Travel Industry Council of Ontario

Actuarial review of Compensation Fund

October 2018

Table of Contents

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Deloitte is not responsible for the consequences of using this Report ("Report") for any purpose other than those stated within the Introduction. This report is a snapshot at a particular point in time of the Travel Industry Council of Ontario's ("TICO") Compensation Fund ("Fund") and TICO's financial condition, whilst also attempting to predict the financial condition of the Fund in future years. Deloitte has used actuarial assumptions to model multiple scenarios within this report. The results of these models are provided in this report as an estimate; however, the future is uncertain and the Fund's actual experience may differ from our best estimate. Other assumptions and scenarios not included may also be reasonable.

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The analysis presented in this Report is not intended as legal opinion. Please considering securing advice from legal counsel for any legal matters related to this Report.

Executive Summary

Background

This report has been commissioned by Richard Smart, CEO of the Travel Industry Council of Ontario (TICO) as an expansion to Deloitte's 2017 report, entitled "TICO Compensation Fund June 15 2017". This report should be read in conjunction with the prior report, and is intended as an updated actuarial and financial review of past and future performance of the Compensation Fund ("the Fund").

Compensation Fund

Historically, the Fund has faced few significant losses, and no catastrophic losses since its inception in 1997. However, significant losses and failures have occurred globally at magnitudes, that if occurred in Ontario, would drastically impact, and in some cases, completely deplete the Fund. This indicates a necessity for TICO to prepare for losses that are larger than those experienced historically.

While TICO is not an insurance company, the organizations do share similar characteristics and functions with both providing valuable services to consumers in case of uncertain future events. An analogy can be drawn between the fund TICO wishes to hold to cover against future claims, and the funds an insurance company holds to cover its claim liabilities (calculated on a prudent best estimate basis) and its capital requirements (set by reference to its own risk appetite and determined through stress testing). In January 2018, TICO updated its own risk appetite, establishing its tolerance to risk as twice the annual average losses of the Fund. With this in mind, Deloitte has performed financial modelling and analysis using consistent conservative assumptions to determine a Base Case Fund projection.

However, using historical data alone to determine a Target Fund still exposes TICO to the risk of insufficient funds in the event of large unexpected registrant failures. While TICO has never experienced such a loss, the possibility of occurrence exists as is proven by similar events occurring worldwide.

Additionally, with an objective to protect consumers, TICO is motivated to provide reimbursement for losses exceeding the indicated maximum threshold. A large registrant failure would significantly impact the Fund and expose TICO to financial, consumer, political and reputational risk. Deloitte has reviewed case studies of such events, including the Monarch Airlines failure, as well as the actions of organizations similar to TICO both during and following such failures (See Section 4). To reduce the risk of Fund depletion, it is therefore necessary to stress test the impact of a large registrant failure on the Fund when establishing a Target Fund level.

Based on this analysis, it is recommended that a Target Fund is established in the range of **$40M to $60M**.

10-year Forecast of the Fund

Deloitte has conducted a financial projection of the Profit and Loss (P&L) of the Fund over the next 10 years to determine the expected range of the Fund. In the Base Case, TICO makes no changes to current funding mechanisms. In this scenario, the Fund level stays broadly level throughout the projection at $22M. A key assumption over this period is that there is no large registrant failure(s), or catastrophic losses, that may quickly deplete the Fund.

Funding Mechanism

Deloitte has considered a selection of possible alternatives to bring the Fund to the target level. Following research of funding mechanisms of travel guarantee funds globally, and conducting financial projections under various scenarios of alternative funding mechanisms, the most efficient, equitable funding strategy would be to implement a Consumer Protection Fee (CPF).

Implementing a CPF would allow TICO to mitigate financial risk by sharing financial responsibility amongst TICO, registrants, and consumers. The impact of a CPF has been assessed by analyzing scenarios where the TICO Fund is brought to a Target level over three, five and 10 years. Our projections have shown that with a consumer fee of $0.51 per $1,000 and registrant fee at the current level ($0.25 per $1,000), the Fund would achieve Target level in three years.

Additionally, Deloitte has found multiple cases of travel compensation funds which have been successful in maintaining funding levels operating with a consumer pay model. Examples include the Quebec Compensation Fund which was discussed in the previous engagement report, and the Denmark Travel Guarantee Fund (See Section 4.5).

Through implementation of a more robust funding mechanism combined with enhanced consumer protections, the government of Ontario and TICO can achieve a comprehensive Compensation Fund model that is efficient and provides the necessary protections to consumers while optimizing risk to all parties. Examples of these protection funds are time-tested and have been successfully deployed in other jurisdictions, particularly Europe.

Section 1: Introduction

1.1 Background on TICO

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 Fund. TICO governs approximately 2,400 travel agents and wholesalers 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 an insolvency of a registrant or an end supplier (i.e. airline or cruise line).

The Fund is financed through three mechanisms:

i. Contributions made by registrants, which account for approximately 75% of yearly revenues;
ii. Recoveries of money paid from the Fund; and
iii. Investment income earned on assets backing the Fund.

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

1.2 Background on the Travel Industry in Ontario

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, largely from industry consolidation, and an increase in the level of renewal cancellations from smaller registrants. This decline in registrant numbers results in lower fees, but this is partially offset by higher fees from the larger entities.

1.3 Scope of this Report

This Report has been commissioned by Richard Smart, CEO of TICO, for the purposes of performing an actuarial and financial review of the past and future performance of the Fund. This Report is intended as an update to Deloitte's 2017 report "TICO Compensation Fund June 15 2017" and should be read in conjunction to that report. More specifically, Deloitte was responsible for developing updated materials for the following items:

i. Actuarial Modelling
    a. Updated "Base Case" to reflect TICO's most recent financial performance, claims experience, and economic assumptions.
    b. Updated to reflect indexing (i.e. CPI) of current cap thresholds since inception (1974).
    c. Removal of End-Supplier-Failure (ESF) from current coverage.
    d. Updated to include the option of adding consumer co-pay model with fixed dollar amount per $1,000 of sales
    e. Identify the required fee that existing TICO registrants would need to fund in order to achieve the desired Target Fund. Variable fee could be based on (i) sales of the registrant or (ii) risk profile of the registrant
ii. Catastrophic Loss Modelling
    a. Run a scenario that reflects the required fund size for a large registrant failure; to include repatriation and trip completion costs.

Section 2: Approach

2.1 Data

2.1.1 Claims and Recoveries Data

Data for all claims were provided to Deloitte, summarized by-Registrant/Non-Registrant, and by-Year. Additionally, the dollar amount of recoveries were also provided by-Entity, and by-Year. This data was converted into an easy-to-use format (for statistical simulations) by Deloitte. Claims starting in fiscal year 1997-98 and ending in year 2017-18 were provided.

2.1.2 Financial Data

All financial data were taken from the most recent TICO Annual Report or provided directly by TICO. Financial projections were used for the following metrics up until 2021:

i. Salaries and benefits
ii. Other operating expenses
iii. Amortization
iv. Revenue from renewal payments
v. Revenue from new registrant payments
vi. Revenue from education standard fees

All years thereafter were increased with inflation and industry productivity where relevant.

2.2 Statistical Simulations

2.2.1 Frequency and Severity Distributions

For the purposes of modelling, thresholds were defined for varying sizes of losses as listed, unchanged from the previous engagement report. Note that normal and large losses should not be confused with catastrophic losses which result from a large registrant failure:

i. Normal losses: Claims paid which have a total inflation-adjusted claim amount of less than $0.4M
ii. Large losses: Claims paid which have a total inflation-adjusted claim amount of greater than $0.4M
iii. Catastrophic losses: A loss resulting from a large registrant failure which could have a significant impact on the Fund. This size of failure has never been experienced by TICO, and thus is not present in the historical data

The frequency and severity of claims were fit to known distributions using maximum likelihood estimation across the following categories; where large and normal losses are defined above:

i. Frequency of registrant normal losses
ii. Frequency of registrant large losses
iii. Frequency of end supplier normal losses
iv. Frequency of end supplier large losses
v. Severity of normal losses
vi. Severity of large losses

Graphs showing the distribution fits that were used in the statistical simulation are available in Appendix B.

2.2.2 Monte Carlo Simulation

Due to the number of random variables that are being considered, a Monte Carlo simulation was used to forecast the expected losses to be paid by TICO. This approach considers the probability distribution of all frequency and severity variables that are relevant to TICO; converting to an expected loss calculation for the next ten years.

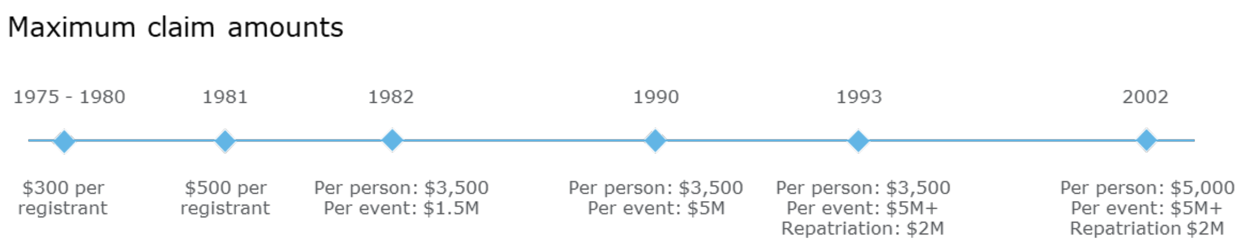
2.2.3 "Base Case" Financial Assumptions

The following were additional financial assumptions used in the Monte Carlo simulation.

i. Inflation rate = 2%
ii. Industry productivity rate = 1%
iii. Historical chargeback percent, after consumer files claim with TICO = 4.5%
iv. Forecasted chargeback percent = 4.735%
v. Maximum claims to be paid by TICO for a single event = $5,000,000

Figure 1 illustrates the changes in TICO maximum claim amounts over a 27 year period. The May 1990 increase in per event amount was a direct response to the Thompson Vacations failure, and repatriation amount was outlined as an amount sufficient for the repatriation and necessary accommodation of the client. At December 6, 1993 and January 1, 2002, the per-event amount is $5,000,000 plus the amount recovered by way of subrogated claim.

Figure 1: TICO Maximum Claim Thresholds from 1975-2002



2.3 Financial Forecast

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 and has been updated since the previous engagement Report, with changes outlined in the following sections.

2.3.1 "Base Case" Assumptions

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. TICO's Enterprise Risk Management Framework was updated in January 2018, and states TICO's risk appetite as 'very low' reflecting the public value that TICO strives to achieve. The tolerance for risk is articulated by management as twice the expected annual losses. With this in mind, the Base Case uses a conservative assumption that the losses seen in all years will be at the 75th percentile, which has been updated from the 50th percentile in the previous engagement Report, in order to reflect a more conservative scenario broadly consistent with TICO's Risk Appetite. It should be noted that the percentiles are derived from historical loss data that do not contain any catastrophic losses.

The Base Case assumes macro level drivers of inflation at 2%, travel industry growth at a rate that is 1% higher than inflation, and a chargeback percent of 4.5%. These are unchanged from the previous engagement Report. The rate of return of investments has been increased from 2.5% to 3.0% based on Management's best estimates. Additionally, the expected loss distribution has been updated to include End Supplier Failure.

2.3.2 "No End Supplier" Assumptions

The "No End Supplier" scenario is a modification to the financial model which does not consider a scenario where end suppliers are still covered by TICO. This affects the normal loss percentile of the expected loss distribution; i.e. at the 75^{th} normal loss percentile, excluding End Supplier failure decreases expected losses.

2.3.3 "Inflation-Adjusted Limits" Assumptions

An additional modification to the expected loss distribution has been considered in our modelling to allow for an inflation adjustment to the current $5M maximum threshold on losses. Including an inflation adjustment to maximum coverage affects the 98th to 99th percentile of losses only.

Section 3: Simulation of Fund Size

3.1 Expected 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 aggregate losses, Deloitte performed a Monte Carlo simulation using the random variables and assumptions outlined in section 2.2, and executed 20,000 simulations to determine the distribution of aggregate losses over the next 10 years. This was in turn used in the forecast of the Fund level.

Figure 2 shows the result of the simulation in the "Base Case" scenario, and the distribution of aggregate losses, for one fiscal year. The simulated results have a right-skewed distribution and peak at around $100-200K. The mean of aggregate losses under this scenario are $0.97M, whilst the 50th percentile (median) is $0.53M, and the 75th percentile is $1.3M.

3.2 10-year Forecast of Fund Size

Our financial projection of the P&L of the Fund managed by TICO allowed the expected range of the Fund, up until 2028, to be determined. The level of the Fund at five and 10 years have been forecast after considering a number of different scenarios with varying assumptions.

In the Base Case scenario the Fund remains approximately level over the 10-year period, resulting in a Fund size of $22M in five years and $22.1M in 10 years. This scenario was also considered with a normal loss percentile of 50, as was used as the Base Case in the previous engagement Report, and at the 75th percentile. It is important to note that these figures are projections of the Fund size under current funding mechanisms and do not consider possible scenarios of catastrophic losses. In order to safeguard the Fund against large unexpected losses it is necessary to consider additional scenarios in order to set an appropriate Target Fund size (this approach is consistent with the stress testing approach used to set internal capital targets throughout the insurance and banking industries).

When considering the Base Case scenario plus the addition of two large losses, the Fund size is decreasing each year, with a projection of $17.3M in five years and $16.4M in 10 years. For the purposes of this scenario, individual large losses are defined as being larger than $0.4M, unchanged from the definition from the previous engagement report.

3.2.1 Inflation Adjustment to Limits

In the Base Case scenario, an inflation adjustment to the maximum coverage is not included. However, when included, the projection of Fund size remains at the same level as the Base Case scenario, since an inflation adjustment to maximum coverage affects the 98th to 99th percentile of losses only. This assumption does not make a difference in the Fund level projection in 10 years.

At the current maximum per event limit of $5M, TICO may experience difficulty dealing with a claim size of $8M for example. The discussion of whether to pay the claim or not as it exceeds the current event limit may cause delays in managing the claims. If the event limit was adjusted by inflation to today's value of $10.3M, then TICO would avoid the potential future debate of paying a claim between $5M and $10.3M. Raising the per event limits affects TICO in more of an operational aspect rather than in a financial one.

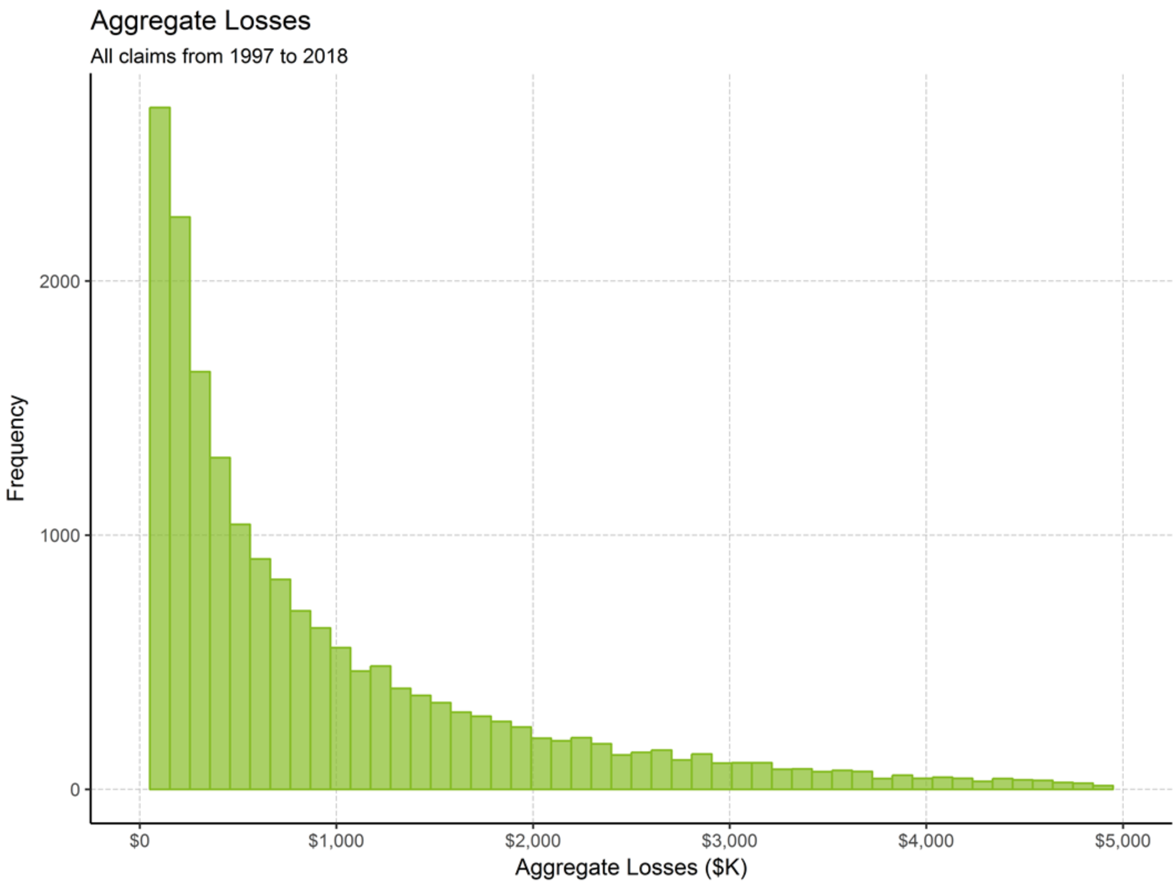
It is expected that if limits are raised, that funding be increased as well to ensure the Fund can be replenished now that larger claims may be paid out.

3.2.2 Removal of End Supplier Coverage

The Base Case scenario of our financial projection of the P&L of the Fund includes End Supplier Failure as an assumption in the expected loss distribution. When this assumption is removed, the result is a projection of a Fund size is approximately $1M higher in five years and $3M higher in 10 years i.e. projections of $23.3M and $25.4M respectively.

Deloitte has reviewed the impact of removal of end supplier coverage and has concluded that the impact is not significant and does not affect the recommended Target Fund size. A more significant determinant of Target Fund size is the possibility of large registrant failures, as discussed in the following section. Additionally, it should be noted for the Board to consider that the removal of end supplier coverage would result in a reduction in consumer protection which goes against the mandate of TICO.

Figure 2: Simulated Aggregate Losses in 2018



3.3 Deterministic Projection of Catastrophic Losses

A large registrant failure could result in the Fund facing a loss between $20M and $183M, with the "Moderate" scenario equaling $62M. The "Moderate" scenario considered a large registrant failure during the busy March break season where the estimated number of Ontario passengers is 135,000 for the month. The cost allocated for repatriation is $8.6M. A key assumption made in the projection was that 90% of passengers would receive credit card refunds (chargebacks) as their primary method of reimbursement. If fewer passengers file for chargebacks, then the costs to the Fund increase substantially. A 10% decrease in the passengers filing for chargebacks, results in a 50% increase to the costs of the Fund.

These results have been stress tested to consider more extreme events and to account for possible misestimate errors in assumptions. We have performed calculations using more conservative and more aggressive assumptions relating to:

i. Advanced booking percent

ii. Number of passengers
iii. Chargeback ratios
iv. Air-only vs. packaged holidays

When performing stress tests on *individual* assumptions, loss amounts to the Fund are in the range of $40M to $118M. We considered a worst case scenario where all four of the above stated factors were simultaneously stressed, the Fund would incur a loss of $183M. The results of the stress test scenarios are shown in Figure 3, with corresponding assumptions shown for the best, worst and moderate cases in Table 1).

Table 1: Large Loss Scenarios

Assumptions	Best Case	Moderate Case	Worst Case
Advanced Booking Percent	30%	50%	70%
Number of Passengers	16,875	33,750	50,625
Chargeback Rates	98%	90%	70%
Air-only vs. packaged holidays	40% air	25% air	10% air

Figure 3: Ranges of Loss due to Large Registrant Failure

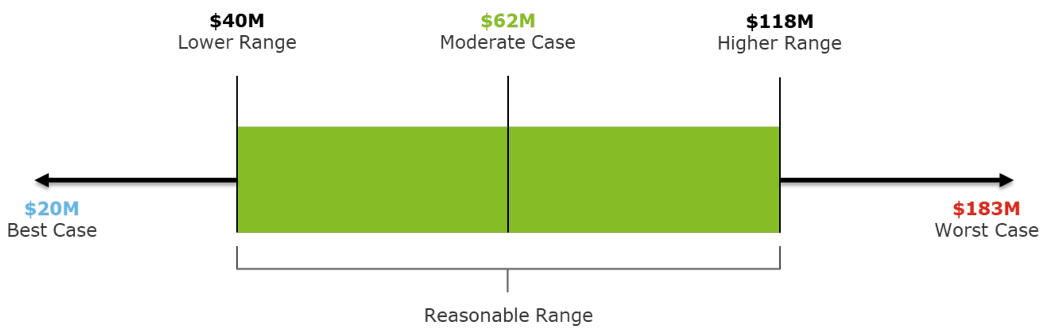


Table 2: Profit & Loss for TICO until 2028 (Base Case)

	31-Mar-19	31-Mar-20	31-Mar-21	31-Mar-22	31-Mar-23	31-Mar-24	31-Mar-25	31-Mar-26	31-Mar-27	31-Mar-28
Revenue										
Payments from Ontario Gross Sales	4,271,776	4,357,212	4,444,356	4,577,687	4,715,017	4,856,468	5,002,162	5,152,227	5,306,793	5,465,997
Renewals	1,043,961	1,041,243	1,043,951	1,043,951	1,043,951	1,043,951	1,043,951	1,043,951	1,043,951	1,043,951
New registrants	281,250	281,250	281,250	281,250	281,250	281,250	281,250	281,250	281,250	281,250
Education standard fees	225,000	0	0	0	0	0	0	0	0	0
Total Revenue	5,821,987	5,679,705	5,769,557	5,902,888	6,040,218	6,181,669	6,327,363	6,477,428	6,631,994	6,791,198
Expenses										
Salaries and benefits	2,847,141	2,904,084	2,962,165	3,021,408	3,081,836	3,143,473	3,206,343	3,270,470	3,335,879	3,402,596
Other Operating Expenses	2,263,048	2,245,670	2,182,171	2,225,814	2,270,331	2,315,737	2,362,052	2,409,293	2,457,479	2,506,629
Amortization	28,000	156,577	93,077	94,939	96,837	98,774	100,750	102,765	104,820	106,916
Cost of Reinsurance	0	0	0	0	0	0	0	0	0	0
Total Expenses	5,138,189	5,306,331	5,237,413	5,342,161	5,449,004	5,557,985	5,669,144	5,782,527	5,898,178	6,016,141
Expense Ratio	88%	93%	91%	91%	90%	90%	90%	89%	89%	89%
Operating Income	683,798	373,374	532,144	560,726	591,214	623,684	658,219	694,901	733,817	775,057
Investment Income	765,000	865,647	968,216	971,644	975,494	978,408	980,259	981,679	983,287	984,482
Operating Income + Investment Income	1,448,798	1,239,021	1,500,360	1,532,370	1,566,708	1,602,092	1,638,477	1,676,580	1,717,104	1,759,539
Claims										
Inflation + Growth mult. Factor	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
Aggregate Losses	1,310,090	1,377,418	1,416,195	1,437,826	1,495,168	1,556,647	1,603,608	1,637,104	1,687,755	1,761,862
Expanded Coverage	0	0	0	0	0	0	0	0	0	0
Total Claims	1,310,090	1,377,418	1,416,195	1,437,826	1,495,168	1,556,647	1,603,608	1,637,104	1,687,755	1,761,862
Net Operating Income	138,708	-138,397	84,165	94,544	71,540	45,446	34,870	39,476	29,349	-2,323
End of Year Assets										
TICO Capital	2,027,316	2,027,316	2,027,316	2,027,316	2,027,316	2,027,316	2,027,316	2,027,316	2,027,316	2,027,316
TICO Fund	21,883,638	21,745,241	21,829,406	21,923,950	21,995,490	22,040,936	22,075,805	22,115,281	22,144,630	22,142,307
Total Assets	23,910,954	23,772,557	23,856,722	23,951,266	24,022,806	24,068,252	24,103,121	24,142,597	24,171,946	24,169,623

Section 4: Qualitative Review of Other Industries and Funding Mechanisms

4.1 Travel Insurance

In the event of undelivered travel services due to the default of a travel supplier, travelers can try to make a claim from their travel insurance policy. However, some policies explicitly state that benefits are payable provided that you cannot recover all of the cost of such undelivered travel services either from the travel supplier, any federal, provincial or other compensation fund.

It would seem that any travel insurance coverage would be secondary to the benefits provided by the TICO Fund. However, there are a few plausible reasons as to why a travel insurer would settle the claim:

- The simplest explanation is that the insurer does not want to upset the policyholder and decided it was in their own interest to pay the small claim amount and keep their reputation intact.
- It is also possible that the insurance agent in charge of settling the claim may have settled the claim out of error. Perhaps they are not familiar with travel supplier defaults and decide this is the appropriate way to settle the claim.
- In most cases, the only time the insurer would have a legal obligation to cover the policyholder was if the claimant could not recover their losses from the TICO Fund. TICO has a list of areas that are not covered by the Compensation Fund. An example of a case where TICO would not cover a policyholder is if "Travel services were received as a prize, award or goodwill gesture". Additionally, TICO states that they will not reimburse "payments for travel services, which are not received due to the failure of an out-of-province travel wholesaler (tour operator) or out-of-province travel agency". Consider a scenario where the policyholder suffered losses due to the failure of a travel agency based out of Manitoba. It would then seem that TICO would not cover the claim, but the travel insurer may.

4.2 Quebec Compensation Fund

On November 15, 2017, the Quebec National Assembly unanimously passed Bill 134, an Act to modernize parts of the Consumer Protection Act, including the Travel Agents Act. The majority of the amendments relating to the Travel Agents Act will not come into force until the completion of regulation changes.

On July 24th, the Office de la protection du consommateur (OPC) issued a press release advising that as of August 1, 2018, the changed provisions for claims on the fund (expanded coverage) and other regulatory amendments will be in effect. On January 1, 2019, travel agents will no longer collect the consumer protection fee.

In addition to coverage for travel services not received due to bankruptcy or insolvency, the new legislation/regulation will reimburse travelers for additional loss of travel services, the Quebec compensation fund will now reimburse for situations such as:

- an event that is predictably likely to prevent a provider from rendering the services paid to the travel agency, such as a natural disaster or political or military crisis;
- the issuance by the Government of Canada of an official warning recommending the avoidance of any travel or non-essential travel to the place of destination after the purchase of a tourist service;
- another service that was not provided as planned (for example, the delay of a flight that would prevent a traveler from being present at the start of the cruise).

Also, the Quebec fund increased their fund limits; removed the six-month waiting period for reimbursement and added reimbursements for costs incurred due to flight cancellations ($200 per day, per person for meal & lodging expenses).

4.2.1 Compensation Fund

- There is a new provision that when the fund reaches a surplus of $125 million, the consumer contribution is to be collected and then immediately refunded. Once the fund balance reaches $75 million the collection of the consumer fee resumes.
- The current regulations set the consumer contribution on a graduated scale based on the accumulated surplus of the fund as of the March 31 fiscal year-end.

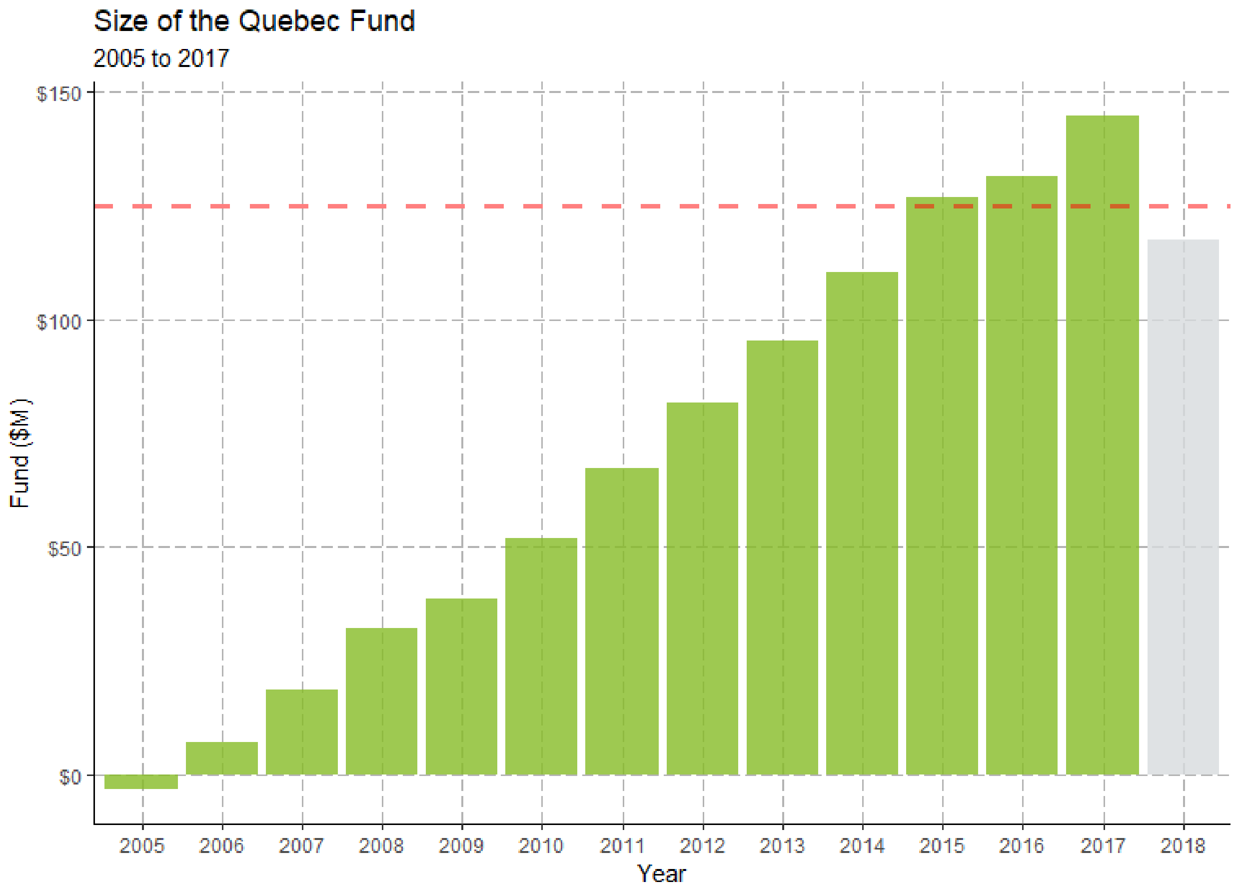
  The new regulation maintains the same graduated scale but has added clarity to when the change to the percentage applicable to the calculation of the contribution takes effect. All future percentage changes will take effect on January 1 of the year following the submission of the March 31 fund financial statements

Table 3: Fund Contribution Structure

Surplus Accumulated in the Fund	Percentage of Tourist Services
Up to $75 Million	0.35%
Up to $100 Million	0.20%
Over $100 Million	0.10%

- Under the new regulations, as the fund amount decreases due to the non-collection of contributions, the amount of the consumer contribution calculation will increase showing the higher amount as both a collection and refund on the invoice, until the balance reaches $75 million when travel agents will be required to once again submit the contributions to the fund. At that point the contribution will be at 0.35%.
- Increasing the per event indemnity limit for the fund – to either 60% of the accumulated surplus or $30 million, whichever is less
- Changes to the provisions for consumer claims on the fund, codifying practices to include full end supplier coverage.

Figure 4: Quebec Fund Size 2005-2017 with Projection



The level of the fund is expected to decrease following 2017 due to changed legislation enforcing a cap at $125M (dashed line), and the consequences of the Sinorama failure. La Presse reported that an estimated $26M was missing from client accounts, a deficit that would eventually have to be repaid to thousands of Sinorama clients. Additionally, the OPC website lists a payment of $1.1M to enlist professional services to assist with treatment of Sinorama claims[1] , indicating an estimated hit to the fund of $27.1M during 2018 (grey bar). Note that the TICO Fund would be depleted following a loss of this magnitude.

4.3 United Kingdom Regulation

The UK has two pieces of legislation to protect consumers in reference to travel supplier defaults: Air Travel Organisers' License (ATOL) Regulation (covers holidays involving flights) and The Package Travel and Linked Travel Arrangements Regulation (covers package holidays without flights).

Package Travel Regulation covers package holidays and the non-flight sector. Package travel is considered two or more travel services for the purpose of the same trip. A travel service is defined as transport, accommodation, car rental, or other tourist service accounting for a significant proportion of the package. The regulation requires suppliers who sell travel packages (those not including flights) to

[1] http://www.seao.ca/OpportunityPublication/ConsulterAvis/Recherche?ItemId=13e253cc-15b3-404b-95bc-699f63e83969&callingPage=0&searchId=ac919a16-f796-40ef-817e-8c26fb729eec&VPos=233.60000610351562

offer insolvency protection to customers. Examples of protection include insurance, and prepayments held in trust.

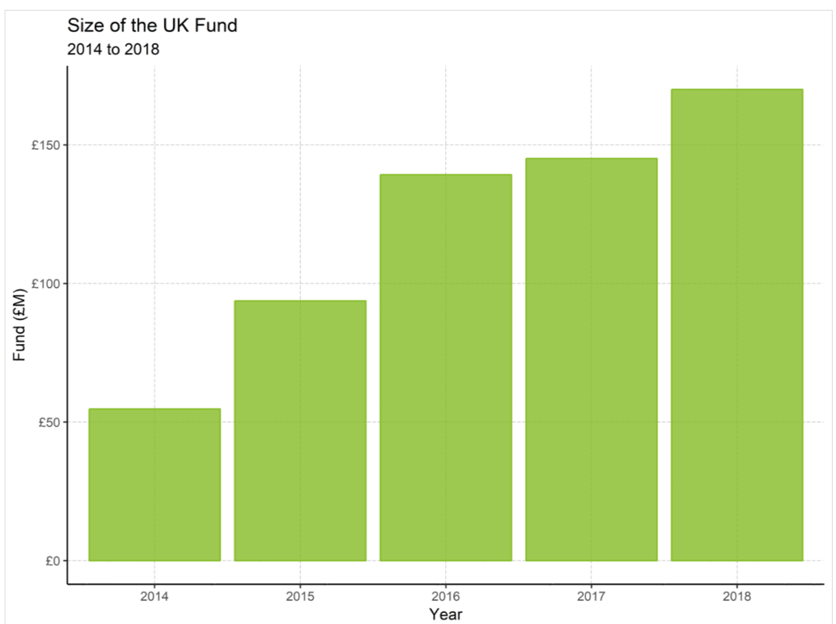
Air Travel Organisers' License Regulation requires organizers selling holidays involving flights to be licensed by the Civil Aviation Authority (CAA). Tour operators who sell flight-only arrangements are required to hold ATOL licenses. Protection does not apply to flights that are bought directly from an airline. ATOL regulation protects consumers in the instance where your holiday is booked with a single travel firm and features a package including a flight such as a flight and accommodation, or a flight and car hire.

The Air Travel Trust (ATT) is used to protect consumers if the travel business they booked with collapses. An ATOL Protection Contribution of £2.50 per passenger is paid by ATOL holders into the Air Travel Trust. The Trust has a surplus of £169 million as of March 31, 2018. The fund has been growing on average 35% yearly since 2014. The reason for low growth in 2017 was due to an abnormal £25M expense for contingency planning. The 2018 growth was limited by £16M in Monarch claim payments. Figure 4 illustrates the growth of the fund. Furthermore, the Trust has in place insurance policies that provide the Trust with up to £400M annual protection. Over the last three years, the cost of insurance is about 20% of the total revenue from contributions collected.

The UK fund has more frequent collection of payments from travel suppliers and a late payment penalty. By not collecting fees more frequently, TICO is losing potential investment gains. The Air Travel Trust has the following payment frequency set up:

i. Standard ATOL Holders with up to £5M sales pay quarterly
ii. Standard ATOL Holders with more than £5M sales pay monthly
iii. Small Business ATOL Holders pay annually

Figure 5: ATT Fund Size 2014-2018



4.3.1 Consumer Credit Act and Chargebacks

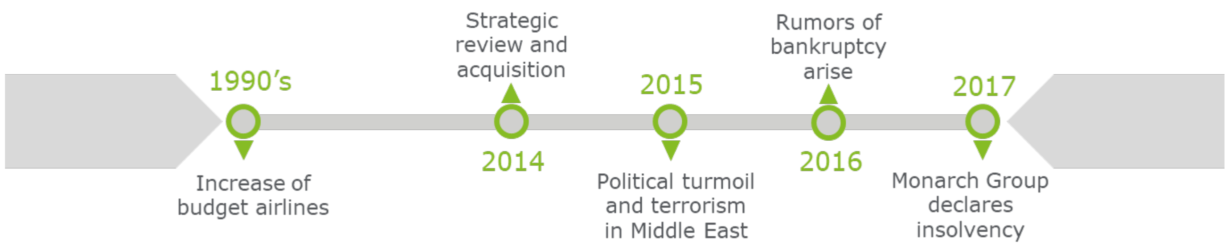
In the UK, under Section 75 of the Consumer Credit Act 1974, credit card issuers are jointly and severally liable with the merchant for breaches of contract. In the context of airline insolvency, the failure of an airline to honor a contract of carriage is included, and card-holders are entitled to claim a refund of all personal losses and any applicable consequential losses. Limitations apply, and consist of: cover is limited to purchases valued over £100, only personal losses are covered; this excludes losses to others involved in the booking, and protection depends on the nature of the contract - whether it is with the airline or a third party.

A Charge-back is an additional non-statutory scheme which forms a part of a card issuer's agreement with Visa and MasterCard. Those who pay an airline direct with a participating debit or credit card may request their card issuer to reverse a disputed transaction, subject to time limits (claims must be made within 120 days of the transaction). This includes the failure of an airline to honor a contract of carriage due to insolvency. Other card schemes in the UK such as PayPal and American Express provide similar arrangements.

4. Monarch Insolvency

4.4.1 Background and History

Figure 6: Timeline of Monarch Events Leading to Insolvency



In October 2017, Monarch Group, which includes Monarch Air, Monarch Holidays, First Aviation, Avro Flights and Somewhere2stay Ltd, ceased operations and entered insolvency administration after 50 years of operation. Monarch Air was the 5th largest airline in Britain, and the largest ever to fail.

The Monarch Group had been facing financial difficulties due to various drivers in the prior decades leading up to its declaration of insolvency and cessation of business. During the 1990's, Monarch Airlines struggled to compete with the sudden increase in budget airlines and the emergence of low-cost carriers. While the company operated profitably until 2009, the years 2009 and 2010 yielded losses of £32.3 million and £45 million respectively– a result of high jet fuel prices, a stagnant economy, and political turbulence in the Middle East.

Monarch Airlines continued to struggle financially during the period from 2011-2016, and their imminent bankruptcy became apparent in 2016. At this time, the CAA initiated a contingency plan, spending approximately £25 million to arrange to lease aircrafts to repatriate Monarch customers if required. Monarch raised £165 million in investment funding which allowed them to extend their ATOL license for another year. Monarch reported a year-end pre-tax loss of £297.9 million in 2016.

In 2017, Monarch Group officially declared insolvency, with £27.8 million in the bank. At this time, Monarch owed over £500 million to creditors, with their owners holding a secured debt of approximately £167 million.

4.4.2 Causes of Failure

The suggested causes of the Monarch include acts of terrorism, business decisions, and Brexit. Due to terrorism in 2015, Monarch was exposed to risk resulting from weakened consumer demand for its most valuable winter destinations. Monarch attempted to redirect their efforts to the saturated Mediterranean market, and was forced to drop their fares, unable to compete with low-cost carriers. Monarch restructured their business model by ceasing charters and shifting focus to short-haul budget flights, the most competitive market in Europe in 2017, however time ran out and they were unable to find a buyer for short-haul operations before their ATOL license expired. Finally, due to Brexit and the value of the pound dropping 10% against the dollar in 2016-2017, Monarch dealt with higher costs and lower revenues. The actual increase in costs as a result of this contributed £50 million a year to Monarch's costs.

4.4.3 Cost of Failure

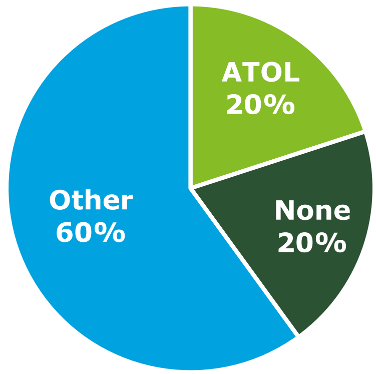
The cessation of Monarch business left approximately 110,000 passengers overseas, 600,000 passengers with future bookings and 2,000 employees without jobs. Despite the CAA being aware of the imminent collapse of Monarch and having 4 weeks to put in place a contingency plan, they only had 2 days' notice that Monarch was going into administration. The CAA repatriation plan used leased planes to match the airline's original schedule, and 98% of passengers returned on the same day as originally planned.

Table 3: Resources Exhausted during Monarch Repatriation in 2017

Group	Costs & Resources Contributed
Repatriation by CAA	• £60 million ($104.6 million CAD) – apportioned between ATT and Department of Transport • 60 aircrafts from 24 airlines (567 flights over 2 weeks) • 40 airports involved • £590 ($986 CAD) - average cost per passenger
Air Travel Trust	• £11.5 million ($19.2 million CAD) of the £60M to repatriate 19,322 passengers holding ATOL certificates • Over 52,000 ATOL package holiday claims for future bookings to be made, worth £23 million pounds ($39.6 million CAD)
Other	• Credit card company coverage • Debit/Credit Card/PayPal chargebacks • Package Travel Regulation • KPMG as an unsecured creditor (for consumers who were ineligible for refund through ATT, their credit/debit card or travel agent, were able to file claims with KPMG)

Consumers sought reimbursement of losses due to the Monarch failure in a variety of different ways. 20% of them were covered through the Air Travel Trust by the ATOL legislation. 60% of consumers were protected through a mix of travel insurance, package travel regulation, chargebacks and credit card liability. 20% of consumers had no form of protection.

Figure 7: Monarch Consumer's Protection



4.5 Regulation in Other Jurisdictions

4.5.1 Air Berlin Insolvency

Air Berlin was a large airline with a fleet of over 140 aircrafts, operating short, medium and long haul services. The airline entered administration after 38 years of operation after its main shareholder, Etihad, withdrew its financial backing for the loss-making company. The German government provided Air Berlin a loan of €150m to continue its operations while it concluded ongoing negotiations to sell its assets before leaving the market, to be repaid from the proceeds of the asset sales.

The orderly wind down and restructuring plan were discussed by key creditors prior to the company entering administration, which allowed Air Berlin's Directors to continue trading and operating the airline with lower risks of creditor action. The administration regime allowed the airline to continue selling tickets to consumers, with money from the sales protected in an escrow account until delivery of services.

The airline continued to fly until October 2017, officially exiting the market in January 2018.

4.5.2 Danish Travel Guarantee Fund

From 2010-2015, customers could purchase airline bankruptcy cover from the Danish Travel Guarantee Fund (TGF), limited to Danish registered airlines (the population of Denmark of 5.7M is roughly 1/6th of Canada).This was not used widely until failure of Cimber Sterling Airlines in 2015, then the Danish government implemented changes to TGF under Travel Guarantee Act in July 2015 – a tax on all flights departing Denmark. Airlines would pay a contribution to TGF of DKK 2 ($0.40 CAD) per passenger departing from an airport in Denmark. The fund would hold a maximum of DKK 100M ($20M CAD), when contributions would be suspended. In the case of a significant bankruptcy drawing the fund below DKK 25M ($5M CAD), contributions of DKK 4 ($0.80) per passenger would be required. Since July 2015, the fund has been built up to DKK 70M ($14M) in the air-travel fund component, and DKK 50M ($10M) in the package travel component. Air Berlin drew down the fund by DKK 1.5M. The *Rejsegarantifonden* considered buying reinsurance to supplement the TGF and estimates of premiums were discussed, however they were very volatile.

The TGF will only cover travelers who purchase package travels, some flight-only (see Travel Services Covered) or linked travel arrangements from providers who are registered with the fund. Travel providers established in the EU or EEA country choose which EU or EEA country they want to provide insolvency protection (must be established in that specific country). Travel providers established outside the EU and EEA and who target their marketing at Danish market (e.g. a Danish website) must register in the TGF[2].

The Travel Guarantee Fund Act (the Act) Section 2 describes travel services covered:

i. Package tours: "package consisting of a combination of not fewer than two of components: transport, accommodation, and other tourist services".
ii. Service that includes transport and accommodation, provided by the same travel provider
iii. Transport and other tour services that do not cover a period of over 24 hours but are sold at a price of over DKK 1,000
iv. Air transport (covered only if a. the travel services has been embarked on and b. customer has valid travel documentation for repatriation to a Danish airport)

Section 5 and 5a of the Act[3] outlines coverage in the case of insolvency. If a travel provider's financial circumstances mean the customer is not guaranteed suitable repatriation, accommodation, reimbursement for loss: the fund shall organize these or pay a reasonable reimbursement, within a reasonable time. Additionally, the fund may assist in the completion of travel services if the fund takes the view that it will achieve a substantial financial saving this way.

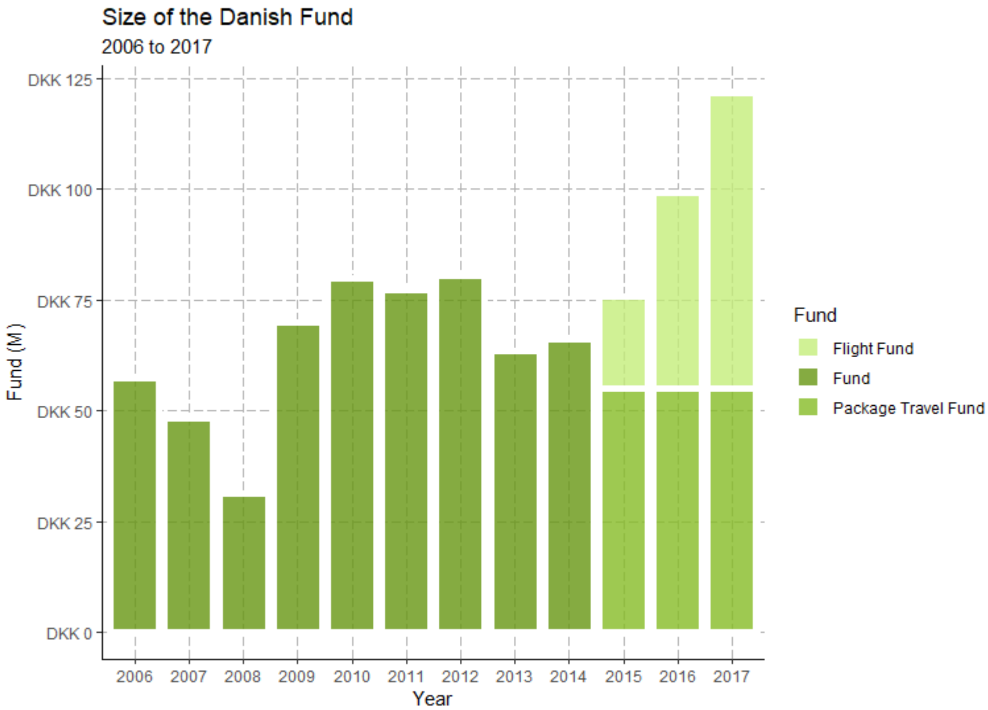
The fund assesses the risk of travel providers and the size of guarantee depends on the company's financial strength. Primary ratios that must be met:

i. Liquidity ratio above 1.0
ii. Adjusted quick ratio above 0.3
iii. Solvency ratio above 6% or 8% in case of deficit
iv. Equity/total turnover above 4, 6 or 8% depending on destination, supplier guarantees, etc.

An updated Accountant's report must be provided to the fund quarterly.

[2] https://www.rejsegarantifonden.dk/english/
[3] https://www.consumereurope.dk/media/14498/promulgation-of-the-travel-guarantee-fund-act.pdf

Figure 7: Danish Fund Size 2006-2017



Note that in 2015, legislative changes declared the Danish TGF would be split into two separate funds: the Package Travel Fund and Flight Fund. The Package Travel Fund is used to honor contracts for package travel in the case the supplier has become insolvent, while the Flight Fund is used if an air carrier has become insolvent.

At a population of 5.7M as of 2017 in Denmark and a total fund size of DKK 122M ($24M CAD), the TGF could provide $4.21 per citizen. Comparatively, the TICO Fund of $22M would provide $1.55 per Ontario citizen (at a population of 14.2M), and would not cover contracts made directly with an end-supplier.

At the time of the development of this report, Primera Air, a Danish budget leisure airline announced it would file for bankruptcy on October 2, 2018 after 15 years of operation. Reasons for the insolvency are currently listed as:

i. Delays of new Airbuses leading to high costs for wet lease and cancellations; and
ii. The airline owner being unable to secure financing[4].

It is reported that thousands of passengers in North America and continental Europe are left stranded and will require repatriation[5]. It is anticipated that the Danish TGF will face a sizeable loss during 2018 due to this event, and TICO expects losses from coverage of passengers (who booked through an Ontario registrant) who are impacted.

[4] https://thepointsguy.com/news/primera-to-declare-bankruptcy/

[5] https://www.independent.co.uk/travel/news-and-advice/primera-air-failure-bankrupt-budget-thousands-left-stranded-airline-stansted-airbus-a8563881.html

4.5.3 Consumer Protection in other Nordic Countries

Providing consumer protection in the case of insolvency of a travel operator in the method of regulation or a guarantee fund is common practice in other Nordic countries such as Norway, Sweden and Finland.

In Norway, the Package Travel and Travel Guarantee Act of 1995, or the Package Tour Act as of 2018, regulates offers of package tours and to contracts in respect to package tours agreed upon between a customer and an organizer or retailer of package tours. The Package Tour Act outlines that "the guarantee [Act] serves as security for the repayment of the customer's compensation if a travel is cancelled and the organizer is declared insolvent". *Reisegarantifondet* is the organization which governs the Norwegian Travel Guarantee Fund with the objective of administering the requirements of the Package Tours Act.[6]

The Swedish authority which operates and regulates commercial undertakings and guarantees is *Kammarkollegiet.* Anyone who arranges or sells travel arrangements regulated in the Swedish Travel Guarantees Act must, prior to selling or marketing their product, arrange a travel guarantee with *Kammarkollegiet.* The purpose of the Travel Guarantees Act is to protect travelers if a tour is cancelled or interrupted, including the case of travel operator insolvency.[7]

In Finland, the Finnish Competition and Consumer Authority (FCCA) is responsible for the establishment and implementation of competition and consumer policy, ensure the functionality of markets, and enforce regulation to secure the financial and legal status of consumers. The Travel Service Combinations Act and Act on the Supervisory and Insolvency Protection Fee Provided by Providers of Travel Service Combinations protect consumers in the case of travel operator insolvency for package travel arrangements.[8]

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[6] https://reisegarantifondet.no/en/norwegian-law-regulating-package-tour-operation
[7] https://www.kammarkollegiet.se/en/travel-guarantees
[8] https://www.kkv.fi/en/facts-and-advice/travelling-and-travel-agencies/travelling-and-transport/travel-package/

Section 5: Conclusion

5.1 Size of the Compensation Fund

Deloitte has reviewed TICO's current Fund mechanism and assumptions since the previous engagement Report to confirm the appropriateness of the previous recommendations in light of additional years' experience.

This report summarizes the updates made to Deloitte's financial models and introduced several scenarios available for TICO to determine the Target Fund size. Section 2 outlines our approach and details the assumptions and development of the Monte Carlo simulation used to model percentile of losses to the Fund. The assumptions and normal loss percentiles selected in our financial projection are discussed in Section 3.

In Section 3.2, the 10-year forecast of Fund size was projected to range from $33.1M to $22.4M under the Base Case scenario under current funding mechanisms. These estimates are used to forecast the health of the Fund over the next 10 years and is not an indication of what the Target Fund Size should be. Deloitte's opinion is to set a Target Fund Size larger than the 10-year forecast to account for large or catastrophic losses which may completely deplete the Fund. See Sections 5.1.1 and 5.1.2 for further discussion.

Deloitte has reviewed the results of the simulation and financial projection and continues to recommend a Target Fund Size of **$50M**, with new versions of our analysis supporting higher Fund levels, closer to $60M.

5.1.1 Large registrant failure

TICO's vision statement: *To be a progressive regulator advancing consumer protection, ethical business practices and a trusted marketplace where consumers are confident purchasing travel from registered professionals.*

A large registrant failure would significantly impact the Fund and expose TICO to financial risk. TICO operates with the objective of protecting consumers, and despite a maximum claim threshold of $5M, TICO would likely be motivated to provide reimbursement for losses exceeding the threshold. For example, if repatriation costs exceed the $2M (or $2M + $5M) one-time event limit, TICO and the Government of Ontario could suffer significant negative public reaction. Consider a hypothetical loss of $50M - this would deplete the Fund and put TICO at risk if additional registrants became insolvent.

5.1.2 10-year runoff of TICO operations

As an exercise, Deloitte considered a 10-year runoff scenario, in which TICO dissolves and ceases revenue collection but continues to cover failures for the next 10 years. TICO would need to maintain payments for operating expenses including rent, call centers, and coverage of the most sizeable expense: large losses to the Fund. In this hypothetical scenario, the government would likely let TICO run off. Deloitte's financial model projects that TICO would be able to cover failures and operations for 10 years with a Fund size of approximately $69M. This estimate is built using the 75th percentile of expected losses.

5.1.2 Risk Tolerance of TICO

The Compensation Fund, while not insurance, has many similar attributes as an insurance company and thus TICO bares similar risks. Traditional insurance companies set their losses between the 50th and 75th percentile for the purpose of reserving. The method chosen by TICO for forecasting purposes will depend on how the Board:

i. Seeks to set risk appetite level
ii. Envisions the future of the industry and probability of failures

Being a government Regulator with low tolerance for risk, TICO needs to prepare for large and catastrophic losses, despite their rarity of occurrence. While there has not been a large registrant or catastrophic loss in 21 years, this magnitude of loss has occurred in other jurisdictions globally, and would be significant for TICO. Based on the analysis summarized in Section 3.3, TICO would need to be prepared to cover a loss between $20M and $183M.

5.2 Funding Mechanism to Reach Target Fund Size

With recent developments in Ontario's political environment, increases to registrant fees and the introduction of a Consumer Protection Fee (CPF) may be difficult to implement. However, Deloitte continues to recommend these as the most efficient methods to fund and replenish Target Fund levels and to pay for potential reinsurance costs.

Deloitte's recommendations align all market participants: Registrants, TICO, private industry solutions, and the Government, to secure consumer protection at all levels, and ensure the adequacy of resources held by TICO.

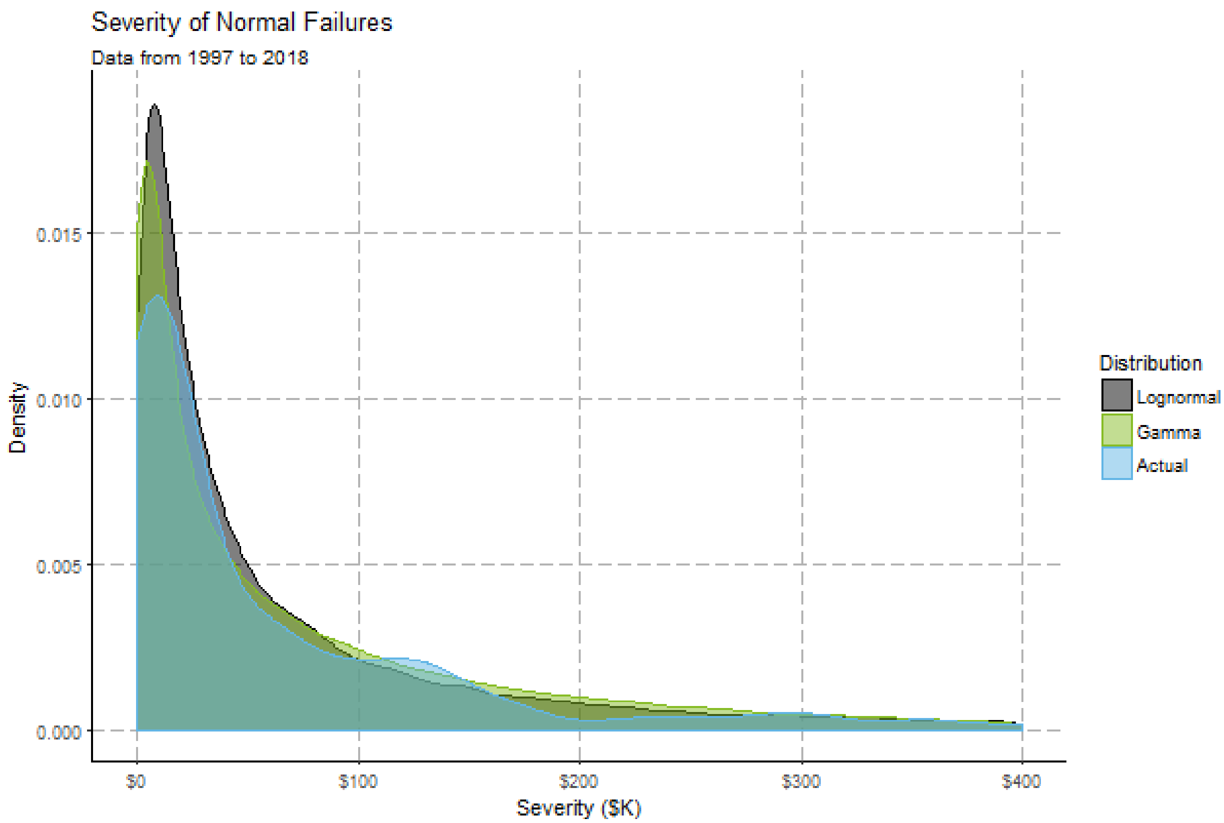
Appendix A: Dictionary

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 B: Maximum Likelihood Estimation

Maximum likelihood estimation (MLE) is a statistical method of estimating the parameters of a model or known distribution, given a set of historical data.

Deloitte used MLE to fit historical failure data provided by TICO to fit known distributions in order to arrive at an appropriate model to predict severity, frequency, and aggregate losses. This is illustrated in the figure below. The actual data (blue) was fitted to the Gamma distribution (Green) by MLE, providing suitable parameter values to define the Gamma distribution and its parameters to best model actual data. The fitted distribution is in turn used to generate random variables used in the Monte Carlo simulation.



Appendix C: Percentile of Losses

Percentile	2018	2019	2020	2021	2022
50%	$ 530	$ 550	$ 570	$ 580	$ 600
60%	$ 760	$ 790	$ 810	$ 830	$ 860
75%	$ 1310	$ 1380	$ 1420	$ 1440	$ 1500
95%	$ 3400	$ 3510	$ 3620	$ 3770	$ 3800
99%	$ 5370	$ 5550	$ 5650	$ 5920	$ 6020

Aggregate Loss Percentiles, in 000s

The above table 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.

For example, there is a 50% probability that aggregate losses will be less than $530K in 2018 and a 95% probability that aggregate losses will be less than $3.4M in 2018.

Note that these probabilities do not extend to multiple years. For example, the probability that the aggregate losses next year will be less than $530K *and* the aggregate losses in the following year will be less than $550K is 25%, not 50%.

Appendix D: Comparison of Aggregate Losses between Two Simulations

The graph below is a visualization of the changes in underlying historical data and changes in methodology in our simulation between the prior and current year. The green curve is the result of the enhanced methodology used in the current year. In the prior year (grey curve), the bulk of our simulations fell in the range of $350K to $1.5M. This year, in order to model a more accurate representation of historical losses, emphasis was shifted to smaller losses, and to larger losses above $2.1M to account for TICO's preference to remain conservative in our assumptions.

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