BUSINESS ANALYSIS REPORT ON EPI AND MINIMUM PREMIUM VARIANCES

1. Introduction

This report presents the findings of a reconciliation analysis conducted on two key datasets: **Estimated Premium Income (EPI)** and **Minimum Premium (MINPREM)**. The objective was to evaluate consistency between two systems, quantify the scale of variances, and uncover insights into the root causes of discrepancies. The analysis further provides actionable recommendations to enhance accuracy, efficiency, and governance in the reconciliation process.

2. Data Overview

a) **Data Source:** Reconciliation spreadsheets for EPI and MINPREM.

b) **Data Volume:** 181 records across multiple Business IDs and years.

c) **Scope:** Comparative assessment of EPI-only variances versus combined EPI & MINPREM variances.

3. Key Findings

3.1 Variance Metrics

a) **EPI Variances:** Relatively small and stable, with a total variance of ~**137.8M** and a maximum deviation of **13.7M**.

b) **MINPREM Variances:** Significantly larger, totaling **~-1.59B**, with a maximum deviation of **63.1M**.

c) **Overall Contribution:** MINPREM accounts for **over 90%** of reconciliation mismatches, overshadowing EPI discrepancies.

3.2 Distribution of Variances

a) Variances were grouped into **small, medium, and large** categories.

b) Out of 181 rows, **69 entries** fell into the large variance category for both EPI and MINPREM.

c) **Periodic analysis** revealed recurring high variances in **2013, 2008, and 2007**, making them key contributors to reconciliation gaps.

3.3 Temporal Patterns

a) EPI variances remained clustered close to zero across years.

b) MINPREM variances exhibited **recurring systemic discrepancies**, particularly in 2013, 2008, and 2007.

c) These patterns indicate structural or business-rule-related issues, rather than random variances.

4. Dashboard Insights

Visual analysis (line charts, top variance bar charts, and correlation plots) provided the following insights:

a) **EPI:** Stable with low reconciliation risk.

b) **MINPREM:** Highly volatile, driving the majority of mismatches.

c) **Concentration of Issues:** A limited set of years and Business IDs account for most reconciliation problems.

d) **Actionable View:** Dashboards highlight where reconciliation efforts should be focused, enabling more efficient remediation.

5. Conclusions

The reconciliation analysis demonstrates that discrepancies are overwhelmingly driven by **Minimum Premium (MINPREM)** rather than **Estimated Premium Income (EPI).** While EPI variances remain relatively small and stable, MINPREM shows recurring and systemic deviations, concentrated in specific years (notably 2013, 2008, and 2007) and across certain Business IDs. These findings indicate that the reconciliation challenges stem less from random errors and more from structural issues in the calculation, configuration, or data transfer of MINPREM, creating a material risk to financial reporting accuracy if left unaddressed.

6. Recommendations

a) **Targeted Root Cause Analysis:** Investigate high-variance Year (2013, 2008, 2007) to identify calculation or mapping errors.

b) **System Review for MINPREM:** Reassess business rules, configuration, and data transfer processes specific to **MINPREM**.

c) **Enhanced Data Controls:** Implement **automated variance thresholds and alerts** to detect and escalate discrepancies in real time.

d) **Improved Governance:** Establish recurring **reconciliation dashboards** to provide management with ongoing visibility and accountability.

e) **Future Automation:** Explore an **interface solution** to automate reconciliation checks, reduce manual intervention, and ensure system-to-system consistency.

Annexures:

- **Variance Analysis (detailed calculations)**
- **Reconciliation Dashboard (visual summaries)**

Business Analysis Report on EPI and Minimum Premium Variances

Table 1: Variance Summary Metrics

Metrics	EPI Variance	MINPREM
Count of rows	181	181
Count Mismatches	2,350	2,350
Sum of Variance	137,756,193.80	-1,596,165,958.20
Sum of Absolute Variance	139,383,994.20	1,596,165,958.20
Average Non Zero Variance	761,083.94	-8,818,596.45
Average Non Zero ABS Variance	770,077.32	8,818,596.45
Max Absolute Value	13,771,226.00	63,125,376.00

Explanation:
This table provides an overall statistical view of mismatches between the two systems.

    a) **EPI** variances are positive overall, with a net difference of **+137.8M**.

    b) **Minimum Premium** shows much larger mismatches, skewing negative, with a net difference of **-1.59B**.

    c) The **absolute variances** highlight the true scale of discrepancies, showing that reconciliation will involve very large adjustments for Minimum Premium compared to EPI.

Table 2: Variance Size Distribution

	Column Labels				
Values	Large	Medium	Small	Grand Total	Percentage
Count of EPI_variance	69	31	81	181	38%
Count of ABS_EPI_Variance	69	31	81	181	17%
Count of MINPREM_Variance	69	31	81	181	45%
Count of ABSMINPREM_Variance	69	31	81	181	100%

Explanation:
This distribution groups mismatches into **Small (45%)**, **Medium (17%)**, and **Large (38%)** buckets. The fact that **38% of variances are Large** indicates a significant concentration of material mismatches that may need prioritization. While both EPI and Minimum Premium share the same distribution, the **financial scale** of Minimum Premium variances is far higher (as seen in Table 1).

Table 3: Variance Analysis by Business ID & Year

BusinessID	(All)

Row Labels	Sum of EPI_variance	Sum of ABS_EPI_Variance	Sum of MINPREM_Variance	Sum of ABSMINPREM_Variance
2013	23,323,529.00	23,323,529.00	-346,262,937.00	346,262,937.00
2014	2,117,155.00	2,117,167.00	-237,185,457.00	237,185,457.00
2008	18,418,804.00	18,418,804.00	-143,530,196.00	143,530,196.00
2012	6,909,361.00	6,909,361.00	-104,140,639.00	104,140,639.00
2007	17,289,719.00	17,289,719.00	-96,663,521.00	96,663,521.00
2017	11,055,970.00	11,055,970.00	-90,356,468.00	90,356,468.00
2016	-174,891.20	1,452,897.20	-89,186,872.20	89,186,872.20
2006	26,137,758.00	26,137,758.00	-75,427,242.00	75,427,242.00
2015	172,115.00	172,115.00	-70,787,822.00	70,787,822.00
2010	8,931,260.00	8,931,260.00	-66,522,910.00	66,522,910.00
2019	2,700,152.00	2,700,152.00	-62,731,848.00	62,731,848.00
2011	1,179,837.00	1,179,837.00	-61,966,998.00	61,966,998.00
2002	1,101,159.00	1,101,159.00	-49,129,241.00	49,129,241.00
2018	904,474.00	904,474.00	-35,159,439.00	35,159,439.00
2009	1,716,710.00	1,716,710.00	-20,095,790.00	20,095,790.00
2001	18,000.00	18,000.00	-19,107,000.00	19,107,000.00
2005	14,682,313.00	14,682,313.00	-11,167,687.00	11,167,687.00
2004	844,596.00	844,596.00	-10,905,404.00	10,905,404.00
2020	428,137.00	428,137.00	-5,301,863.00	5,301,863.00
2003	36.00	36.00	-536,624.00	536,624.00
Grand Total	137,756,193.80	139,383,994.20	-1,596,165,958.20	1,596,165,958.20

Explanation:
This breakdown shows where mismatches are concentrated **Periodically.**

    a) Some year statistics (e.g., **2013 and 2014**) account for disproportionately large mismatches, especially in **Minimum Premium** (hundreds of millions negative).

    b) EPI variances are relatively modest compared to the extreme swings in Minimum Premium.

    c) This suggests that reconciliation issues are not evenly spread but heavily **clustered in specific business lines**, which may guide prioritization of investigations.

Business Analysis Report on EPI and Minimum Premium Variances

Total EPI Variance
137,756,193.80

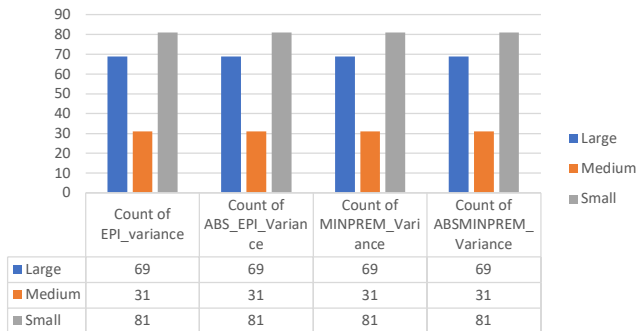**Total MINPREM Variance**
1,596,165,958.20

Max Variance
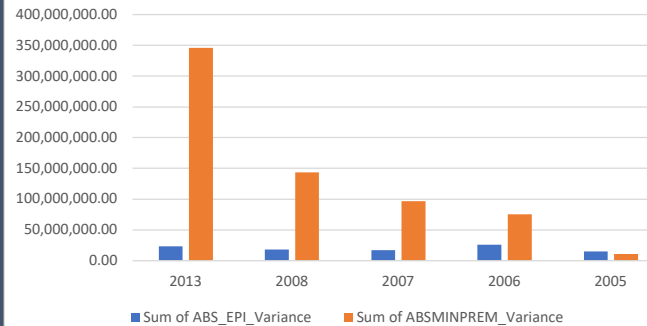EPI - 13,771,226.00
MINPREM - 63,125,376.00

Average Non-Zero Variance
EPI - 770,077.32
MINPREM - 8,818,596.45

Variance Size Distribution

	Count of EPI_variance	Count of ABS_EPI_Variance	Count of MINPREM_Variance	Count of ABSMINPREM_Variance
Large	69	69	69	69
Medium	31	31	31	31
Small	81	81	81	81

Legend: Large, Medium, Small

Top 10 Variance Anlysis by Year

Years: 2013, 2008, 2007, 2006, 2005
Legend: Sum of ABS_EPI_Variance, Sum of ABSMINPREM_Variance

Correlation Analysis of Variance by Year

Legend: Sum of EPI_variance, Sum of MINPREM_Variance

Variance Trends Over Time

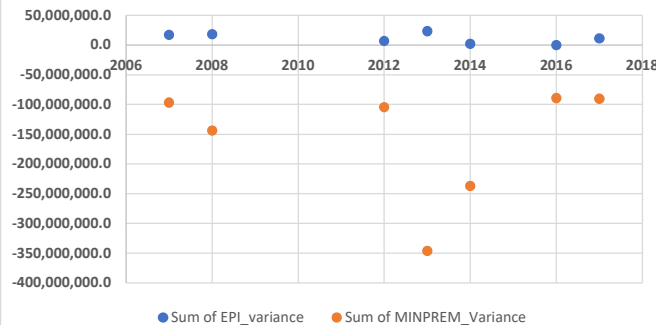Legend: Year, Sum of EPI_variance, Sum of MINPREM_Variance

Conclusion:
The charts clearly demonstrate that while **EPI variances remain relatively small and stable**, the **MINPREM variances dominate the discrepancies**, with large negative swings across several years. The *Top 10 Variance Analysis* highlights 2013, 2008, and 2007 as particularly problematic years, and the correlation analysis confirms that reconciliation issues are primarily concentrated in MINPREM rather than EPI.

Recommendations:
a) **Prioritize MINPREM Analysis:** Direct investigation toward MINPREM reconciliation processes, as it contributes the majority of mismatches.
b) **Focus on High-Variance Years:** Conduct a detailed review of 2013, 2008, and 2007 to identify underlying calculation or data transfer issues.
c) **Implement Variance Threshold Alerts:** Establish automated monitoring to flag extreme variances early, preventing late discovery during reconciliation.
d) **BusinessID-Level Review:** Use dashboards to continuously monitor BusinessIDs with recurring large variances for quicker resolution.