying evidence that the services were covered by a bonding authority, insurance or consumer protection scheme. An acquirer statement that such a scheme exists is not sufficient; evidence that the scheme did cover the specific insolvency event must be provided with the second presentment.

[12] MasterCard Chargeback Guide, Updated 10 May 2016

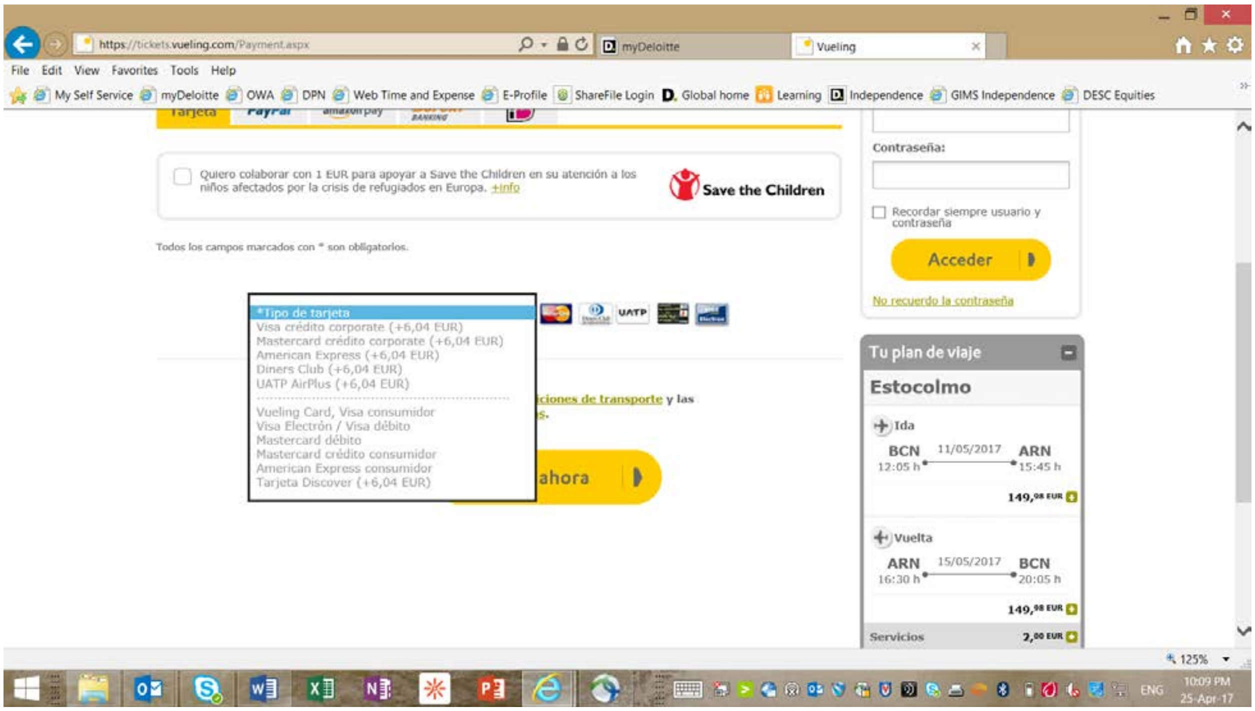
APPENDIX F – Credit Cards online charges

Quotation one: Munich to Barcelona, return trip. Credit card costs EUR 9.23.





Quotation two: Munich to Barcelona, return trip with low-cost carrier. Credit card costs EUR 6.04. Further expenses might apply.



APPENDIX G – Key Findings

Key Finding # and Page #	Focus Area	Finding
1 (pg. 14)	Quebec Fund	The experience of the Quebec fund can be used as a benchmark for the Consumer Protection Fee that is being considered in Ontario's comprehensive review of the Act and Regulation. A Fund size in excess of $130M is a likely scenario if the full amount of the Consumer Protection Fee ($1 per $1,000 of sales) is maintained.
2 (pg. 15)	Large Losses	Even though large losses can be considered outliers, it is unwise to remove them from the modelling of future expected losses. TICO is still responsible for the reimbursement of consumers due to Registrant failure up to a maximum of $5M and an additional $2M for repatriation. These large losses will be used to stress test the size of the FUND and consider worst-case scenarios.
3 (pg. 17)	CATO Survey	Since 2012, total Ontario gross sales for the survey respondents has increased each year. The year with the largest growth was from 2014 to 2015 (9.7%) and the year with the lowest growth was from 2012 to 2013 (1.6%). The percent of transactions paid by credit card has been consistently in the range of 90-93% over the past five years. There is no discernible trend. The percent of transactions paid through online booking has been consistently in the range of 29-31% over the past five years. There is no discernible trend. Two risks were identified as having a potential "High" impact on the health of the travel industry; adverse geopolitical environment (i.e. acts of terrorism), and adverse movement in exchange rates. One risk was identified as having a "Low" impact on the health of the travel industry; increasing incidence of fraud.
4 (pg. 22)	Chargebacks	In Deloitte's view, it is highly likely that leading credit cards and rewards programs General Terms and Conditions will end up excluding liability arising due to the failure, insolvency or inability to perform a service from a travel agent, tour operator, accommodation provider, airline or other carrier.
5 (pg. 23)	Travel Insurance	It appears that leading travel insurance carriers General Terms and Conditions exclude liability arising due to the

		failure, insolvency or inability to perform a service from a travel agent, tour operator, accommodation provider, airline or other carrier.
6 (pg. 24)	Chargebacks	Historical chargebacks correspond to 9.47% (or CAD 1.3 million) against total claims paid of CAD 13.2 million.
7 (pg. 26)	Trust Accounting	Deloitte is supportive of the suppression of Trust Accounts and the transition to increase security deposits as a measure of aligning underlying exposures to the FUND.
8 (pg. 28)	Severity Distribution	The severity of expected future losses will be split into two distinct groups; normal losses and large losses. Each group of losses will have a separate assumed distribution which will be used in a Monte Carlo simulation.
9 (pg. 30)	Frequency Distribution	The frequency of expected future losses will be split into four distinct groups; normal losses and large losses for both Registrants and non-Registrants. This will account for the mathematical differences between each group. A separate distribution for each group will be used in the Monte Carlo simulation.
10 (pg. 33)	Aggregate Loss Distribution	The median expected losses in 2017 is $650K, with a long tail that has a right-skew. The median expected losses is higher than the normal/large loss threshold since it is expected that there will be multiple failures in each year. The aggregate loss distribution will be used to determine the Target FUND level.
11 (pg. 37)	Security Deposits	Increasing security deposits would align interests and share risk with TICO Registrants. The current security mechanism of a flat fee favors large Registrants. This proposed mechanism would alleviate some of this inequality by requiring larger Registrants to pay more in security deposits.
12 (pg. 37)	Consumer Protection Fee	The optimal approach to achieve Target FUND Levels is for TICO to employ a Consumer Protection Fee.
13 (pg. 38)	Catastrophic Failures	Catastrophic failures range from $37 Million to $210 Million. TICO should prepare the FUND to handle catastrophic losses and consider alternative risk mitigation options, including the use of Reinsurance protection.

		All methods support a Target FUND range of $40 to $60M, with Deloitte's recommendation for a Target FUND size of $50M
14 (pg. 42)	Target FUND Levels	• Reinsurance protection, as explained in Section B.5.10, should be attached at the Target FUND level, so as not to leave any gap in consumer protection • Funding / replenishment to Target FUND levels should be financed through a variable Consumer Protection Fee (CPF). This variable CPF can also be used to pay for the reinsurance coverage costs • In the case where a CPF, or variable CPF, is not implemented there will likely be a gap in coverage and it will take longer to accumulate to the proper Target FUND level. As an example, it would require 10 years at $0.55 per $1,000 of sales to build a Target FUND of $50 Million • Further discussions on the attachment and the limit of the reinsurance coverage need to happen between TICO and a reinsurer • Finally, any mega catastrophic loss (above a given reinsurance limit) may need to be addressed by the Ontario government. Further discussions between TICO and the Government is recommended. These recommendations align all market participants; Registrants, TICO, private industry solutions, and the Government, in securing consumer protection at all levels.
15 (pg. 44)	Predictive Modelling	There is an inverse link between Foreign Exchange rate and the number of Failures.
16 (pg. 44)	Predictive Modelling	Percent sales change compared to last filing period has resulted in a statistically significant predictor of Registrant failure in the near term.
17 (pg. 44)	Predictive Modelling	Based on historical data analysis, policy changes may affect likelihood of TICO Registrant failure.