

# Reserving for loyalty rewards programs – Part II

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# Agenda

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- ▶ What are loyalty rewards programs?
- ▶ Overview
- ▶ **Actuarial roles in loyalty programs**
- ▶ **Basics of loyalty rewards**
- ▶ **Customer behavior**
- ▶ Basic estimation methods
- ▶ Which program should I join?

# Actuarial roles in loyalty programs

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Actuaries have a long history of applying quantitative methods to solve financial problems within the insurance industry. Many of these skills lend themselves to serving roles in the loyalty rewards space.

## Common actuarial functions

- ▶ Program design and development
- ▶ Reserving for loyalty rewards programs
- ▶ Cost-impact studies on program changes
- ▶ Behavioral segmentation studies

These functions are generally aided by the statistical, financial-modeling and applied business-focus that is fundamental to the actuarial skillset.

# Key data elements

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When reserving for loyalty rewards programs, the key data elements to gather are:

- ▶ Redeemed points
- ▶ Earned points
- ▶ Forfeited points
- ▶ Points outstanding
- ▶ Cost per point
- ▶ Terms and conditions
- ▶ Others possibly required are prior redemptions or earnings activity, depending on method.

# Basic relationships

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$$\text{Outstanding Points} = \text{Issued Points} - \text{Redeemed Points} - \text{Forfeited Points}$$

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$$\text{Liability} = \text{Outstanding points} \times \text{Cost per point} \times \text{Ultimate redemption ratio on outstanding points}$$

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$$\text{Liability} = \text{Cost per point} \times \left[ \text{Issued points} \times \text{Ultimate redemption ratio on issued points} - \text{Points redeemed} - \text{Points forfeited} \right]$$

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# Key risks in loyalty rewards programs

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Key risks and uncertainties in loyalty rewards reserving:

- ▶ Timing risk
- ▶ Redemption rate risk
- ▶ Inflation risk



# Customer behavior

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One of the key areas of differences between insurance reserving and loyalty rewards reserving is a focus on customer behavior and how it is affected by various circumstances.

- ▶ Behavioral patterns of customers with different tiers of membership
- ▶ How program changes affect member behavior and how different types of members are affected differently
- ▶ Program retention

# Elite credit card – case study

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Elite credit card is interested in having an actuary review their rewards program to better understand the cost of their redemptions and uncollected rewards.

Elite offers three different credit cards:

- ▶ Silver
- ▶ Gold
- ▶ Diamond

For all credit cards, points can be redeemed for cash rewards in 2,000 point increments.

# Elite credit card – case study

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- ▶ The **Silver Card** is open to anyone and has no spending minimum. Cardholders earn one point for every dollar spent. Points expire after 18 months of inactivity.
- ▶ The **Gold Card** is open to anyone and has a US \$75 per year annual fee. There is no spending minimum. Cardholders earn five points for every dollar spent. Points expire after 18 months of inactivity.
- ▶ The **Diamond Card** is offer by invitation only and has a US \$100,000 spending minimum. The points never expire. Cardholders earn ten points for every dollar spent.

# Question 1

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How are the behaviors of the cardholders of the three different types of cards expected to differ?

How should your analysis be adjusted to account for these differences?

## Question 2

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Two months before the end of the current year, Elite sends Silver cardholders who have not used their card in the past 16 months a warning letter letting them know that if they don't use their card in the next two months, their points will expire.

At the same time, Elite has also decided to change the program for Gold members. Effective immediately, points will no longer expire for Gold members.

What are the different ways that the liability will be affected?

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