Ontario Gateway Insurance Case Study- Yellow Group 17

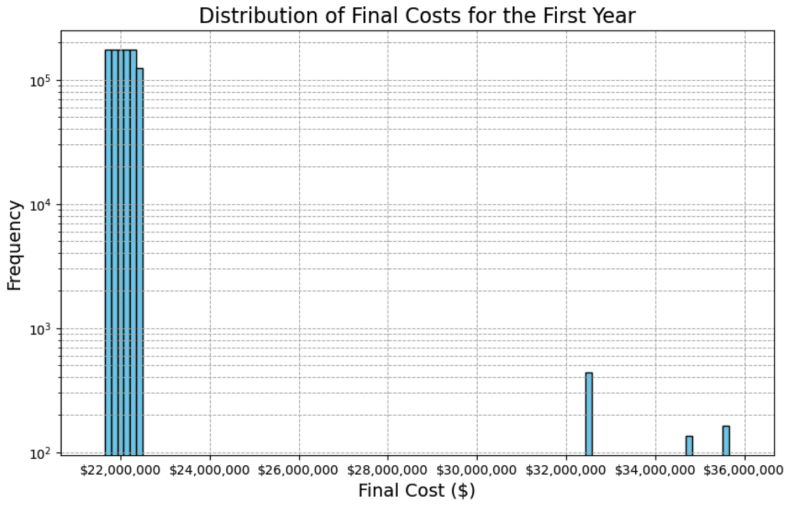
Introduction

Ontario Gateway, a major airline, requires a reliable insurance policy to cover potential crash losses over the next five years. The fleet comprises Boeing 757 and Airbus A340 aircraft, each with specific replacement costs and operational metrics. Due to high operating risks, especially in a capital-intensive industry, the firm is assessing multiple insurance policies to minimize potential liabilities without incurring excessive premiums. This case study evaluates the **RCNC1**, **RCNC2**, **CTC** and **HTC** insurance plans based on simulated costs, incorporating crash probabilities and incidental damages. Our goal is to recommend the most cost-effective plan with the lowest risk of exceeding the critical loss thresholds.

RCNC1 Plan Analysis

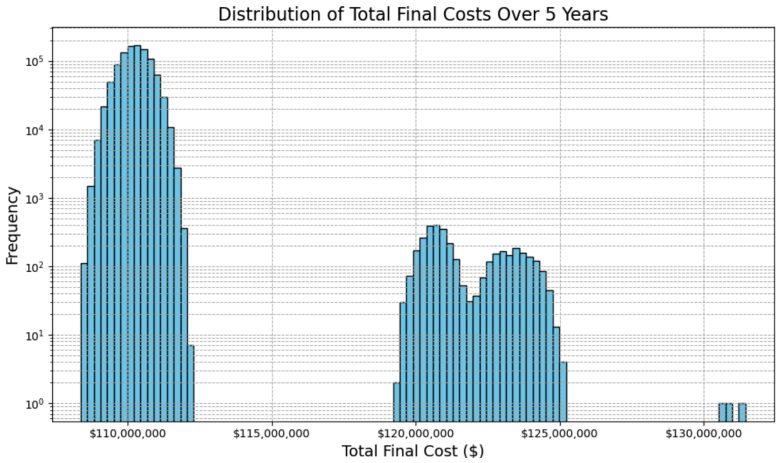
The RCNC1 plan charges a fixed annual premium of 0.45% of the fleet's replacement value, totaling **$26,812,350**, and includes a 10% deductible for crash losses. This structure allows the airline to benefit from a rebate of 20% if claims are below premiums paid over five years, making it a potentially economical option.

- **Yearly Cost Distribution**:



The distribution of RCNC1 annual costs centers around the fixed premium amount, with variability from incidental damages and crash frequency. The average cost for the first year is approximately **$22,058,638.36**, with a standard deviation of **$390,812.71**. The probability of exceeding the $37 million safety threshold is 0%, suggesting a stable annual cost profile.

- **Five-Year Cost Distribution**:

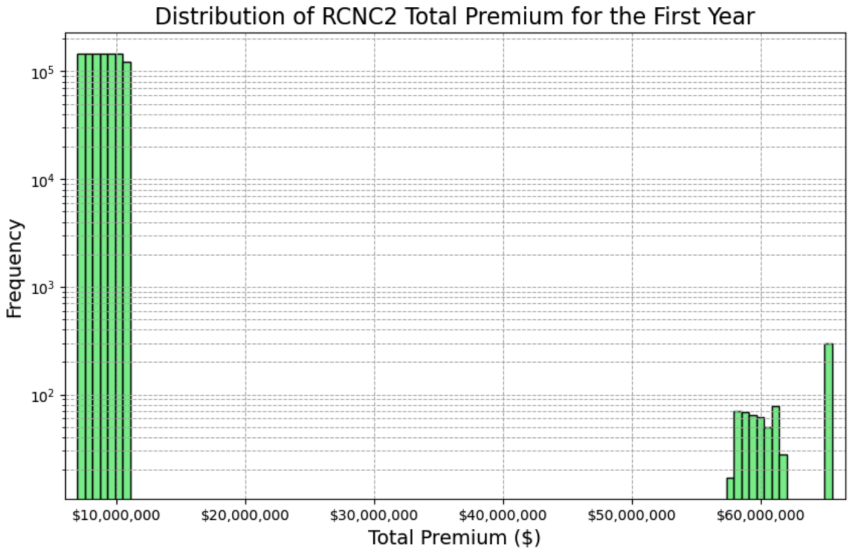


Over five years, RCNC1 shows moderate fluctuations in total cost, with an expected five-year cost of **$110,290,590.99** and a standard deviation of **$861,425.65**. RCNC1's stability in average costs makes it suitable for budget predictability, while the potential rebate offers additional cost-saving benefits.

RCNC2 Plan Analysis

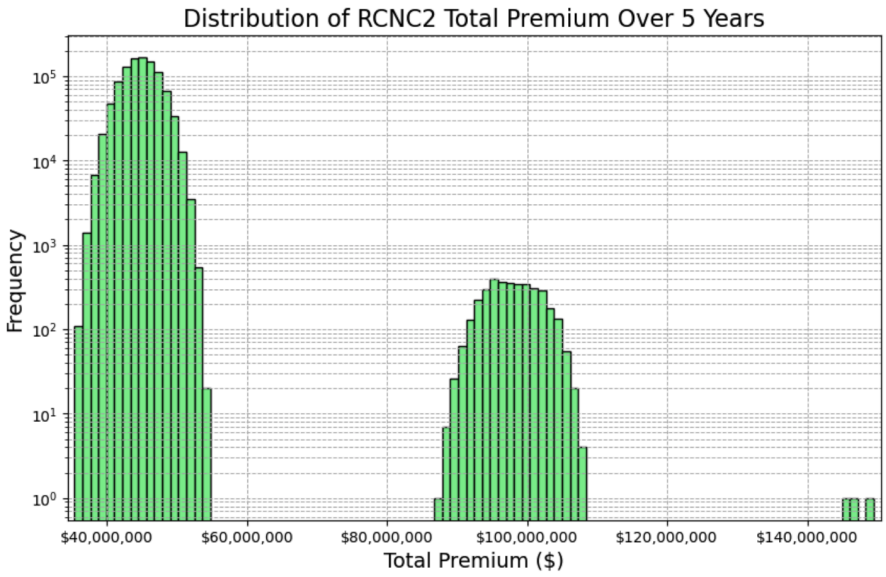
The RCNC2 plan offers a lower fixed premium of 0.10% of the fleet's replacement value, totaling **$5,958,300**, supplemented by a variable premium capped at the lesser of 90% of yearly losses or 1% of fleet value. This structure introduces more variability, allowing the firm to manage costs better in low-incident years while capping exposure in high-incident years.

- **Yearly Cost Distribution**:



RCNC2's cost distribution for the first year shows a broader range due to the variable premium component. The average first-year cost is **$8,998,770.03**, with a higher standard deviation of **$1,849,705.47** compared to RCNC1. The probability of surpassing the $37 million threshold remains low, at **0.07%**, indicating effective risk management even in high-loss scenarios.

- **Five-Year Cost Distribution**:



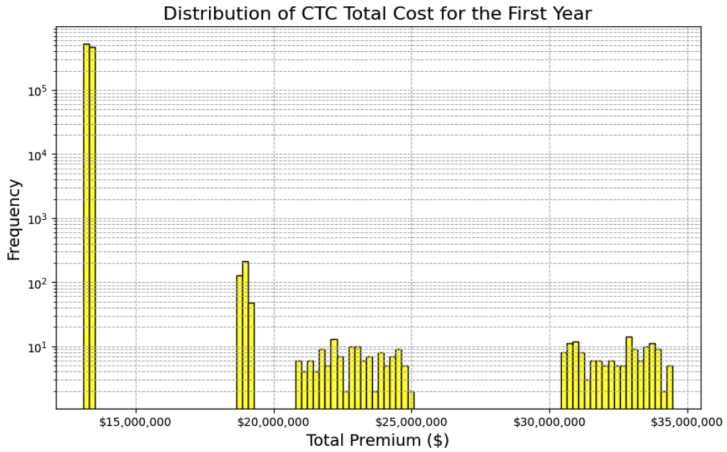
The five-year cost profile for RCNC2 displays moderate variability but remains within manageable bounds. The average five-year cost is **$44,981,615.90**, with a standard deviation of **$4,082,457.19**. RCNC2's capped variable premium effectively limits exposure, particularly beneficial in years with multiple incidents.

Key Findings for RCNC2: RCNC2's lower fixed premium with a cap on the variable component provides cost flexibility while mitigating extreme loss risks. This plan is ideal for Ontario Gateway if cost control is essential and the firm prefers lower initial premiums.

CTC Plan Analysis

The CTC plan involves a fixed premium of $13 million annually, covering up to $80 million in losses per year. Losses above $80 million are not covered, providing cost stability with limited risk of extreme losses.

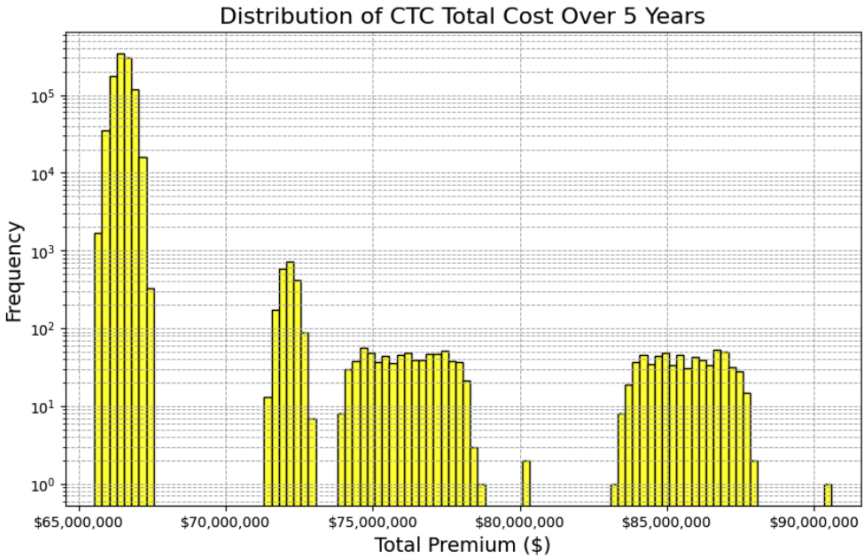
- **First-Year Cost Distribution:**



Average Cost: $13,305,242.75

- Standard Deviation: $298,422.54
- Range: $13,100,000.00 to $34,471,691.37
- Probability of exceeding $37 million: 0%

- **Five-Year Cost Distribution:**



- Average Cost: $66,530,477.59
- Standard Deviation: $659,157.97
- Range: $65,539,279.58 to $90,582,512.46

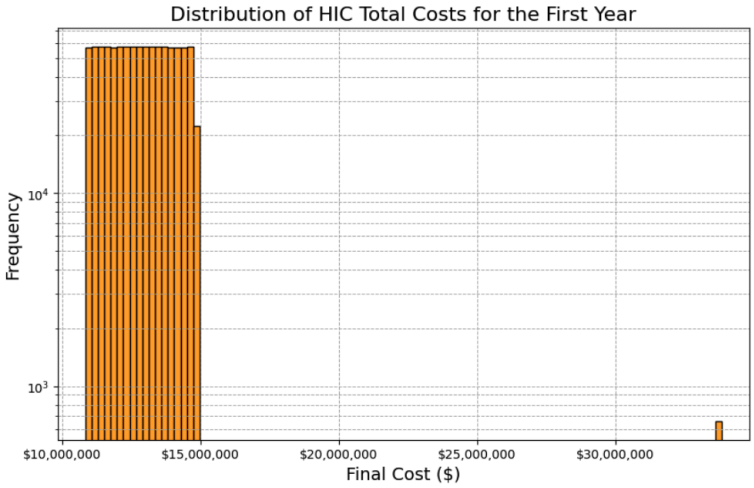
Key Findings for CTC: CTC provides stable costs with a zero probability of exceeding $37 million annually. Although slightly more expensive on average than RCNC2, CTC's lower

standard deviation makes it a viable alternative for Ontario Gateway if cost predictability is a priority.

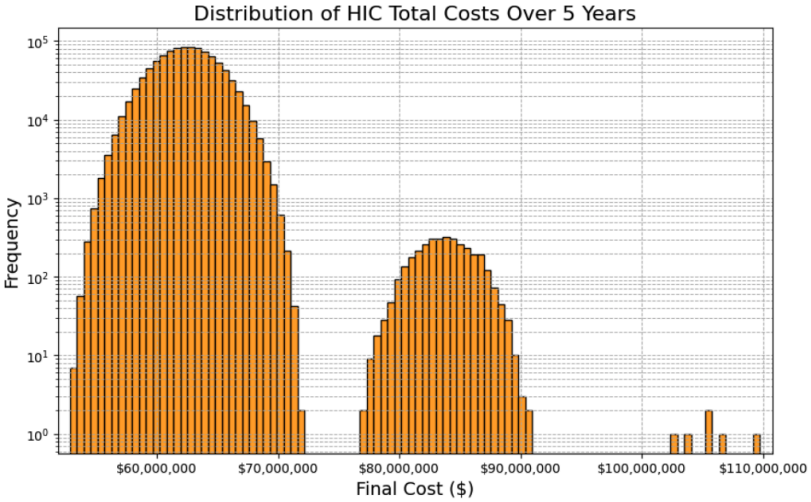
HIC Plan Analysis

HIC has an annual premium of 0.165% of the fleet's replacement value and covers losses up to $24 million. Similar to RCNC1, HIC offers a rebate structure if claims are below certain levels.

- **First-Year Cost Distribution**:



  - Average Cost: $12,843,356.38
  - Standard Deviation: $1,773,241.88
  - Range: $10,831,195.86 to $33,831,195.00
  - Probability of exceeding $37 million: 0%
- **Five-Year Cost Distribution**:



  - Average Cost: $62,526,835.41

- Standard Deviation: $2,682,384.16
- Range: $52,828,311.68 to $109,739,512.89

Key Findings for HIC: HIC has a similar cost profile to CTC, with slightly lower average costs but higher variability. It provides a balanced option if Ontario Gateway values the rebate structure and moderate cost containment.

Recommendation

Based on the analysis, **RCNC2** is the recommended insurance plan for Ontario Gateway. It has the lowest average cost, with manageable risk levels and only a 0.07% chance of exceeding the $37 million threshold. If further cost stability is desired, **CTC** can be considered as a secondary option due to its consistent cost profile and reduced probability of significant financial variance.