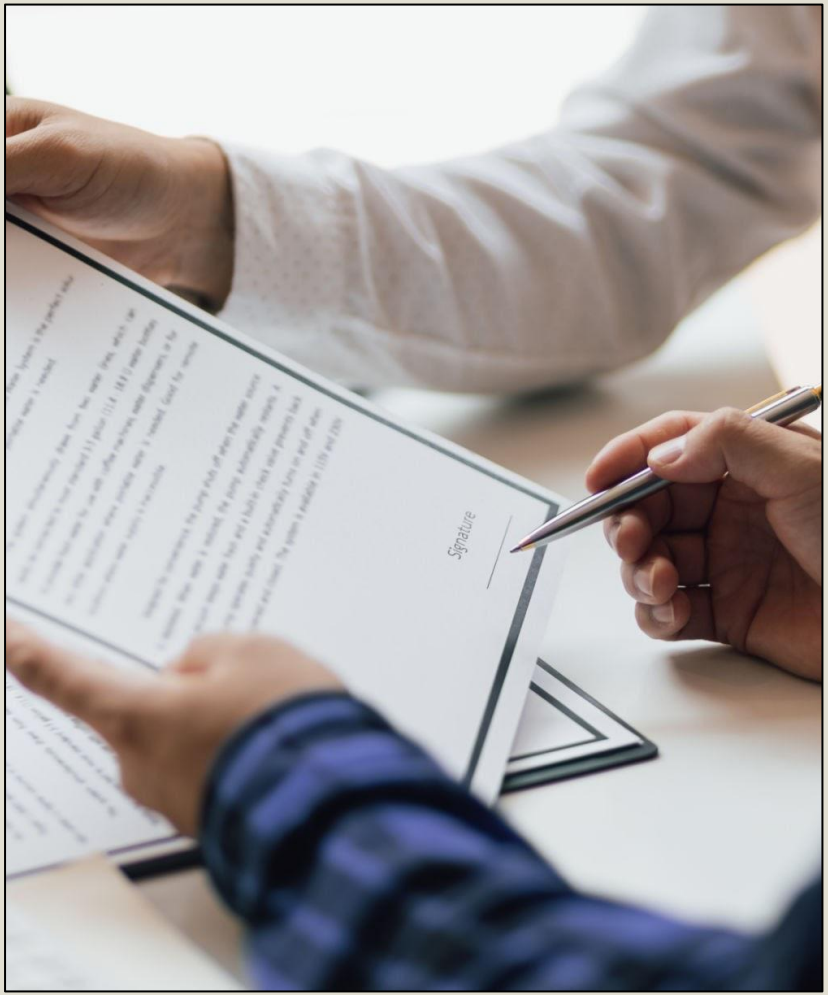
Pickles Mutual: A New Approach

A REVISED DISCOUNT STRUCTURE



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01

Introduction to Analysis

Introduction

Alpha Actuarial has analyzed the homeowners' insurance portfolio of Pickles Mutual and derived a refined discount structure that allows Pickles to retain a competitive market share and increase profitability. The rest of this presentation will present this analysis.

Introduction to Analysis

We developed a refined discount structure to align Pickles Mutual's pricing with customer risk, internal data insights, and market expectations, while ensuring long-term profitability.

Using historical data on exposure, premiums, and losses, we analyzed risk patterns across household features like water sensors, alarms, and roof types. Where internal data lacked credibility—we applied industry standards

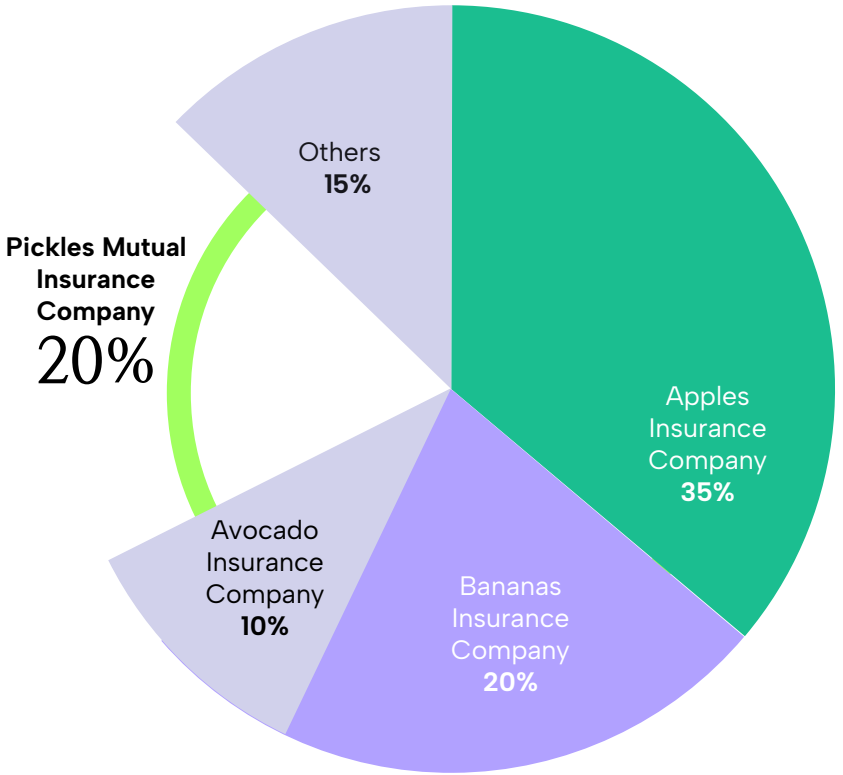
Our model incorporates historical loss experience, a blended relativity approach (70% loss ratio, 30% severity), and competitor discount benchmarks. To ensure financial viability, we assumed similar future loss trends, included the company's expense ratio, and projected a 5% profit margin by adjusting the base premium before applying discounts.

02

Methodology + Assumptions

Methodology + Assumptions

As things currently stand, Pickles Mutual possesses a 20% market share. The main competitors are Apples Insurance, Bananas Insurance, and Avocado Insurance. Ensuring that Pickles' market share in the face of this competition was maintained was a crucial consideration in our analysis of Pickles' portfolio and our creation of the new discount structure.



Methodology + Assumptions

The Approach

📊 Data → 🔧 Loadings → 💡 Clean Premiums

We started by analyzing six core perils — **fire, water, wind/hail, theft, liability, and other property damage** — to calculate base premium rates. Using historical data, we determined the **pure premium** for each peril as::

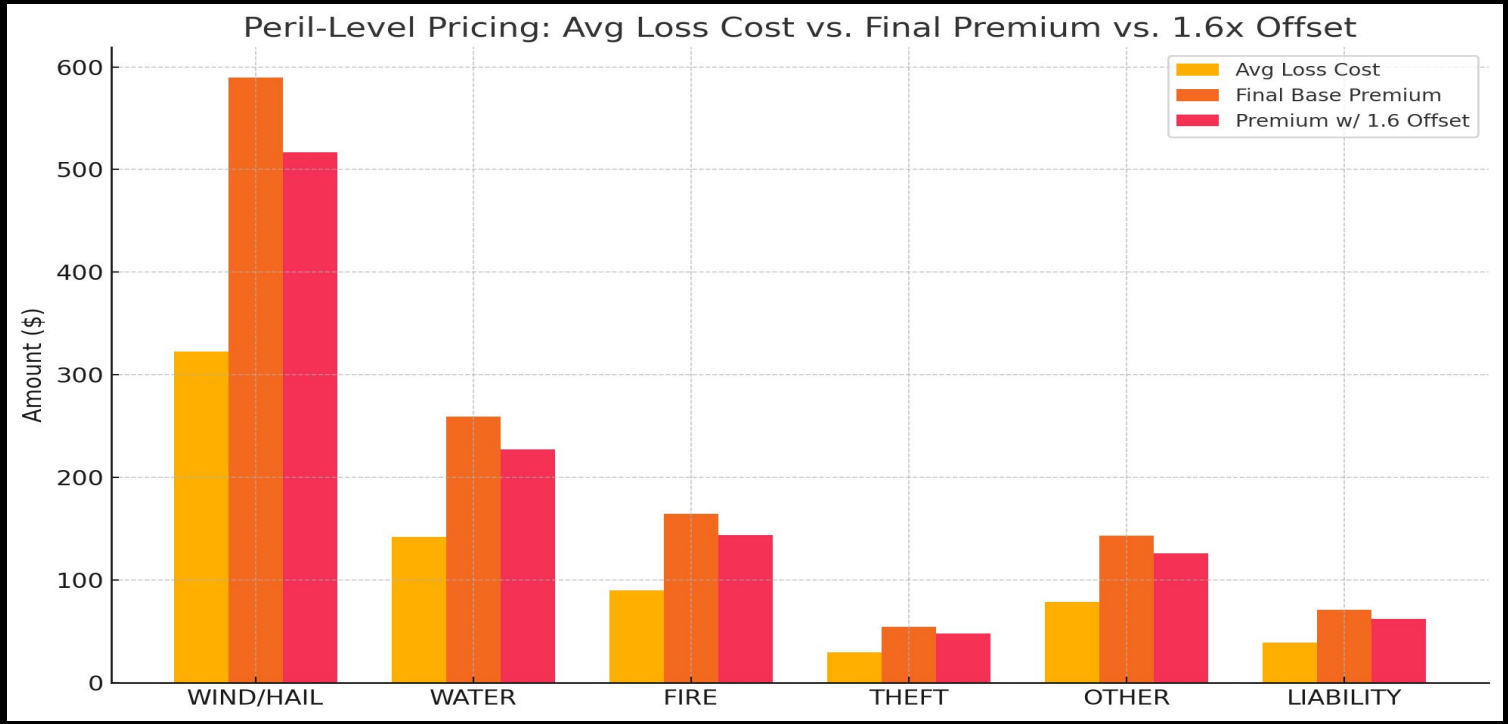
$$(\text{Loss Cost})_{\text{peril}} = (\text{Losses} + \text{ALAE}) / \text{Exposure (Policy-Years)}$$

To make these loss-based rates financially viable, we applied a **40.3% expense loading** and a **5% target profit margin**, ensuring the structure would cover operational costs while supporting sustainable growth as well as generating profit.

Unlike traditional approaches, we **intentionally avoided applying a secondary offset** based on past premiums to avoid steep price hike. Instead, we kept our model clean and cost-driven — grounded in real risk, not legacy pricing.

Methodology + Assumptions

This chart illustrates how we translated peril-specific loss costs into base premiums. We applied a 40.3% expense load and a 5% profit margin to each peril's average loss cost. For reference, we also show premiums inflated by a 1.6x offset — the ratio of total premiums to total losses. These values are not final; peril-level relativities were applied in the next step to further refine the pricing.



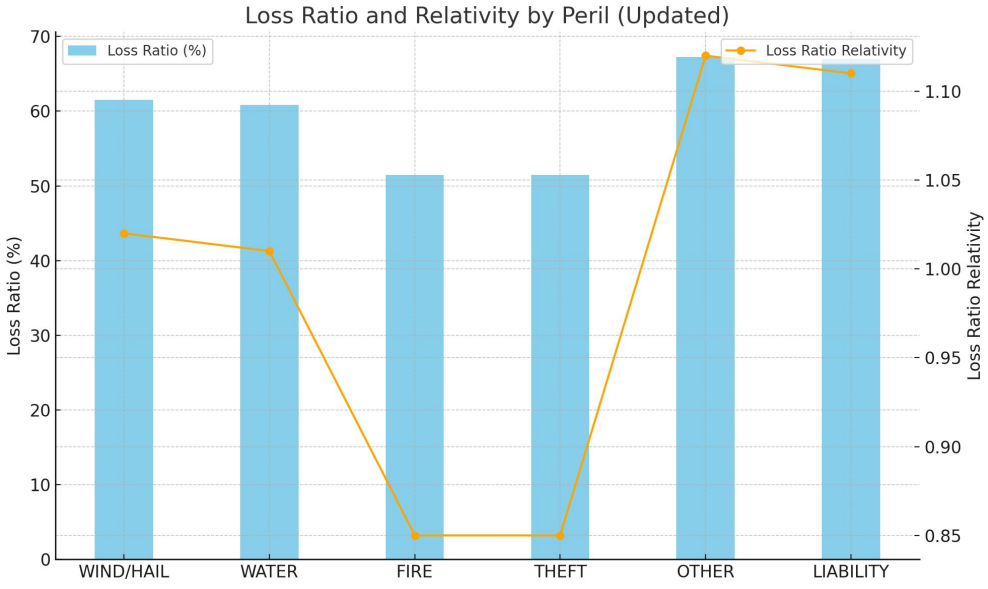
03

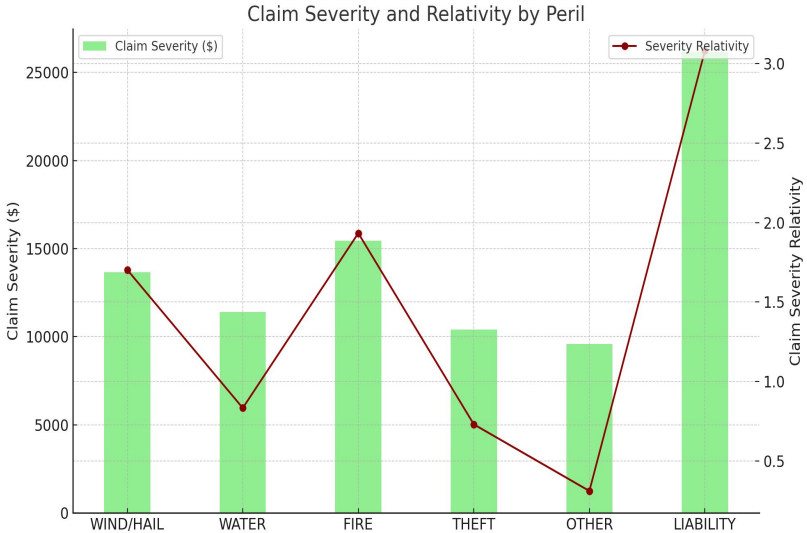
Relativity Development

To improve rating accuracy, we calculated two key relativity metrics for each peril:

- Loss ratio relativity, based on:
  (Losses + LAE) / Earned Premium
- Claim severity relativity, based on:
  (Losses + LAE) / Claim Count

Loss ratio reflects overall profitability of a peril, while claim severity captures the average cost per claim. Together, they offer a balanced view of both frequency and severity.





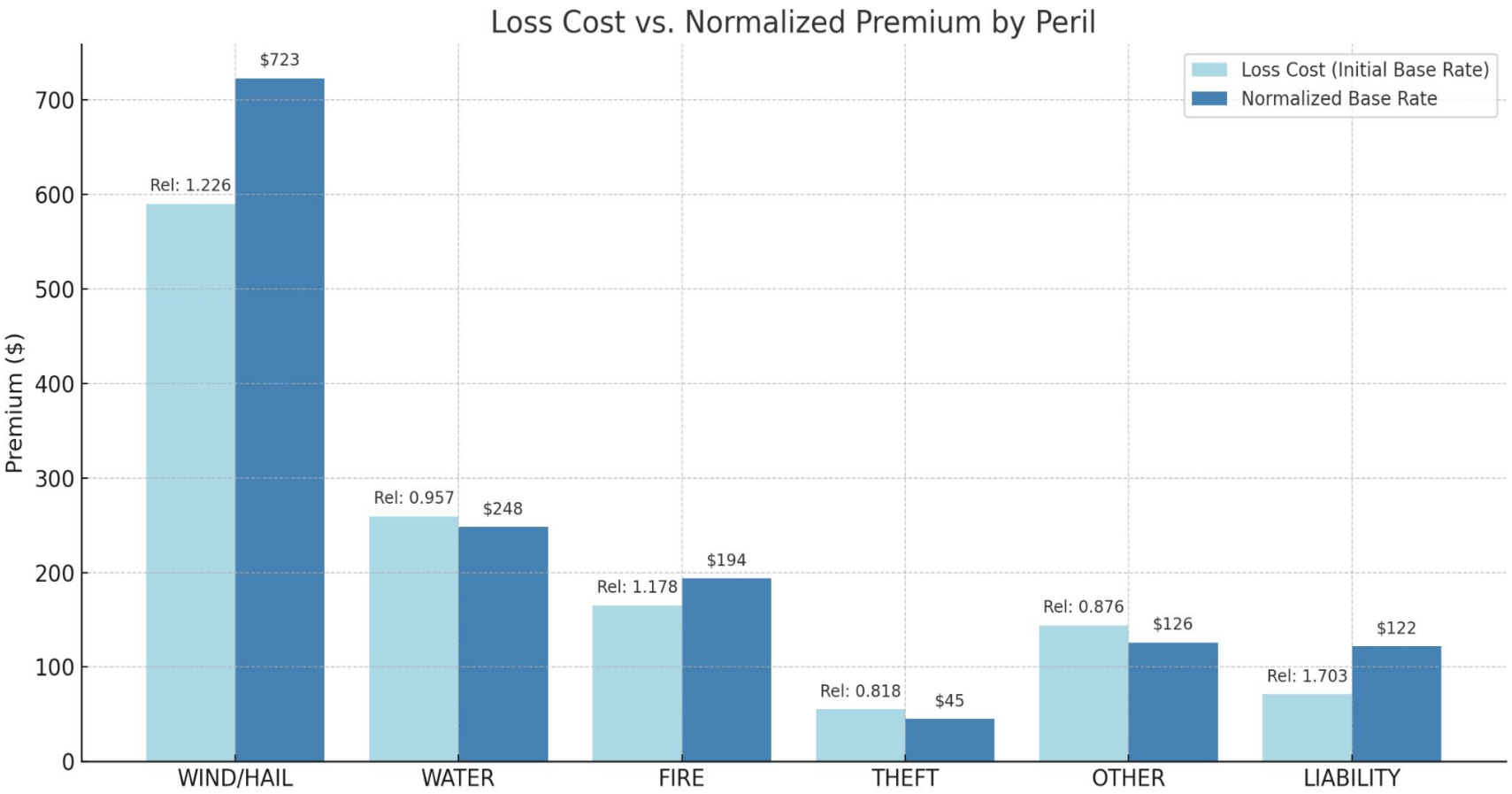
Claim severity relativities were scaled relative to the overall average.
For **liability**, which had only 122 claims (far below the full credibility threshold of 1,082), we applied classical credibility weighting: **Z = 11/1082 = 0.11 approx**

We blended the observed severity with the **industry standard of $26,175** (Bankrate, 2022) to produce a stabilized relativity.

To finalize peril relativities, we applied a **weighted average**:

- **70%** weight on loss ratio relativity
- **30%** weight on claim severity relativity

This blend balances cost control and severity risk while staying aligned with industry norms.



Relativity Development

Feature Based Modeling

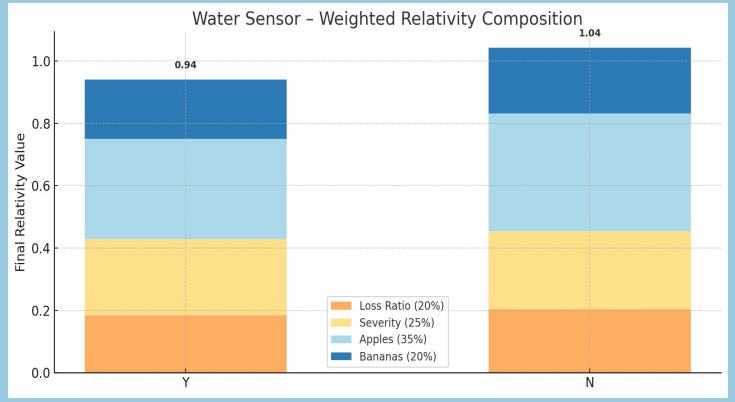
Feature Based Modeling

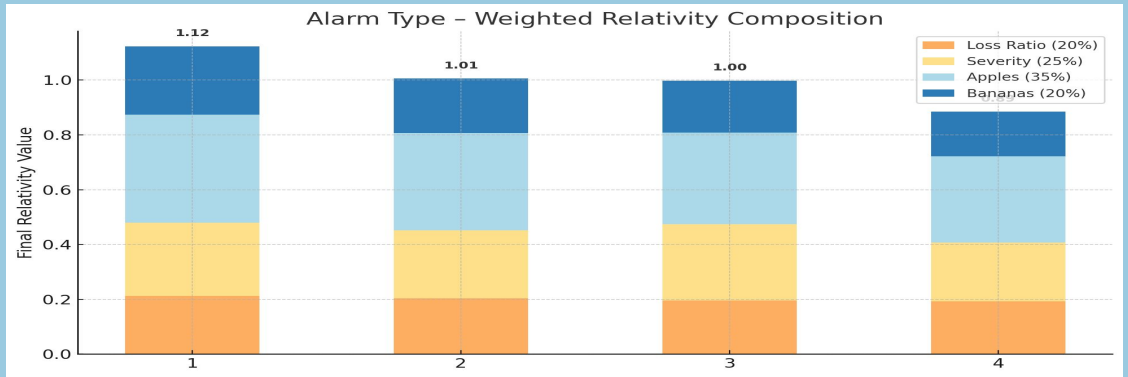
We developed discount factors for key household features — **water sensor type**, **alarm system**, and **roof type** — using a blended model.

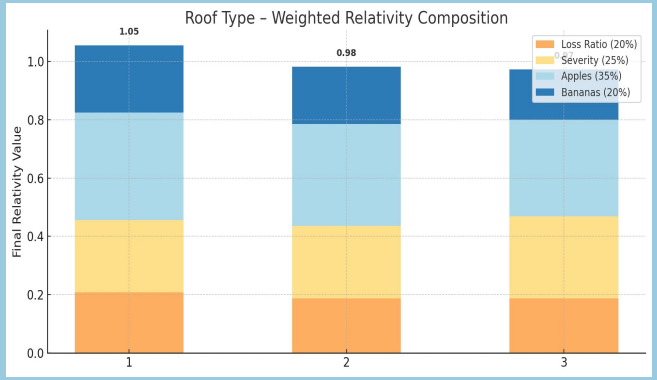
To reflect market expectations and internal risk experience, final discount factors were derived using:

- **20% weight** on loss ratio relativity
- **25% weight** on claim severity relativity
- **35% Apples Insurance discount factor**
- **20% Bananas Insurance discount factor**

The output was then **normalized and offset** along with base premium, so base feature types retain a factor of 1.00 and all others reflect relative risk and market competitiveness.







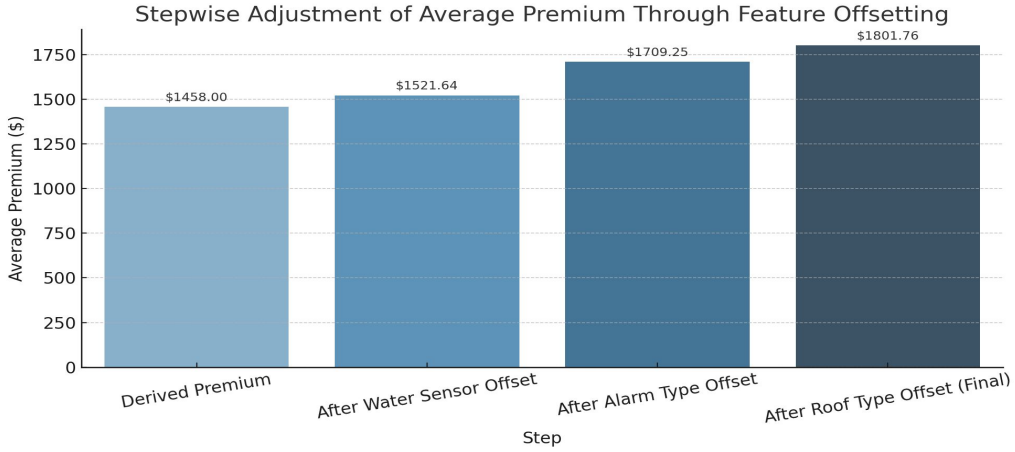
Building Relativity

We considered 3 sources

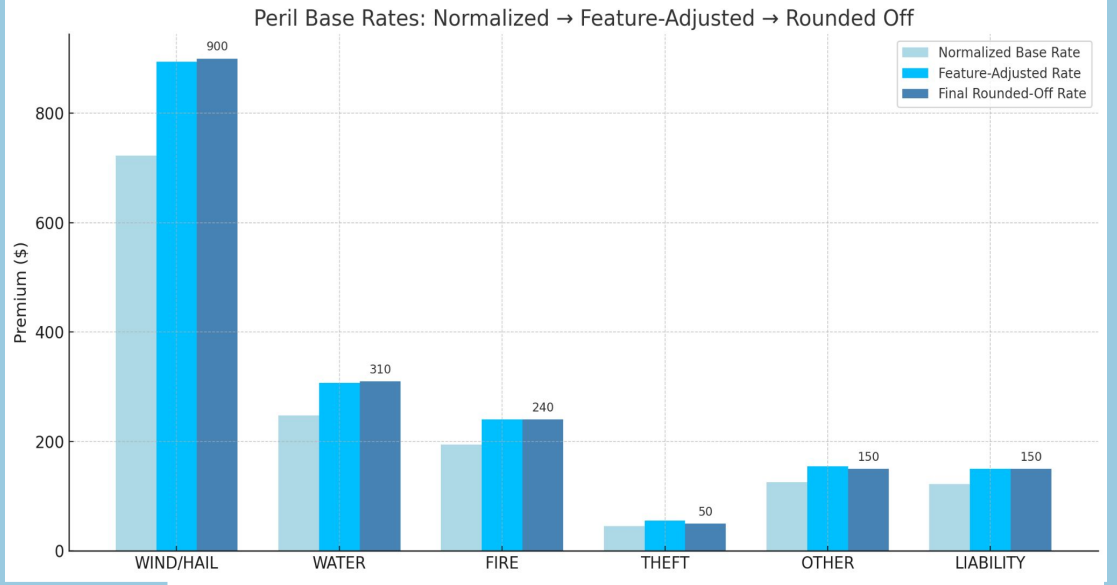
- Pickles' profitability (loss ratio relativity): 20%
- Claim severity relativities: 25%
- Competitor discount benchmarks:
  - Apples (35% market share): 35%
  - Bananas (20% market share): 20%

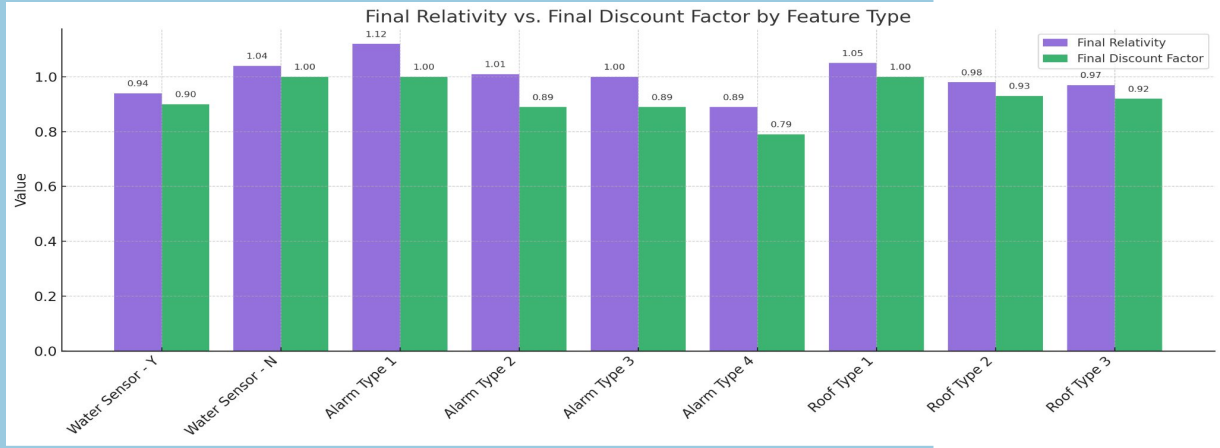
To ensure neutrality in premium collected over all tiers, **competitor discount factors were first normalized** to an average of 1.00 — preventing market influence from skewing overall premium levels.
After calculating our internal weighted relativities, we then **normalized our final relativity set** as well as **the base premium** so that the base tier (least risky or most common) had a **discount factor of 1.00**, and all others scaled appropriately from there.

This step adjusted not only **individual feature discounts**, but also provided us **actuarially accurate base premium cost (most basic tier)** of approximately **$1,801.76**, reflecting feature risk while keeping peril-level pricing intact.



1. Final peril rates were **rounded for communication clarity** and to align with expected average premium levels.
2. Feature-based discount **relativities were normalized**, ensuring consistency and fairness across all customer types.
3. The **base premium applies to the "base case" policyholder** — someone with no alarm system, no water sensor, and a standard roof.





Feature Based Modeling

05

Business Considerations

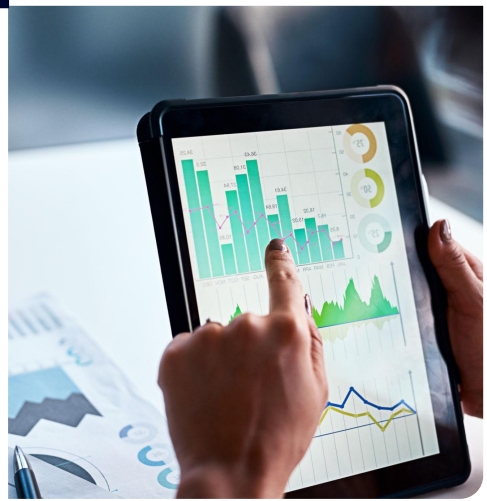
If Pickles were to retain their current rating structure without adopting these refined discounts, they risk falling behind competitors who are aggressively pricing for features that mitigate risk.

- Maintaining current rates **ignores expense load (40.3%)**, threatening profitability
- Fails to price perils like **Liability & Wind/Hail** adequately
- Risks **adverse selection** as market leaders undercut on safety-featured homes
- New model yields **risk-aligned, expense-loaded, and market-ready pricing**

Should Pickles' leadership aim to increase total premium income, the base peril rates could be up-rated proportionally post-discount normalization, ensuring strategic growth without violating actuarial fairness. The in-use pricing model could also be re-structured to incorporate commission or variable costs into premium charges as well.

06

Conclusion + References



Conclusion + References

The implementation of this refined discount structure will emphasize the installation of better safety technology in homes, align Pickles in a more competitive stature towards the market, and preserve profitability while avoiding the negative effects of adverse selection and decreased market share.

Conclusion + References

Our discount structure is actuarially rigorous, market-aware, and strategically calibrated. It reflects both internal performance metrics and external competitive pressures. By combining loss ratio and claim severity analytics with credibility adjustments and market benchmarking, we believe this model offers Pickles Mutual a robust foundation for pricing that supports profitability, competitiveness, and customer fairness.

We are happy to further discuss implementation, testing scenarios, or refinements to accommodate business strategy.

Homeowners' insurance industry standards

Insurance Statistics and Facts