

# **Bruin Actuarial Society**

## **Case Competition**

### **Team 14**

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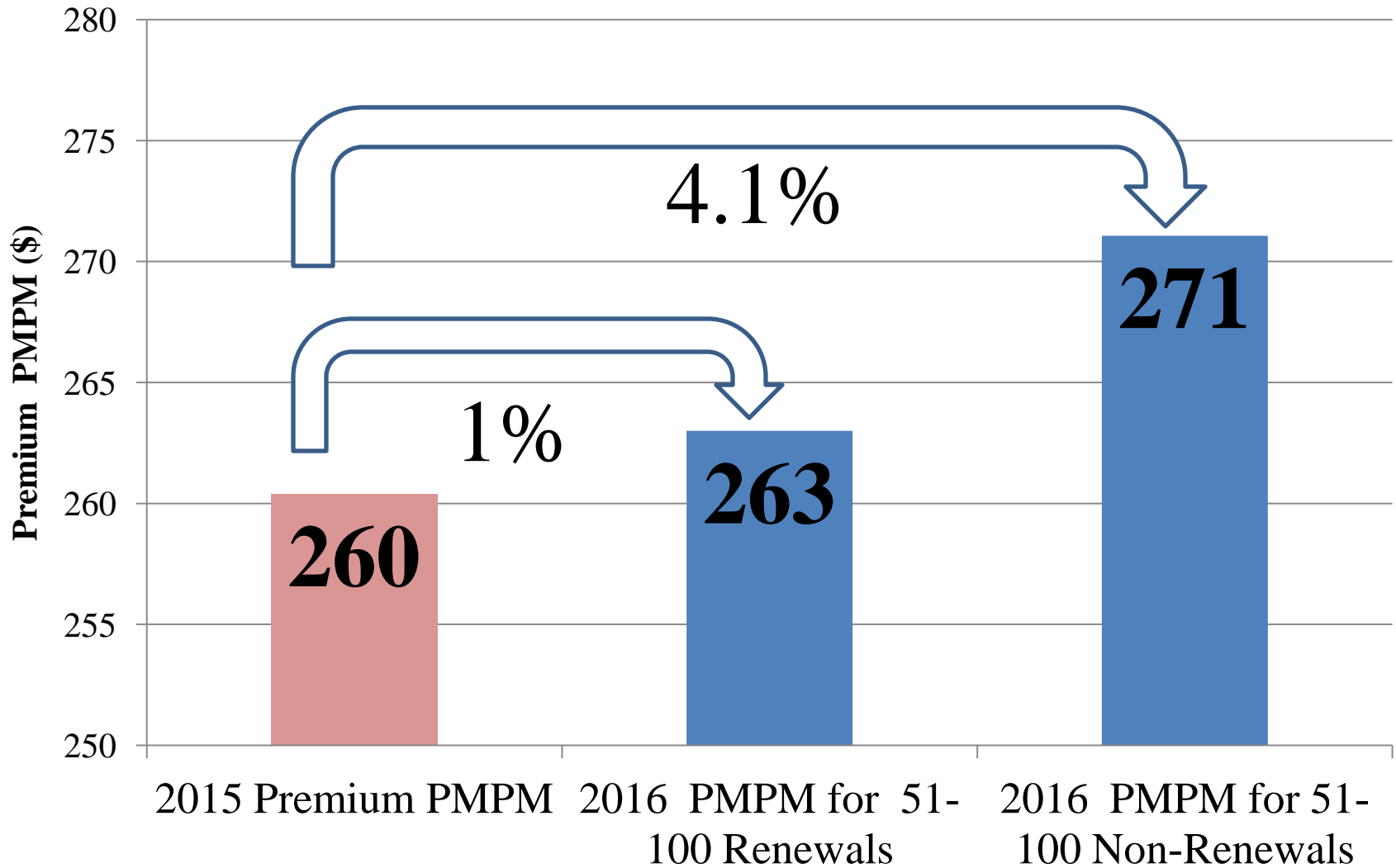
Deborah Kim

Brian Hsu

# Our Focus

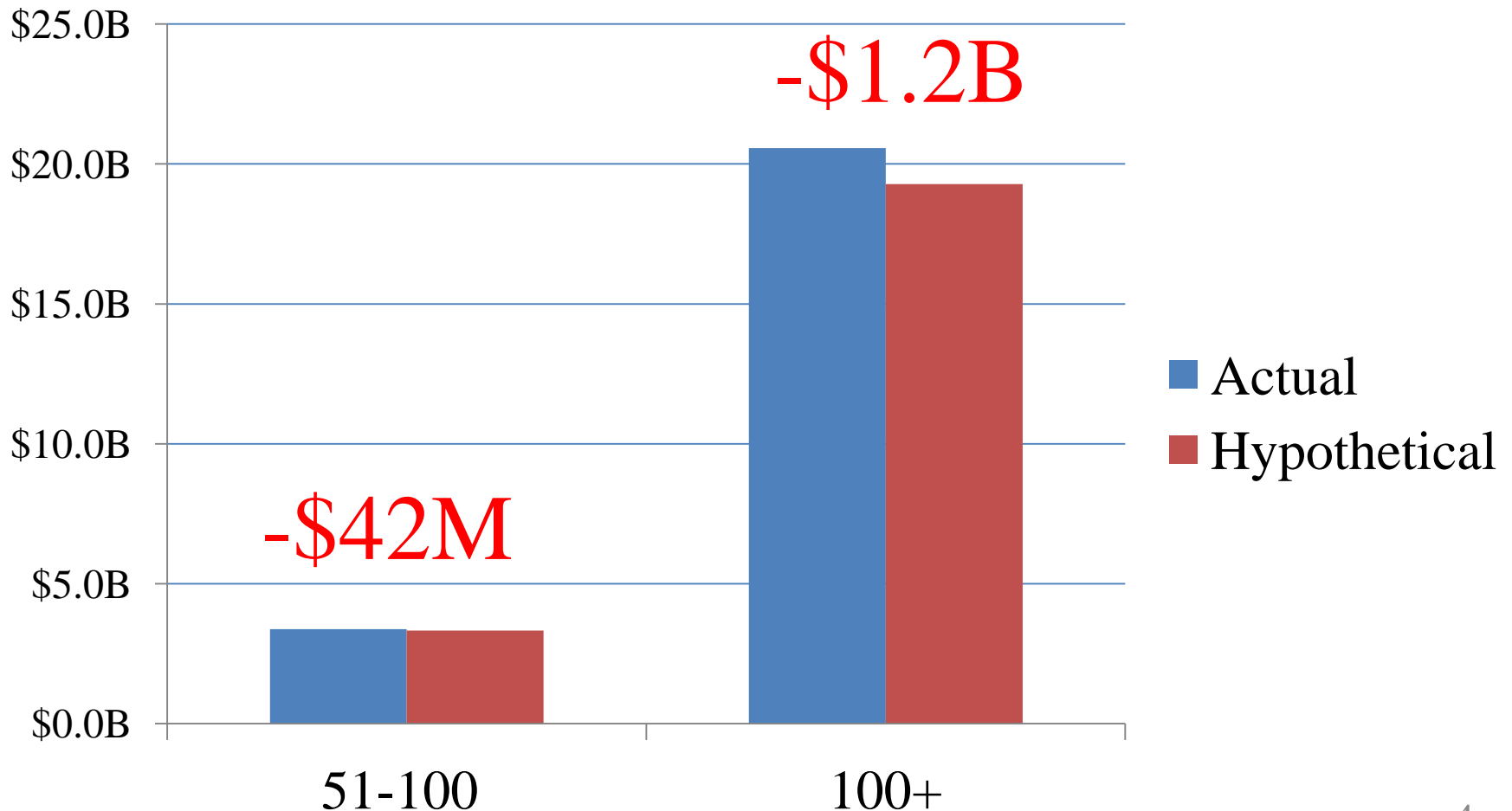
- Drive profits back to **10%** by end of 2017
- Gain experience in new markets
- Bolster membership

# “Offer Too Good to Refuse”



# Extending Offer to All Groups

## Effects on Revenue



# Financial Considerations

Under current strategy

Projected **6.59%** profit in 2016

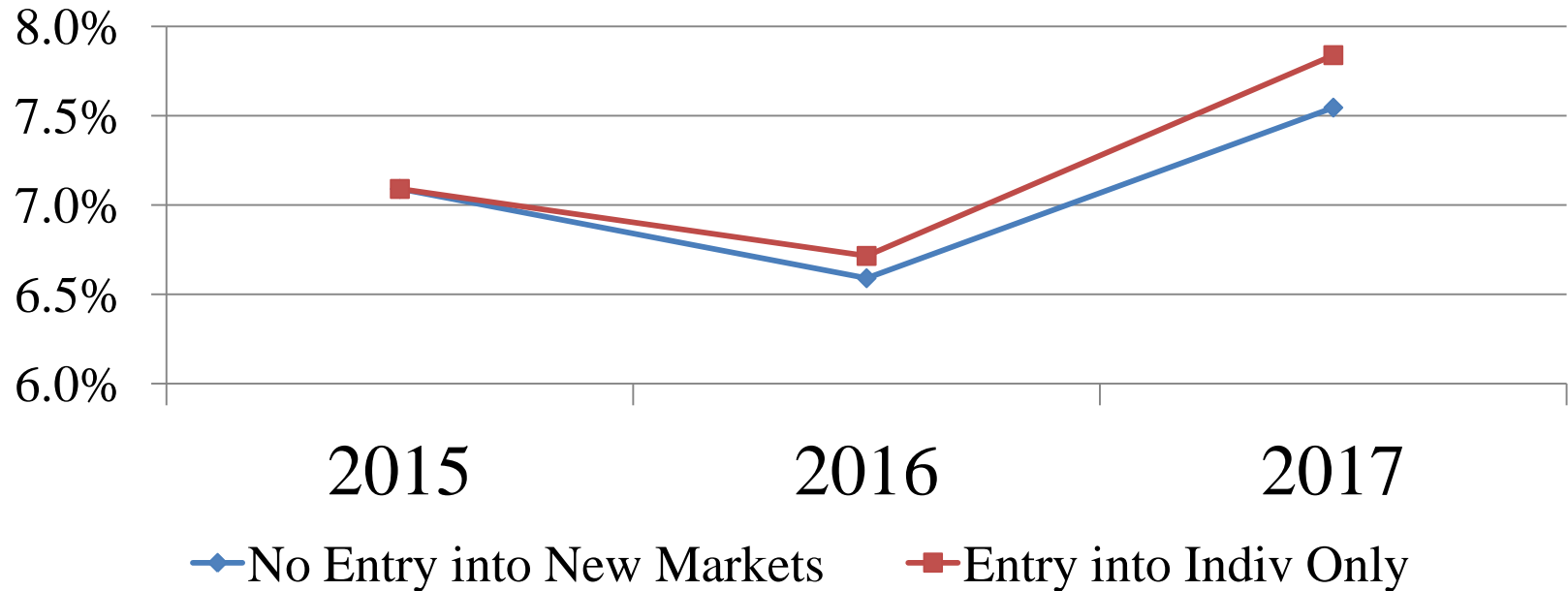
Under hypothetical strategy

**-1.27B** decrease in yearly revenue (decreased premiums, concentrated lapses)

**6.51% profit**

# Individual Insurance – Priced at Market

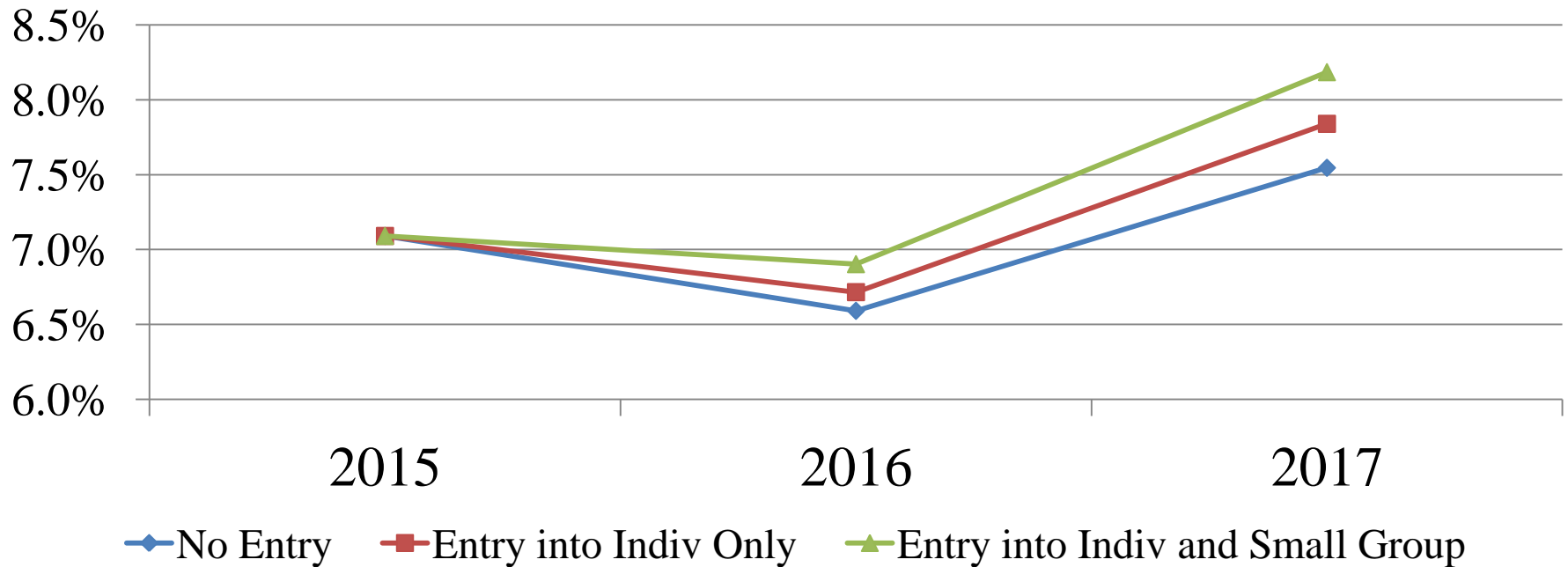
## Profit Graph



- **280,000** new Individual members by 2017
- Additional **1.37B** generated in Revenue
- Additional **1.17B** incurred in Expenses

# Small Group – Priced at Market

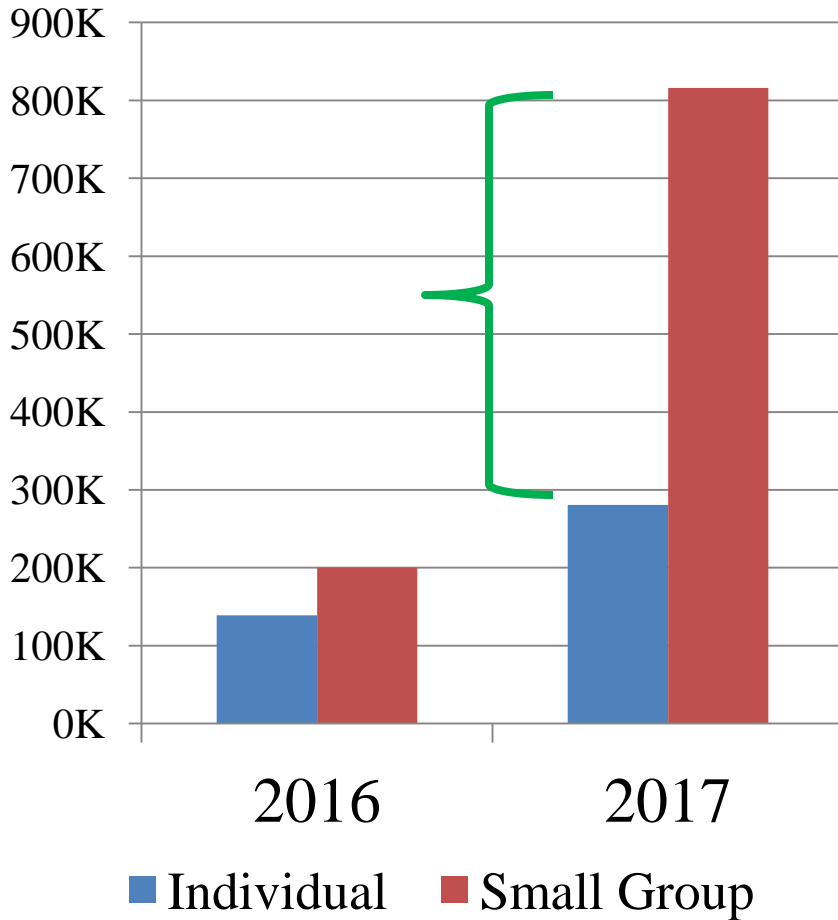
## Profit Graph



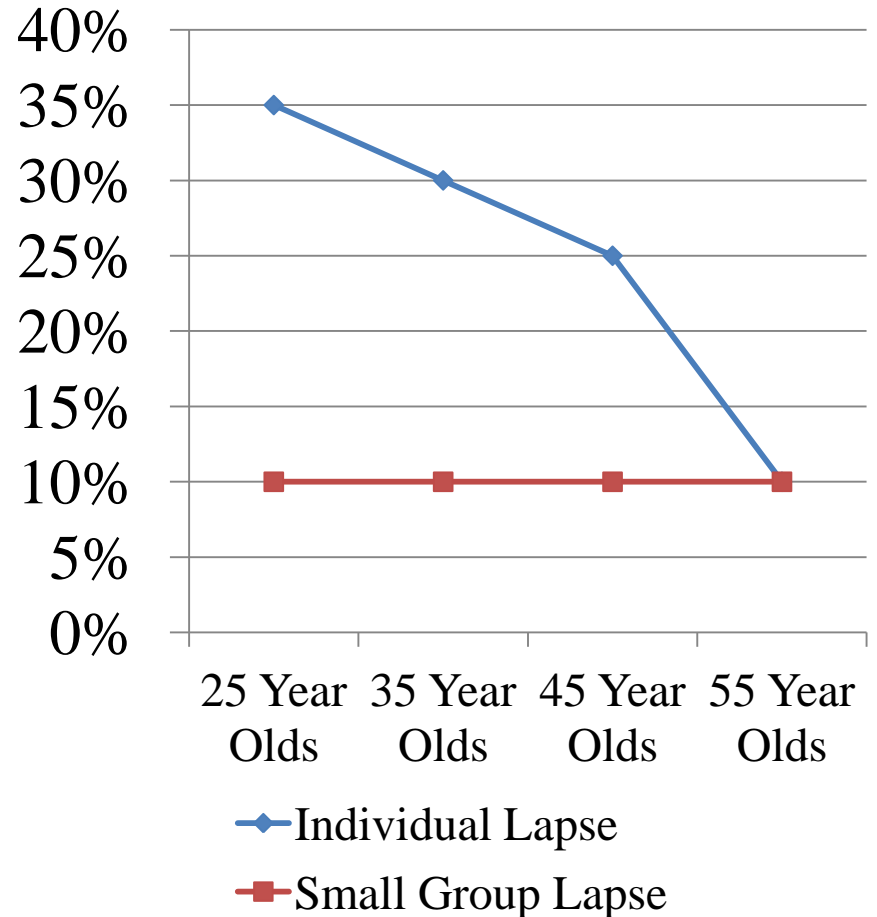
- **816,000** new Small Group members by 2017
- Additional **4.1B** generated in Revenue
- Additional **3.67B** incurred in Expenses

# Choosing Course of Action

## Membership Potential



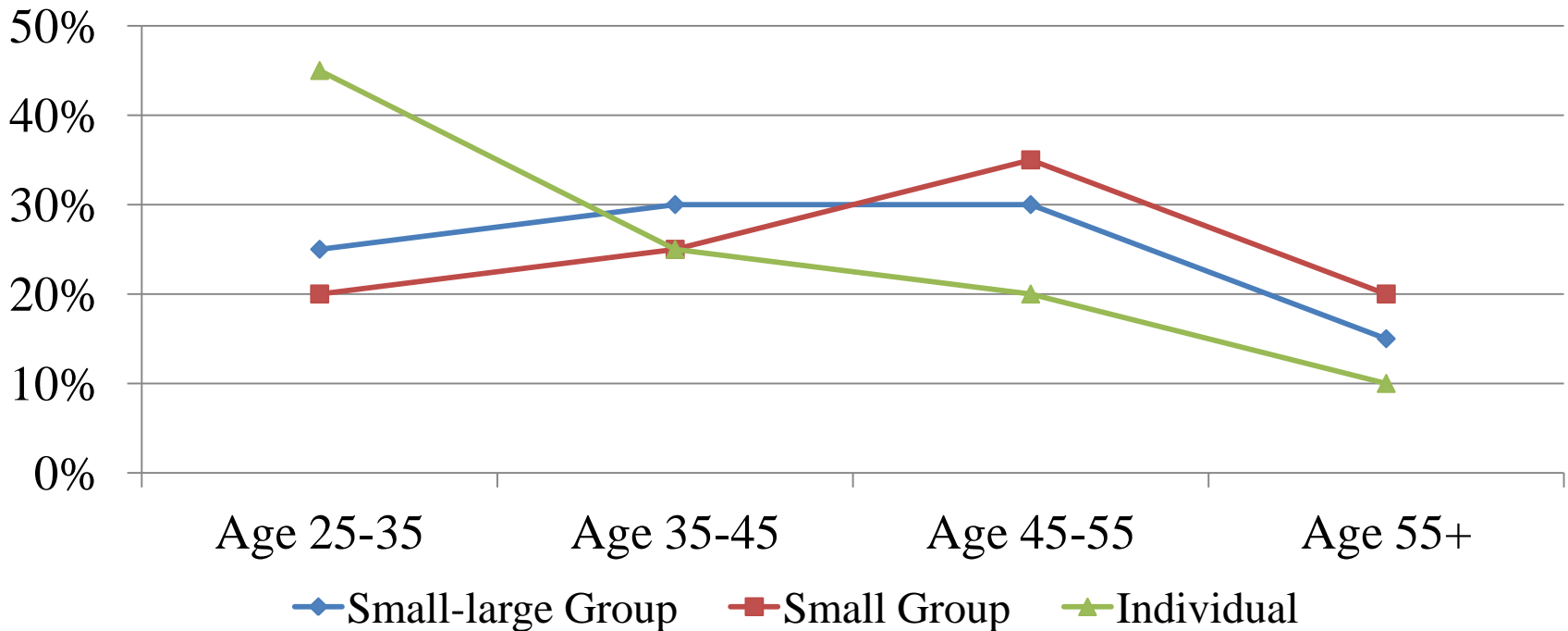
## Lapse Distribution





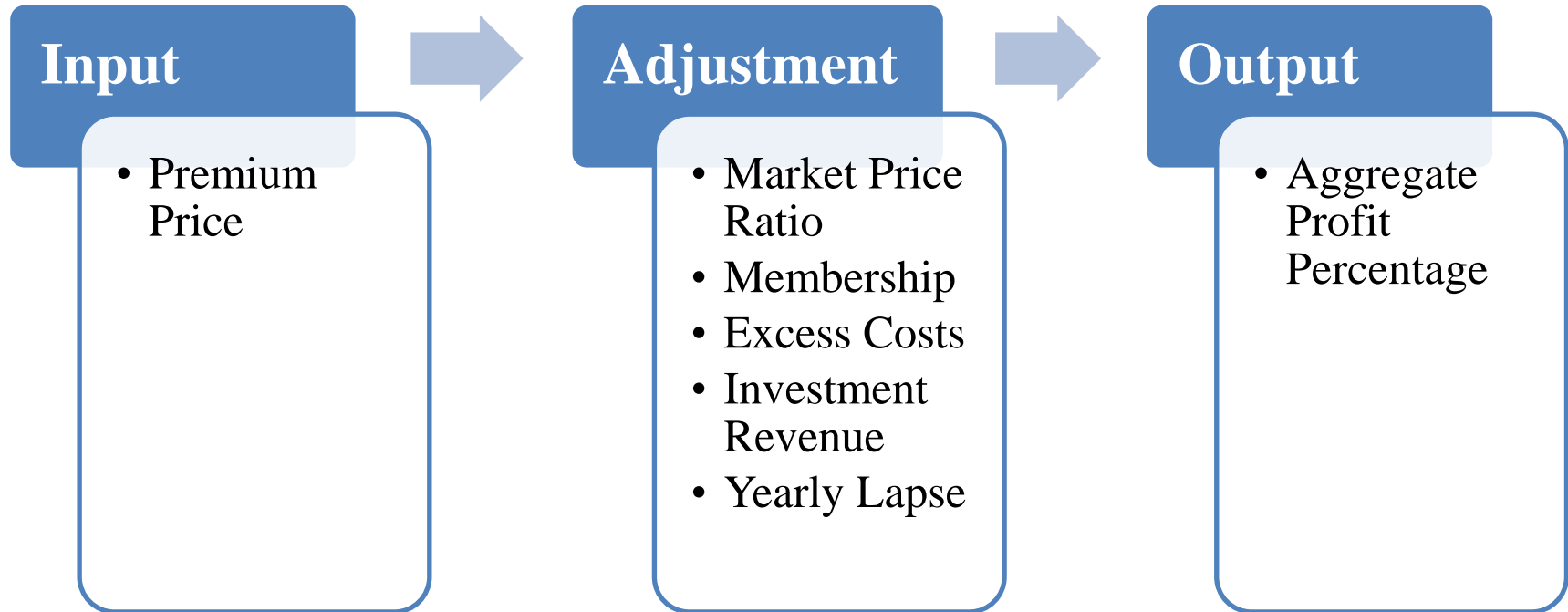
# Similar Patterns

## Comparing Age Distributions



- Greater membership potential in the small-group market
- Higher predictably as a result of uniform lapse assumptions

# Maximizing Aggregate Profit Percentage



## Constraint

$$0.9 * \text{Market price} < \text{Premium} < 1.1 * \text{Market price}$$

# Describing Revenue

$$\text{Revenue} = \underbrace{(1.0001)}_{\text{Investment Income}} \underbrace{\left(1 + \left(\frac{\text{Premium}}{\text{Market price}} - 1\right)(-1.2)\right)}_{\text{Price/Membership Sensitivity}} (\Omega)(\text{Population})(\text{Premium})$$

$\Omega$  = Projected market share with premiums set at market price

# Describing Expenses

Price/Membership Sensitivity

$$\text{Expenses} = \left[ \left( 1 + \left( \frac{\text{Premium}}{\text{Market price}} - 1 \right) (-1.2) \right) (\Omega) (\text{Population}) \right] * \\ \left( \left( 1 + \left( \frac{\text{Premium}}{\text{Market price}} - 1 \right) (.45) \right) (\text{medical expenses}) + \text{overhead} \right)$$

Price/Expense Cost Sensitivity

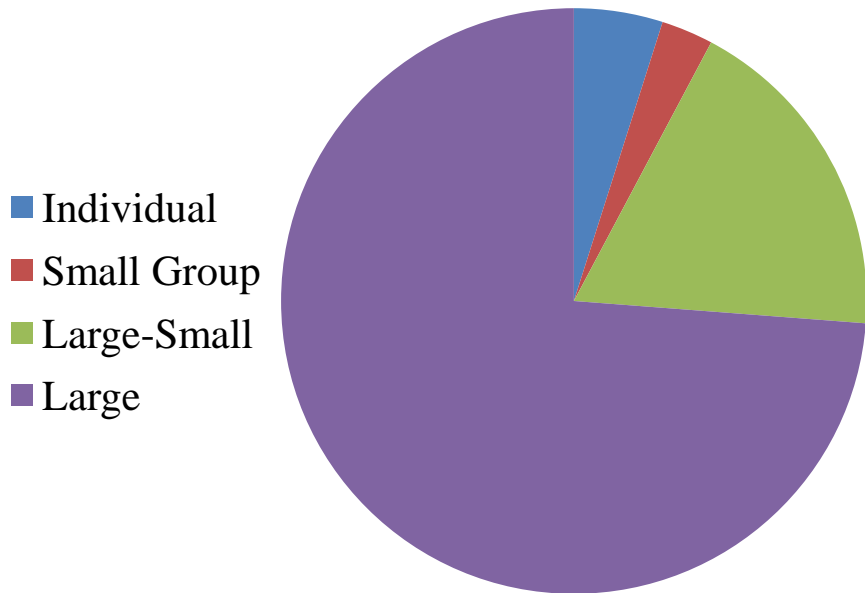
$\Omega$  = Projected market share with premiums set at market price

# Strategy

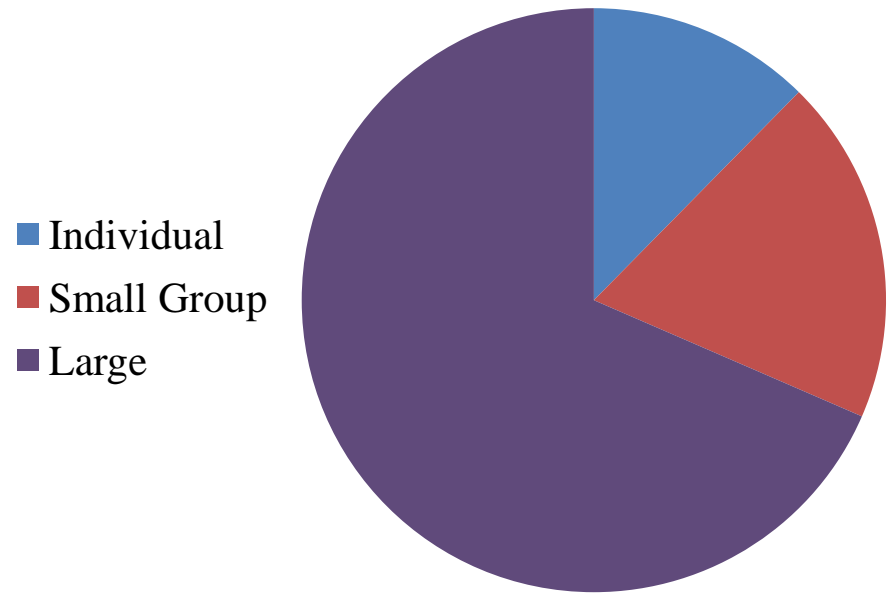
- Price premiums 10% higher than market in the small group AND individual sectors in order to avoid 3% scaling cost in 2016 and 2017.
- Member maximization strategy loses out.
- Stay conservative in large group markets until signs of potential or cause for concern emerge.
- Take advantage of legislation pressuring small-large groups to lapse into the individual and small group markets, in 2017.

# Assumptions

## 2016 Membership



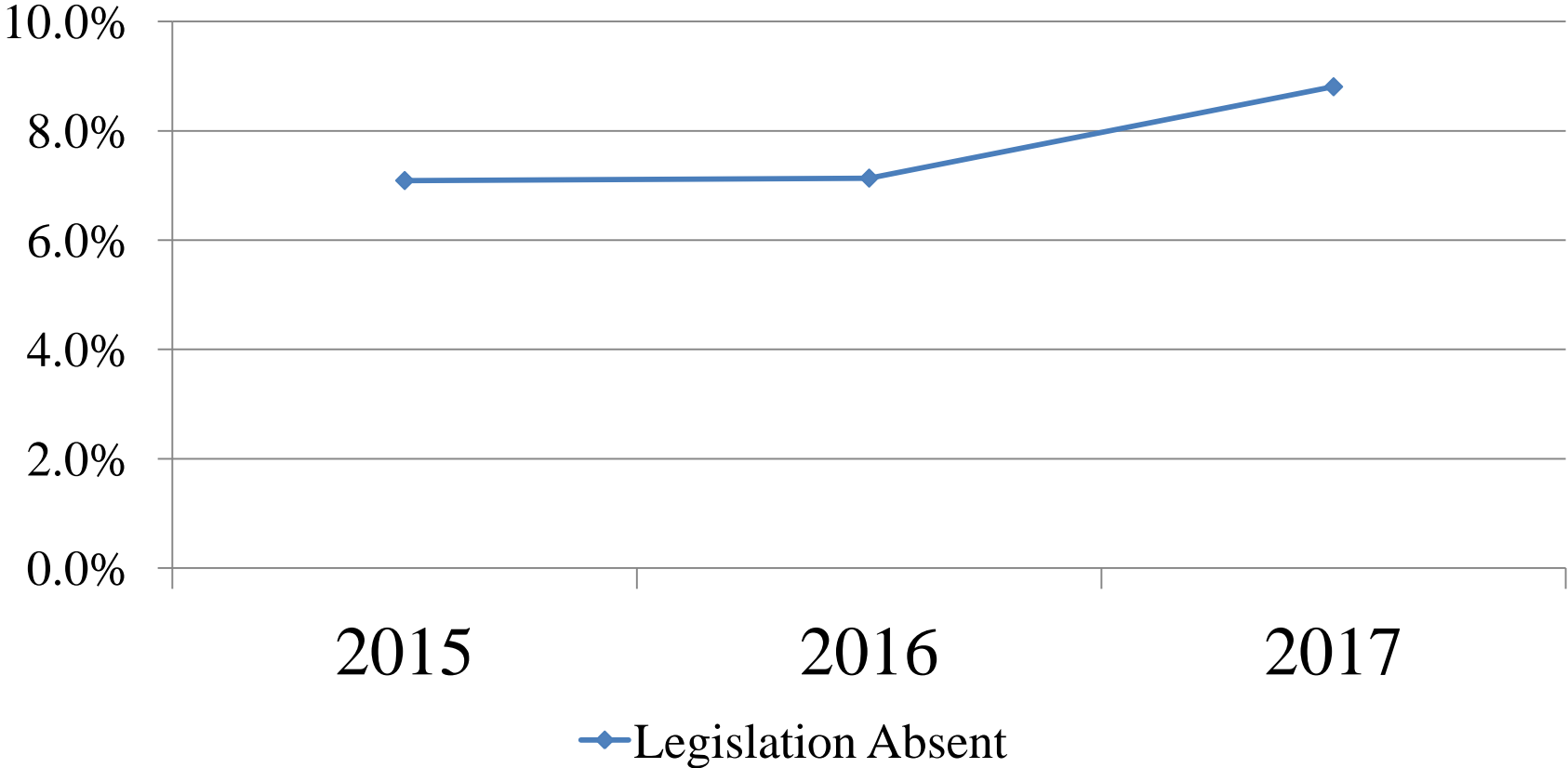
## 2017 Membership



- Assumed 95% persistency
- 1.5% scaling costs added on all lines of business

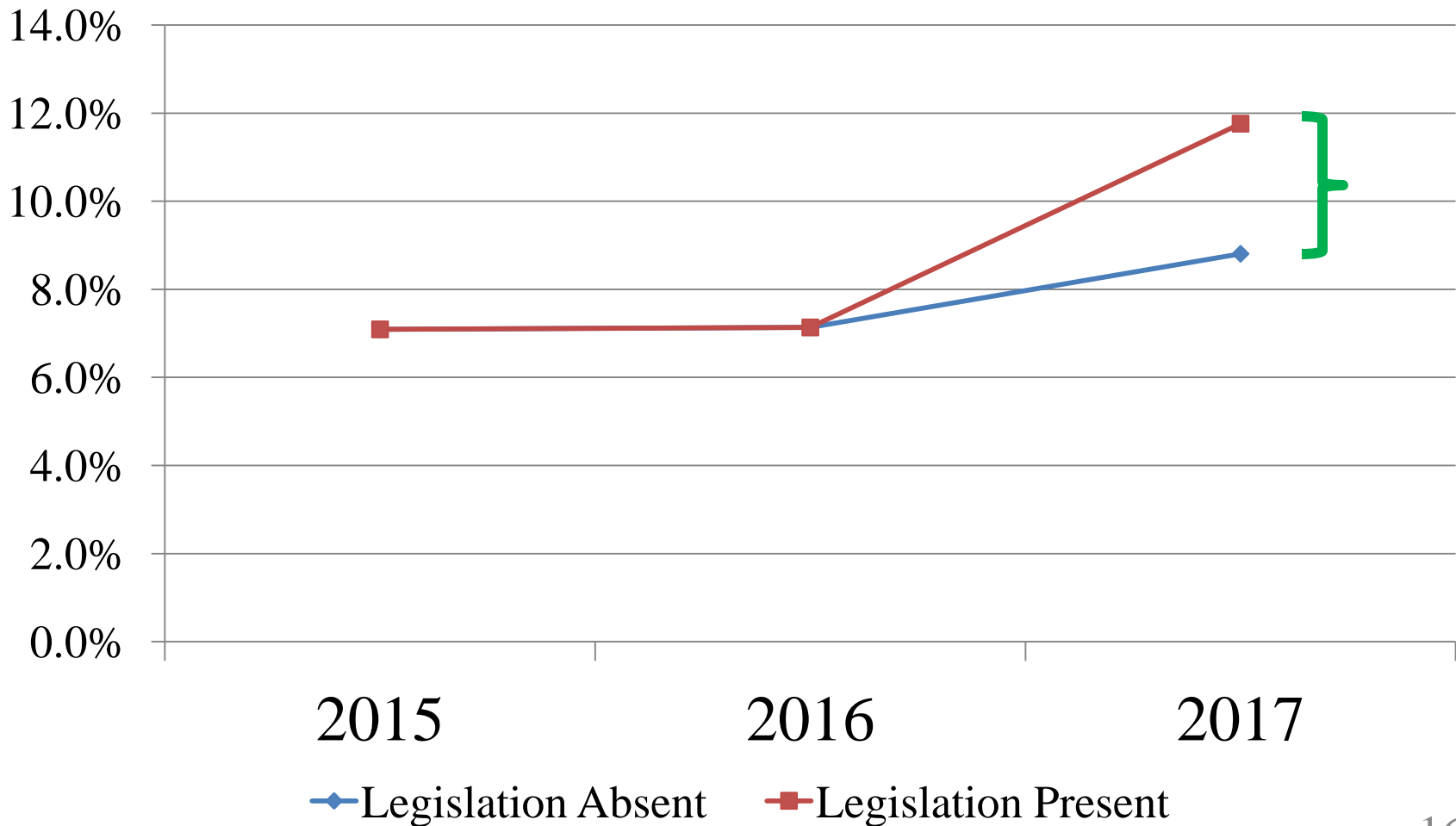
# Assuming No Legislation Interference

## Profit Graph



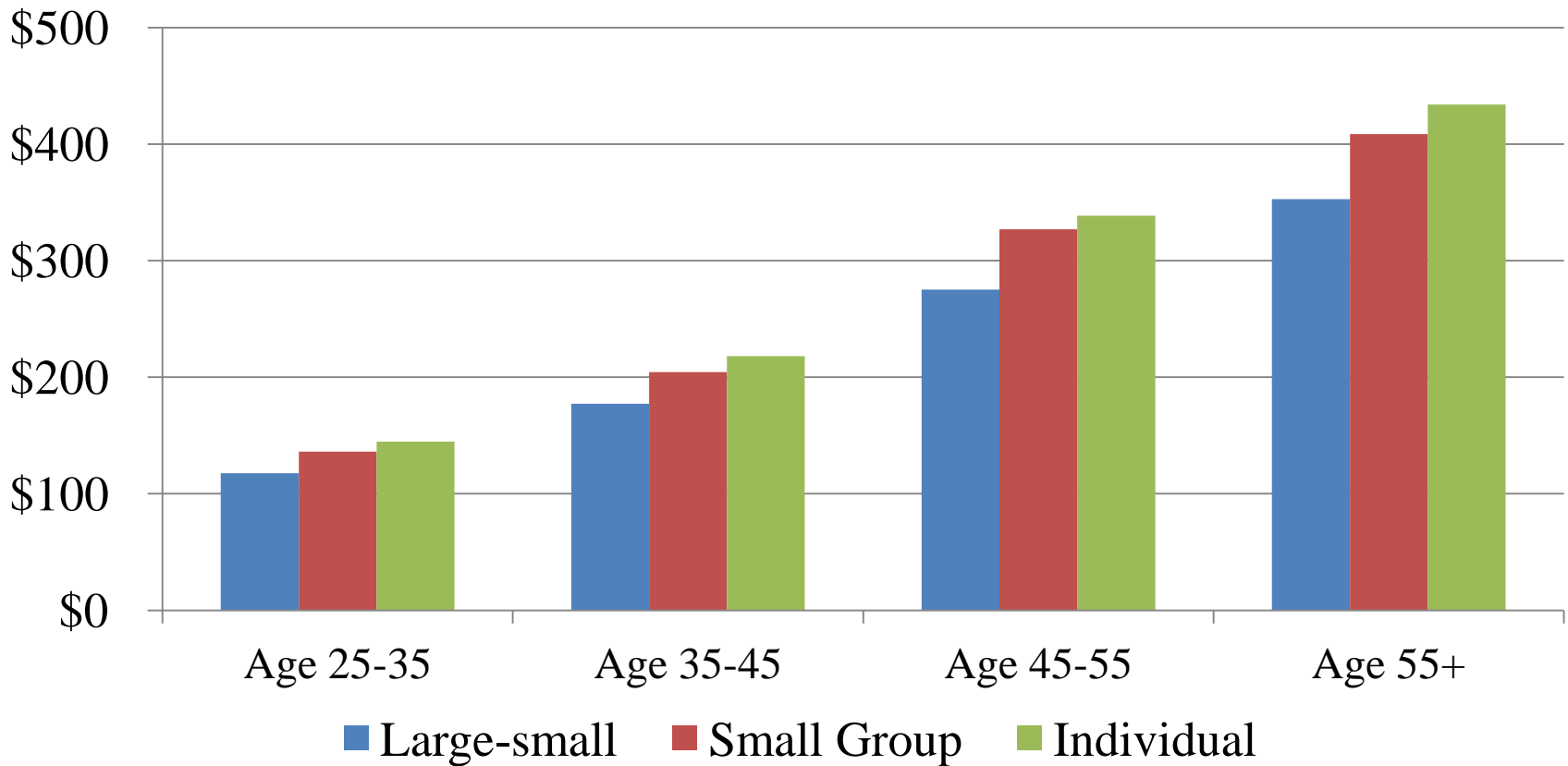
# Adjusting for Lapse Benefits

## Profit Graph





# 2017 Medical Costs PMPM by Age



## Medical Loss Ratios:

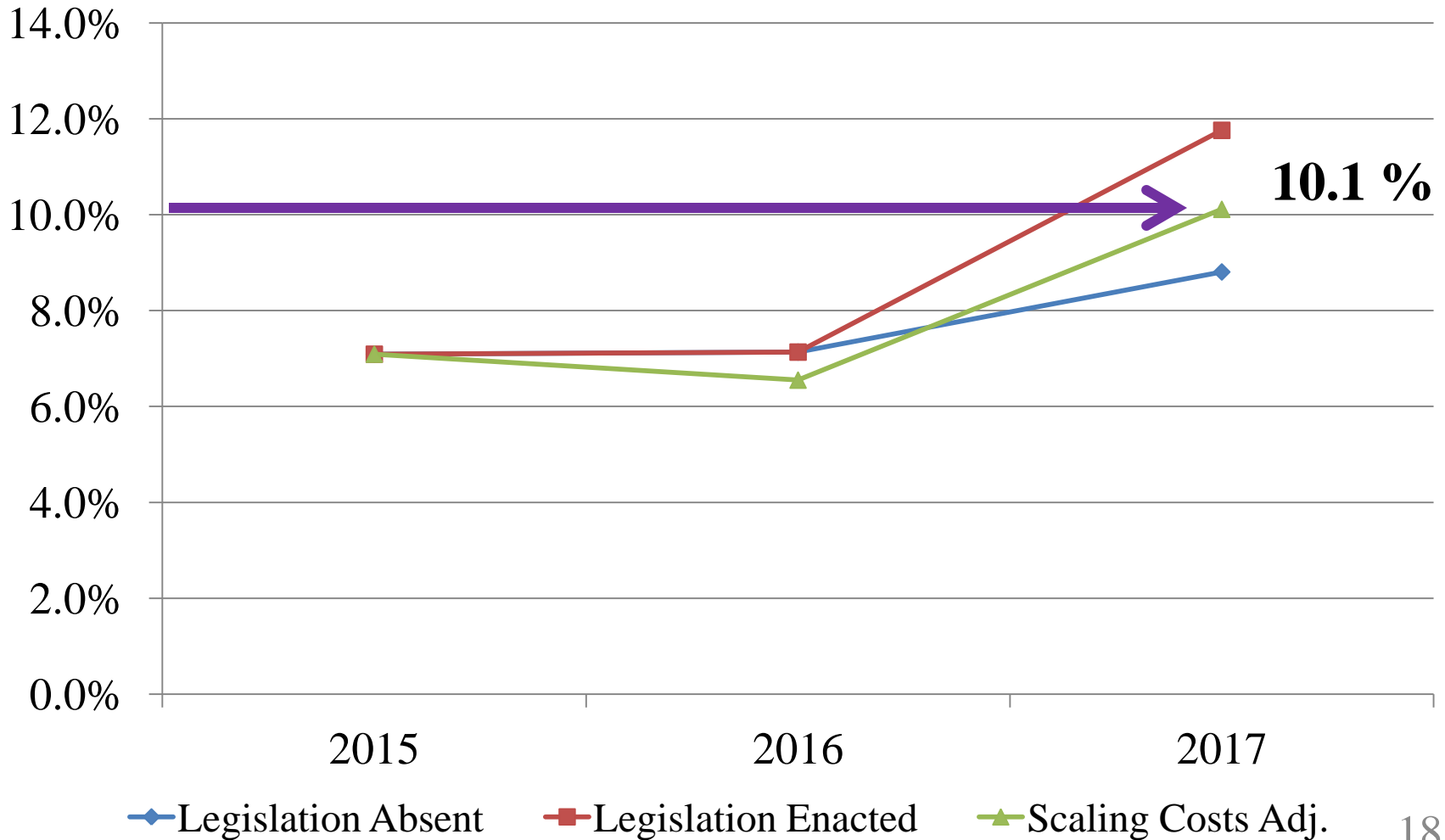
Small Group: Decrease from 71% to 68%

Individual: Decrease from 74% to 72%

**Premium to Medical Cost Ratio Increases**

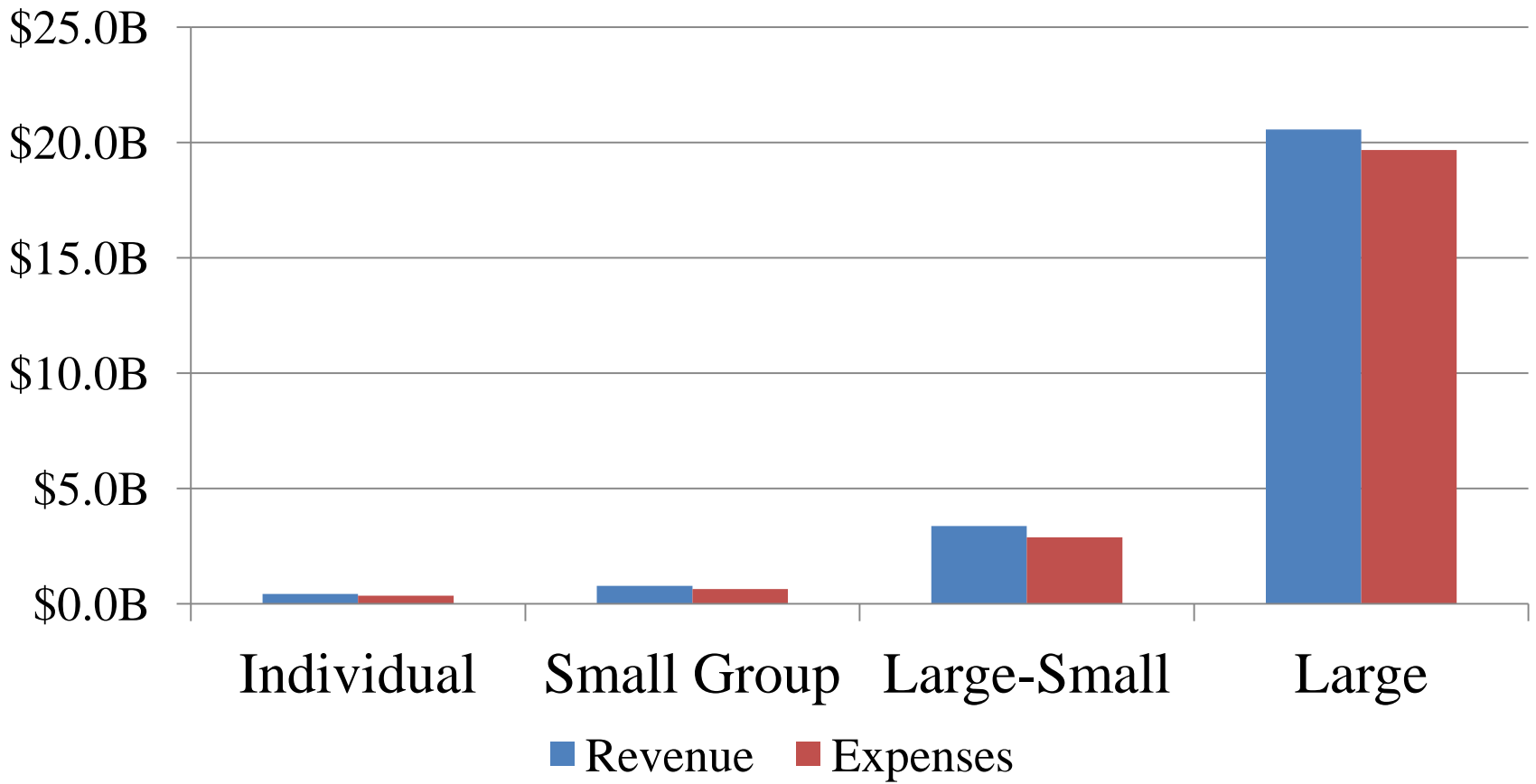
# Considering Scaling Costs

## Profit Graph

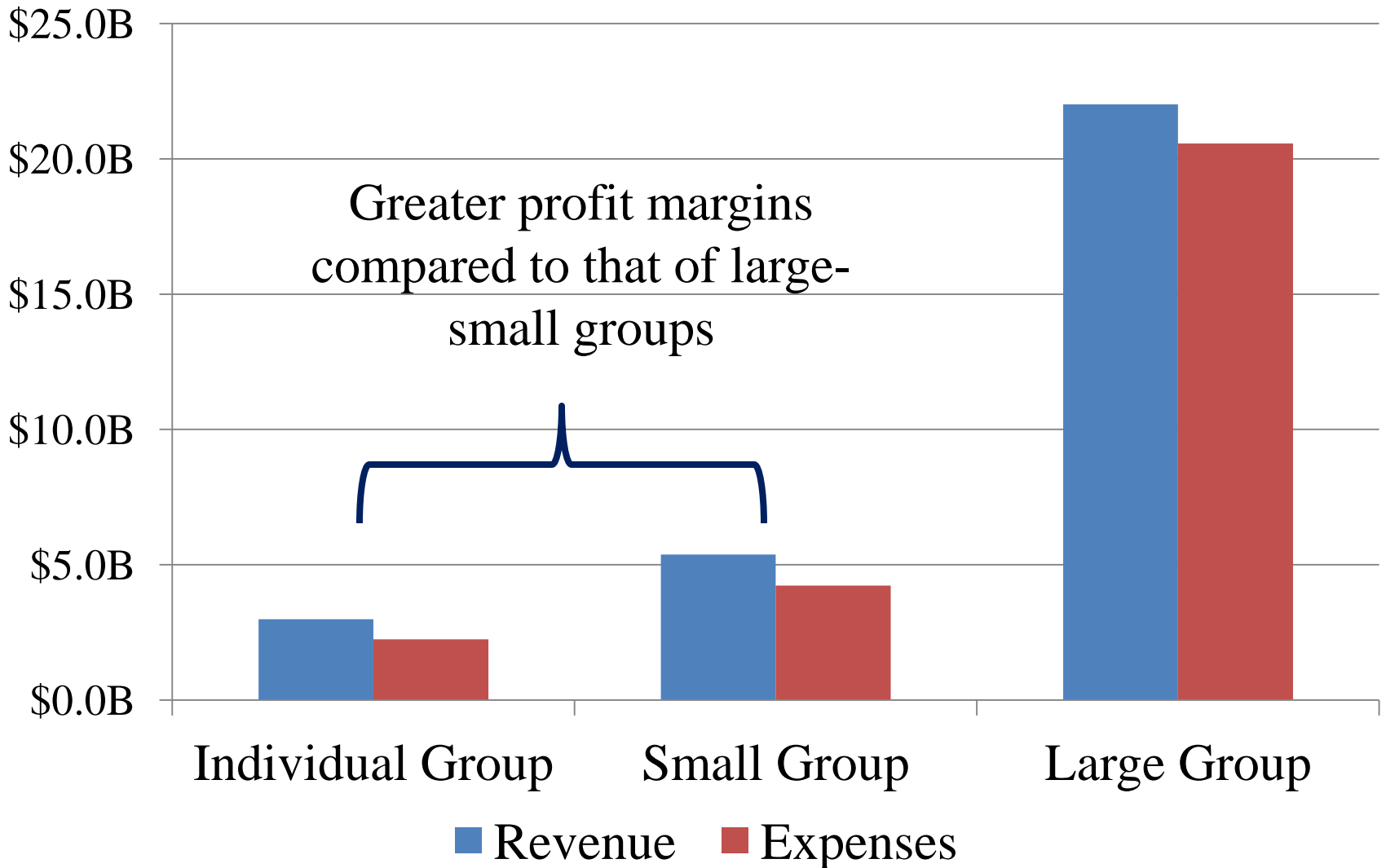


# Effects by Line of Business

## 2016 Financial Outlook



# 2017 Financial Outlook



# Recap of Goals

- Gain experience in new markets
  - ✓ Entry into **Individual** and **Small Group** Insurance
- Drive profits back to 10% by end of 2017
  - ✓ Projected **10.1%** profit return by end of year 2017
- Bolster membership
  - ✓ 750K members in Individual Market by 2017
  - ✓ 1.2M members in Small Group by 2017
  - ✓ Total enrollment at **6.3M** by 2017

**THANK YOU!**