Malaysian Motor Claims Inflation Analysis – Preliminary Results

Emerging risks and opportunities in the APAC non-life market webinar 31 July 2025

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31 July 2025

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- This handout and presentation represent the personal views of the speakers who do not accept any liability for reliance on it and make no warranty as to its content or accuracy.

- This handout supports the research effort of the IFoA GI Asia International Working Party, IFoA Machine Learning In Reserving Working Party and Queen Mary University of London and is not written advice directed at the particular facts and circumstances of any given situation and/or data. The data has been provided by ISM (Insurance Services Malaysia Bhd).

- The materials contained in this presentation pack and any oral representation of it by the project group are explicitly outside the scope of the TAS.

- These initial results are not yet fully peer reviewed and should not be directly used in analysis performed by insurance companies.

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Scope of Study

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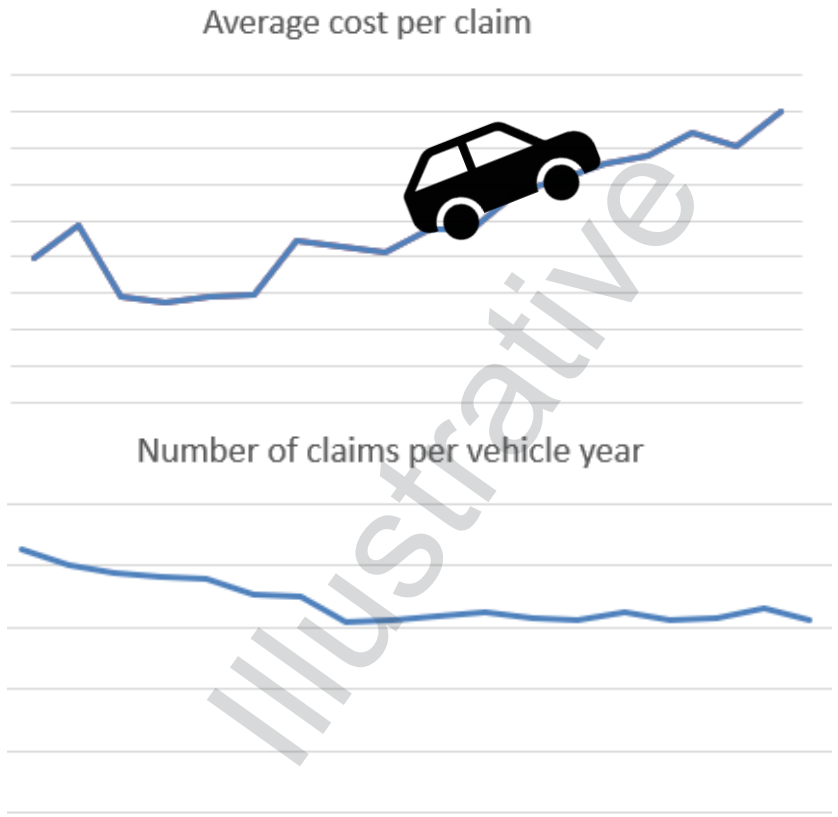
Scope of Study

- Collaboration with ISM to study Malaysian Claims Inflation 2010 - Q2 2024. Previous analysis presented in 2023 covered data up to Q2 2023.
  - Aim to identify and explain historic frequency and severity trends
  - Attempt to establish drivers of trends using publicly available indices, as well as developments affecting the Motor market
  - Own Damage (OD), Third Party Property Damage (TPPD) and Bodily Injury (BI) analysed separately
  - BI Excess claims (portion > MYR500k) analysed separately.
- Additional Outputs include:
  - Claims development patterns
  - Claim settlement speed trends
  - Large loss distribution fitting



Data for Analysis

- Data Period: 2010 – Q2 2024
- Private Car (PC) & Motorcycle (MC)
- Type of Cover:
  - Comprehensive
  - Third Party, Fire & Theft
  - Third Party
  - Act (Third-party liability for death or bodily injury, minimum requirements of the Road Transport Act 1987)
- Nature of Loss
  - BI - Bodily Injury (with large loss split for PC)
  - OD - Own Damage (including salvage and subrogation recoveries)
  - TPPD - Third Party Property Damage
  - Windscreen, Theft

Study Applications

- **On-levelling historic loss ratios** to help inform IELR selections for recent years.
- **Company trends vs industry trends comparison**. Helps insurers understand if inflationary patterns present in their data are replicated in the market.
- **Highlight specific areas** that might be worth further investigations by ITOs (e.g. heads of damage with unusual trends).
- Particularly useful for identifying **severity/frequency trends on large losses**.
- This in turn helps **portfolio management** for ITOs, as well as the calculation of large loss loads for reserving.
- **Building and updating pricing models**: On-levelling factors are a key assumption when adjusting historic data for use in pricing.
- **Reinsurance Purchase and Pricing**:
  - Allows the ITOs to understand how much reinsurance they need and if it needs to be indexed
  - For reinsurers, it is helpful to have a market view of inflation when pricing motor treaties
  - Also allows comparison of individual cedant claims trends with wider market

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Market Environment

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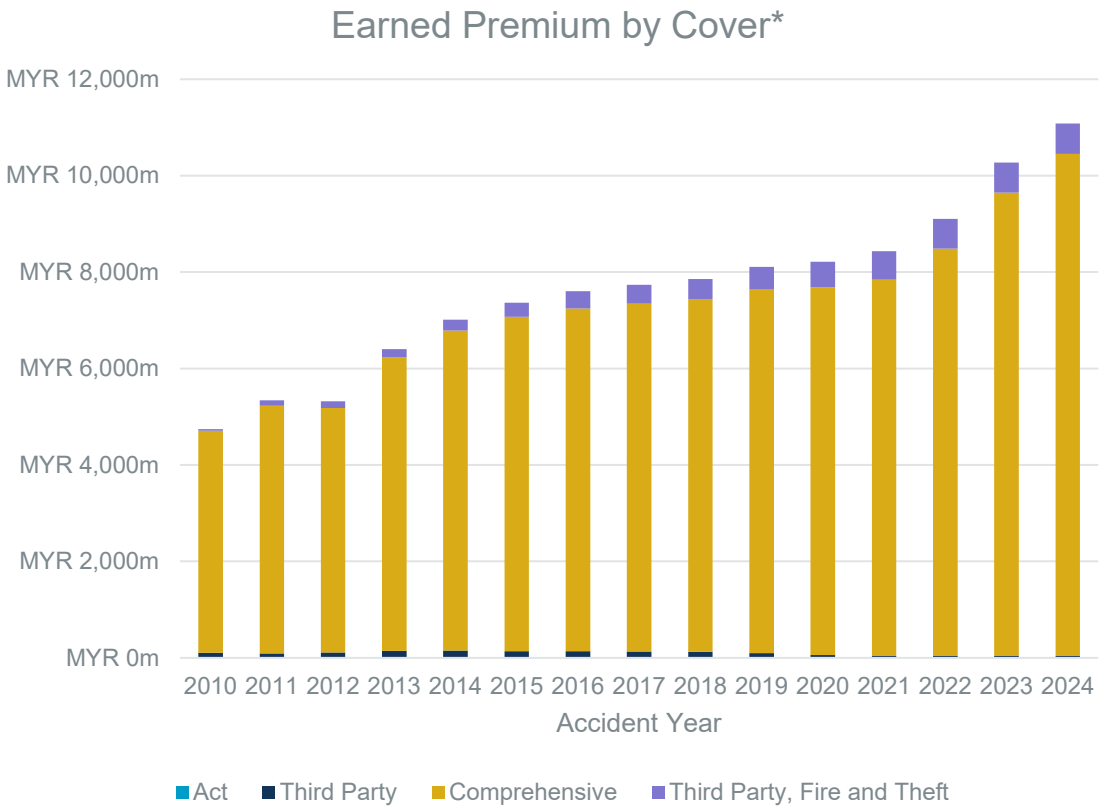
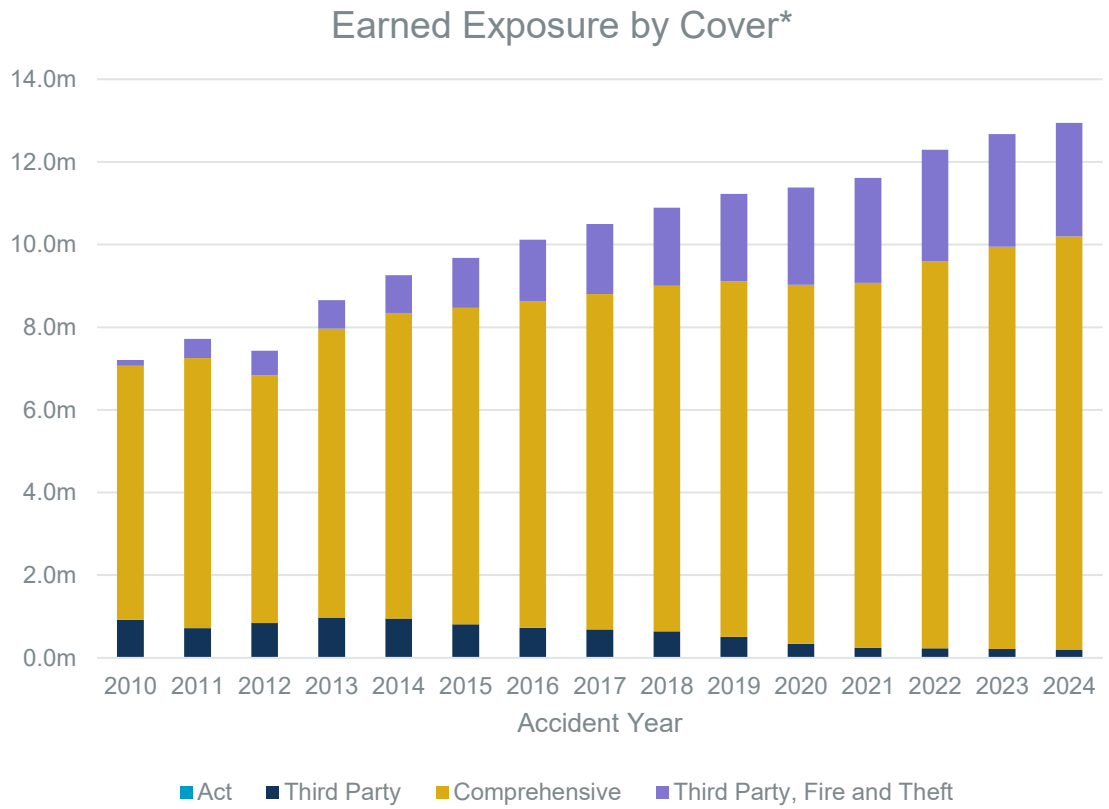
Market Environment – Premiums & Exposure

Premiums and Exposure (vehicle years) have grown steadily since 2012

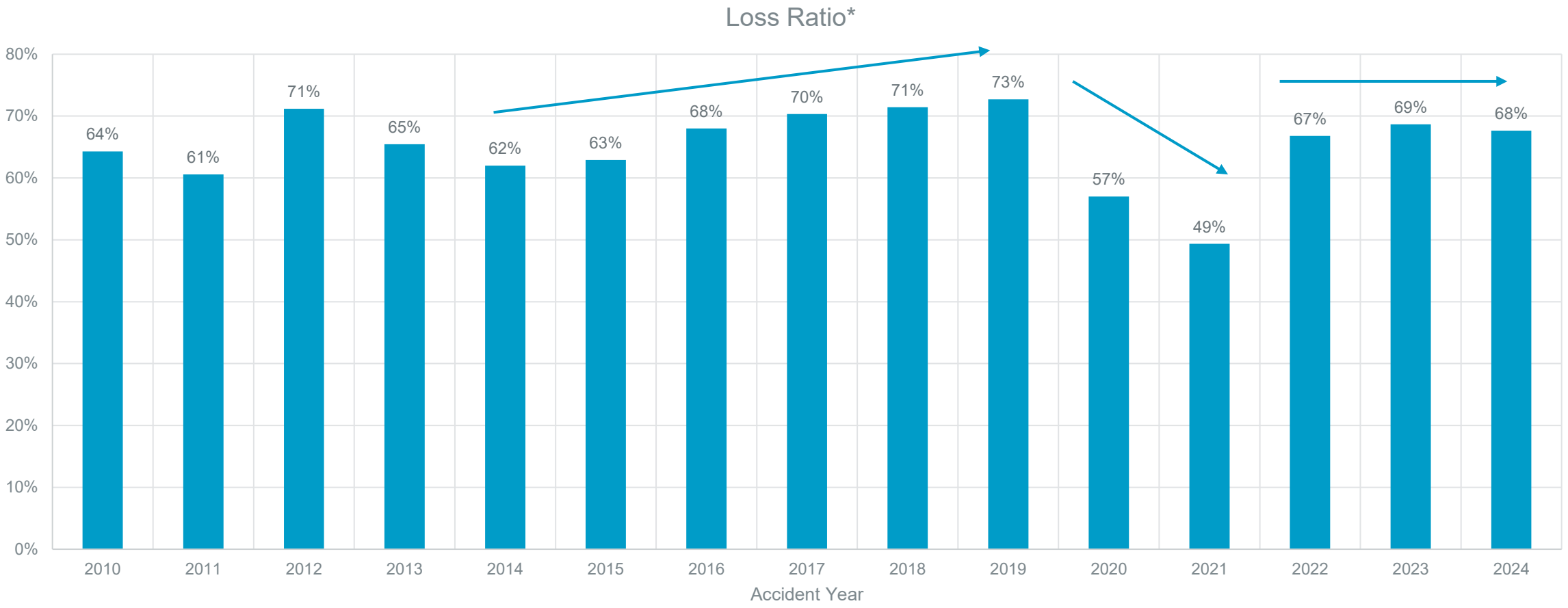




* Full year 2024 premiums and exposure extrapolated from Q2 2024 data.

Market Environment – Ultimate Loss Ratios

Lost ratios have normalised with premiums now matching claims inflation

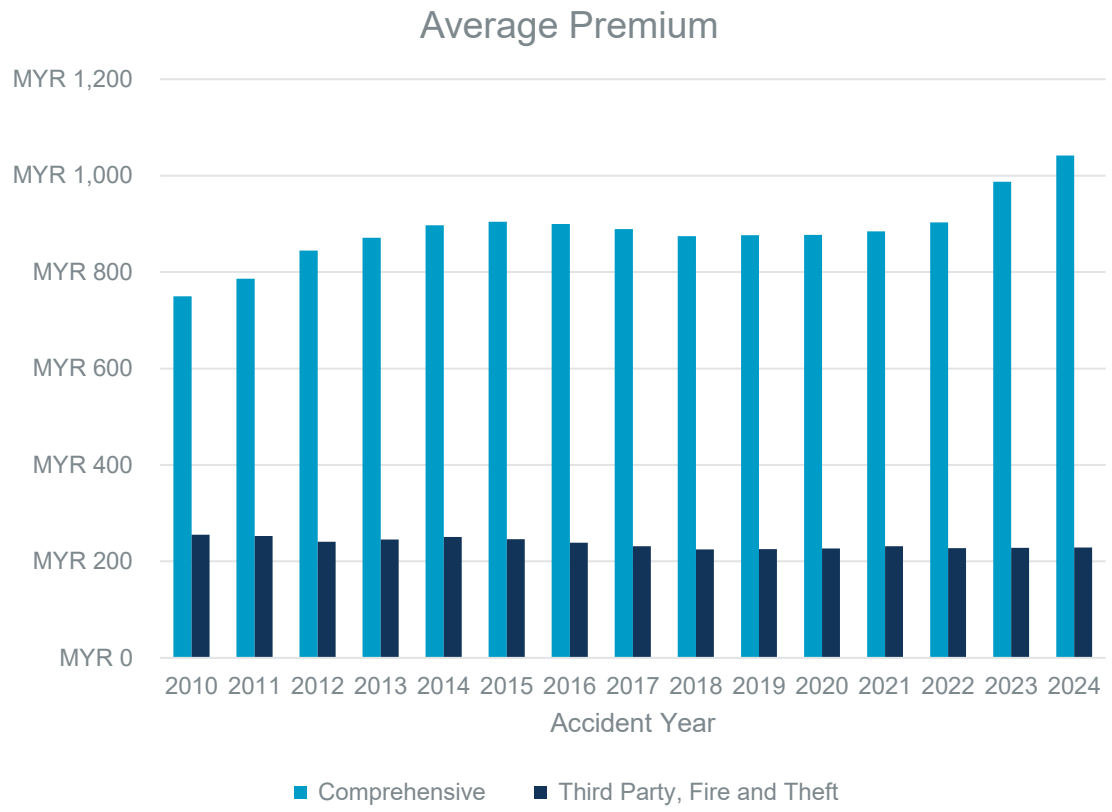


* Full year 2024 claims and exposure extrapolated from Q2 2024 data.

Market Environment

Only comprehensive premium growth in 2023

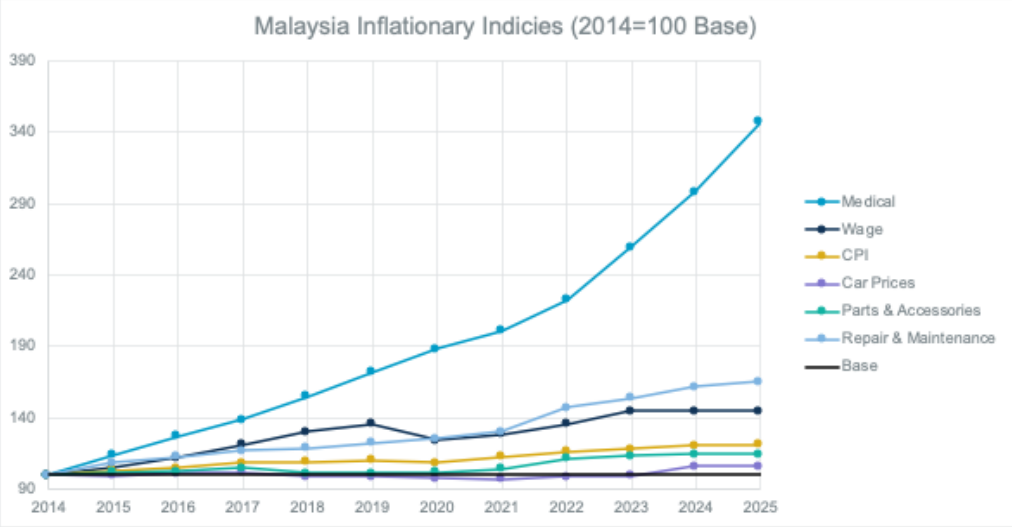
- Only material covers by earned premium are
  - Comprehensive (94% of total EP) and
  - Third Party, Fire & Theft Cover (6% of total EP)
- Average premiums for both covers have been broadly flat since detariffication in 2017 until 2022.
- Since 2022, the market is witnessing a sustained increase in the Comprehensive premiums.
- Interestingly, the same increase is not seen in the TPFT policies which contribute ~20% to the industry exposure base.
- Our analysis suggests an increased severity for both OD and BI claims, so it is interesting question as to why TPFT premiums have remained stable.

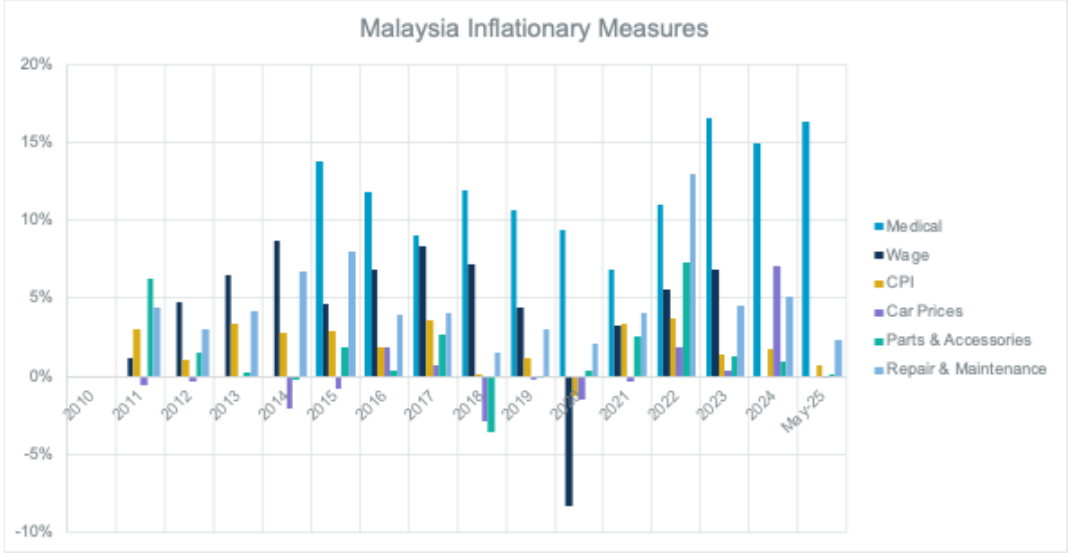


Market Environment – General Inflation

Benchmark Indices

- Accurately adjusting claims for changing levels of inflation can be challenging and various methods are used
  - CPI is a popular index used across many LoBs
  - What index (if any) is suitable to use for Motor claims?
- Different types of inflation can affect motor claims depending on the claim drivers
  - We have selected indices[1] applicable to motor claims in Malaysia showing a wide range of year-on year-movements





- Chart to the left shows the indices using 2014 as a base year
- Medical costs in Malaysia have risen sharply over the past few years which may have an impact on motor bodily injury claims
- Repair & Maintenance costs have risen faster than general CPI
  - May be a function of wages, which also shows increases despite one-off pandemic dip
- Actual prices of cars seem to be stable, potentially due to the definition of the metric.

[1] Dept. of Statistics Malaysia, WTW Global Medical Trends Survey Report, Mercer

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Industry Statistics

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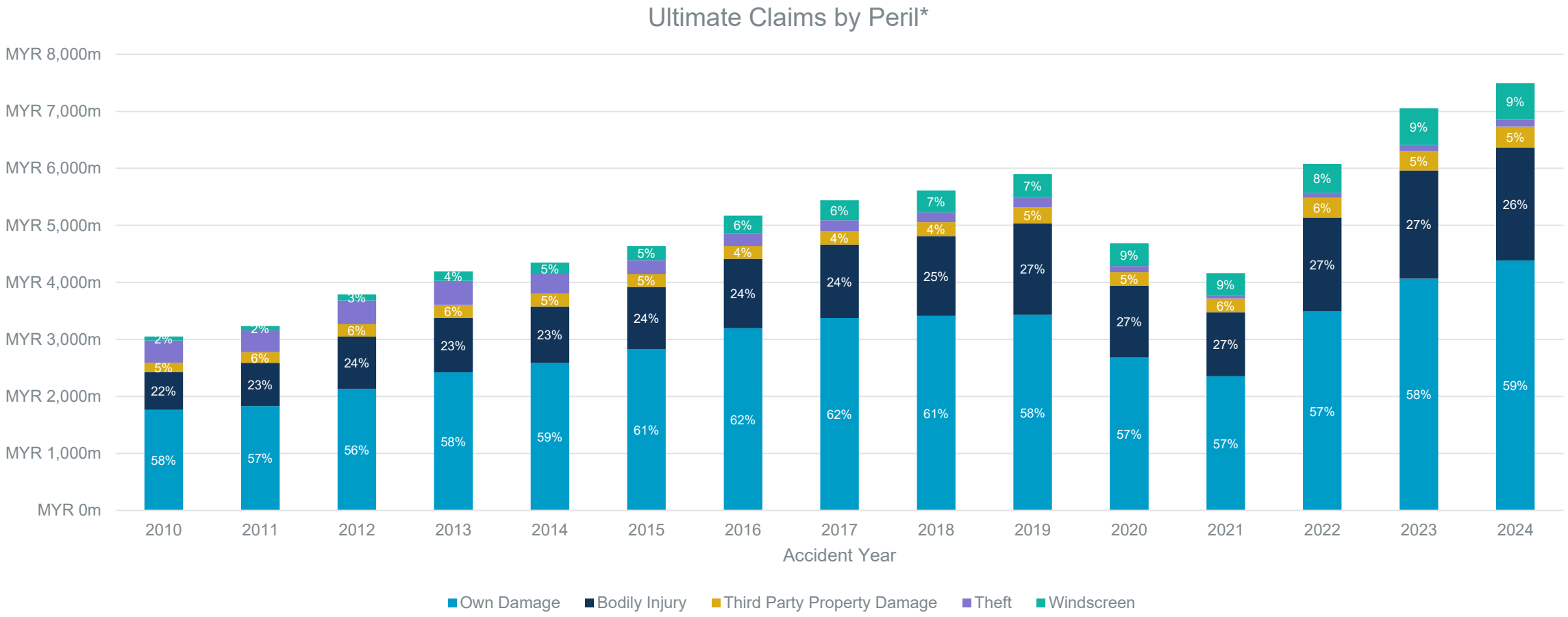
Industry Statistics – Ultimate Claims Cost by Peril

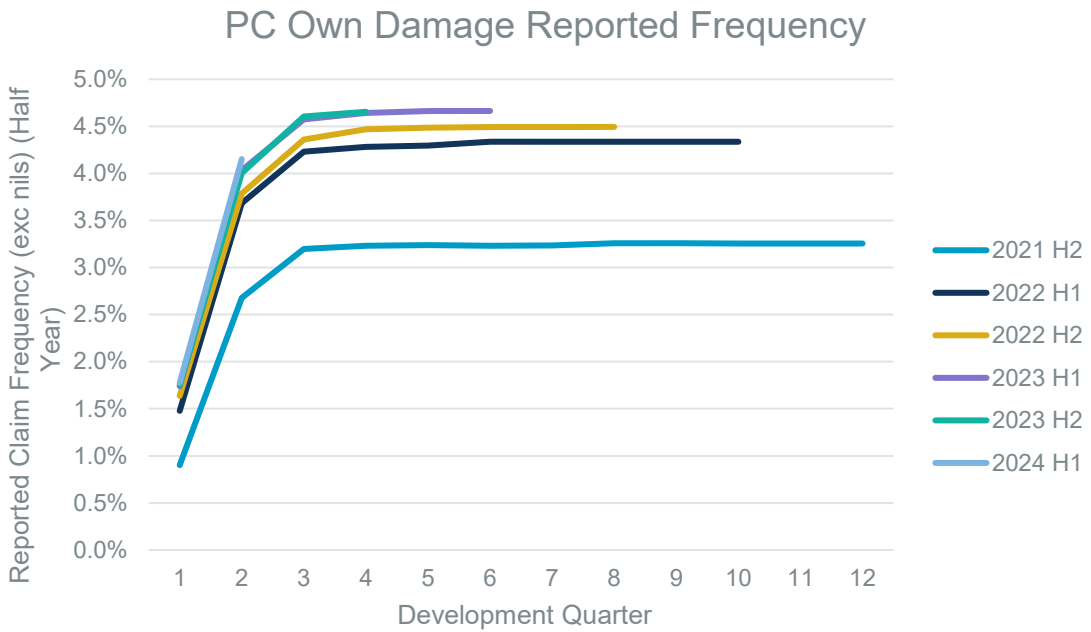
Largest perils are Own Damage and Bodily Injury

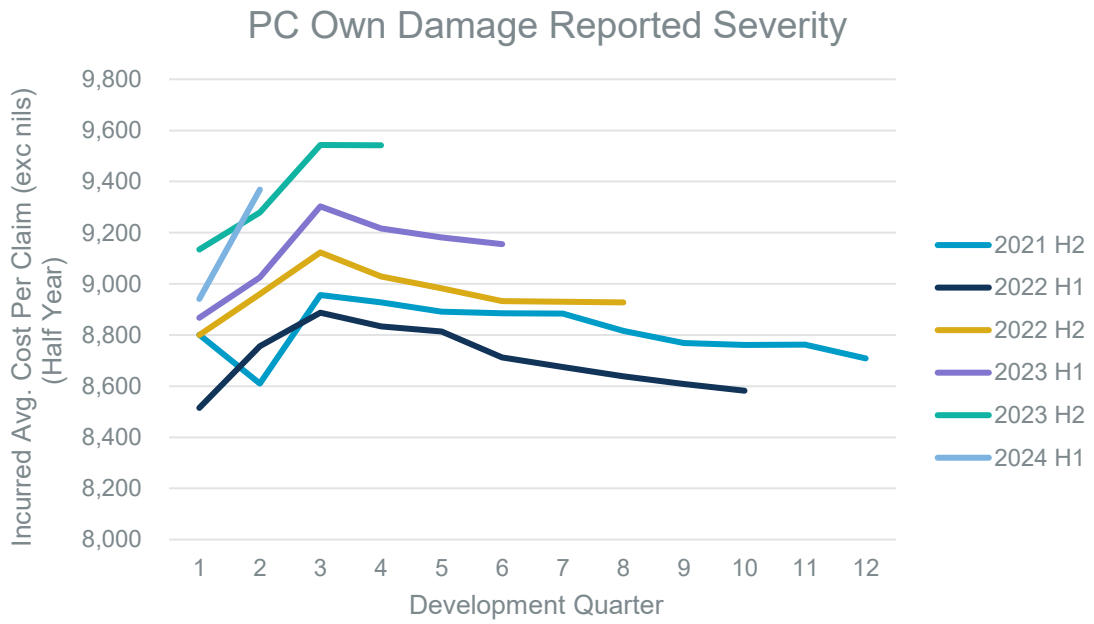


* Full year 2024 claims and exposure extrapolated from Q2 2024 data.

Industry Statistics – Own Damage

Reported Frequency and Severity HY 2024



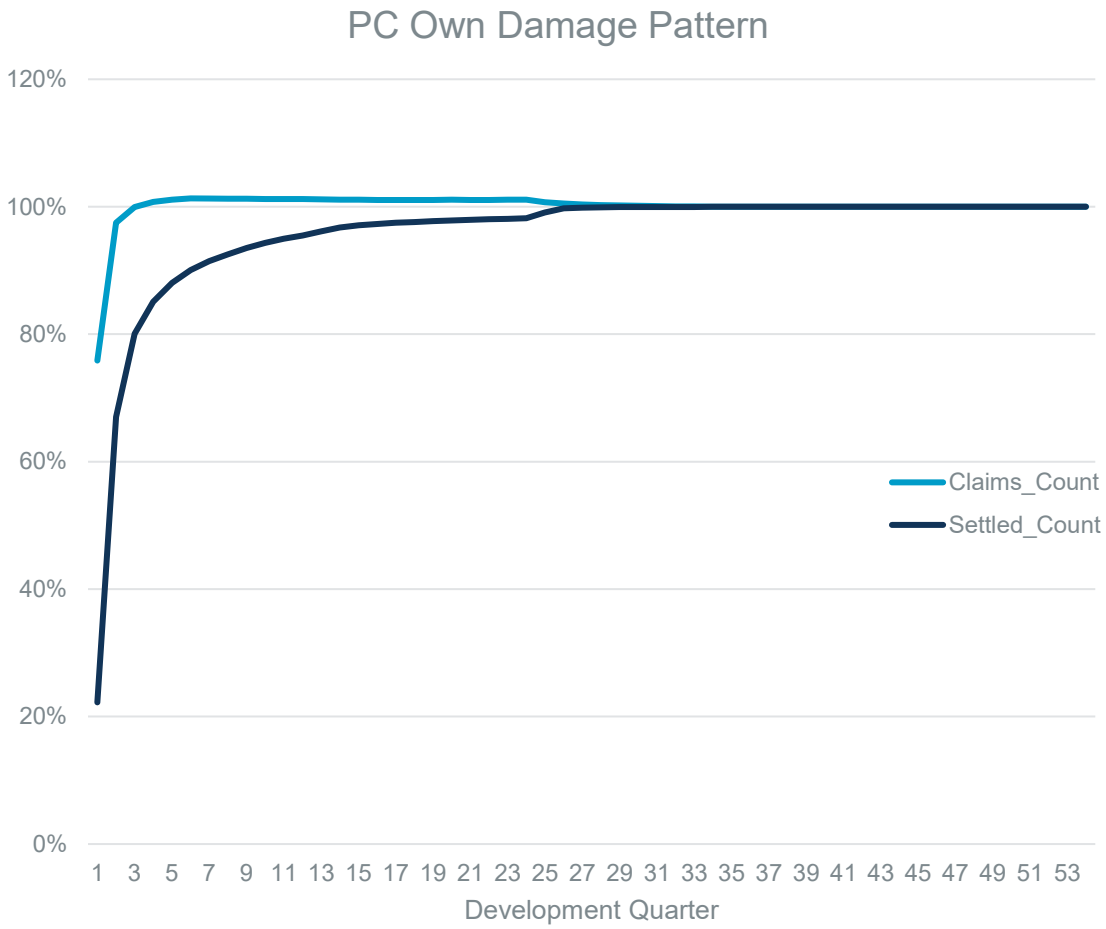


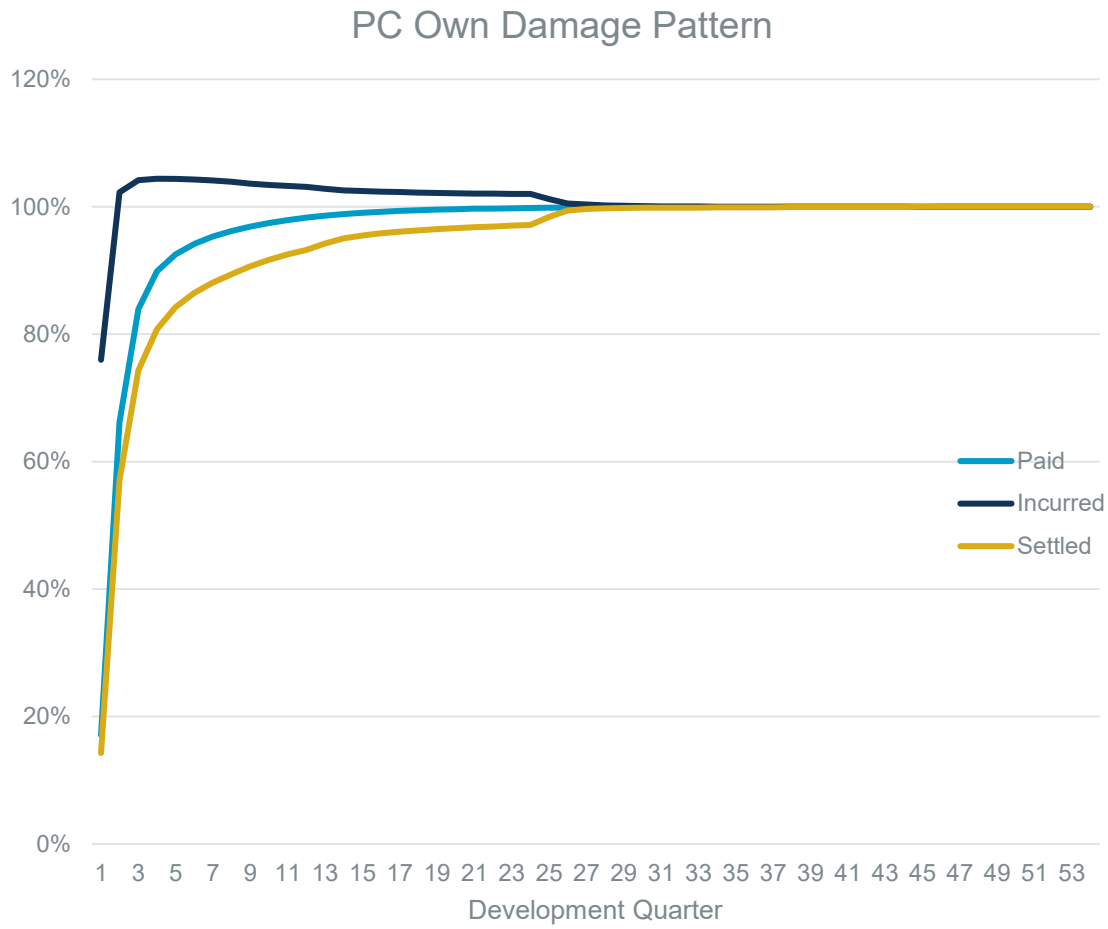
Accident Period	Frequency Annual % Change	Severity Annual % Change
2021 H2	-15.2%	-0.3%
2022 H1	39.8%	0.0%
2022 H2	37.9%	1.3%
2023 H1	7.5%	5.1%
2023 H2	4.2%	5.7%
2024 H1	3.0%	3.8%

- Following the reduction in frequency during the pandemic, frequency levels are back to their long-term trend of 4.5% - 5% p.a.
- Incurred severity inflation continues around 4% over the past year.

Industry Statistics – Own Damage

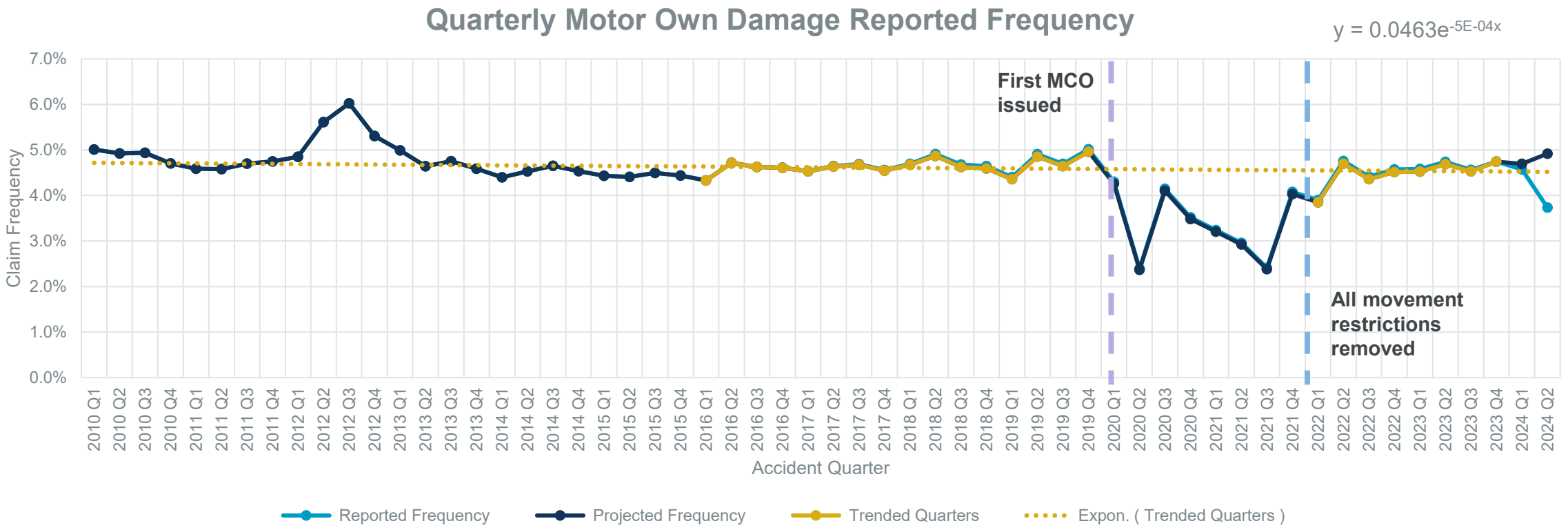
Development Patterns





Industry Statistics – Own Damage

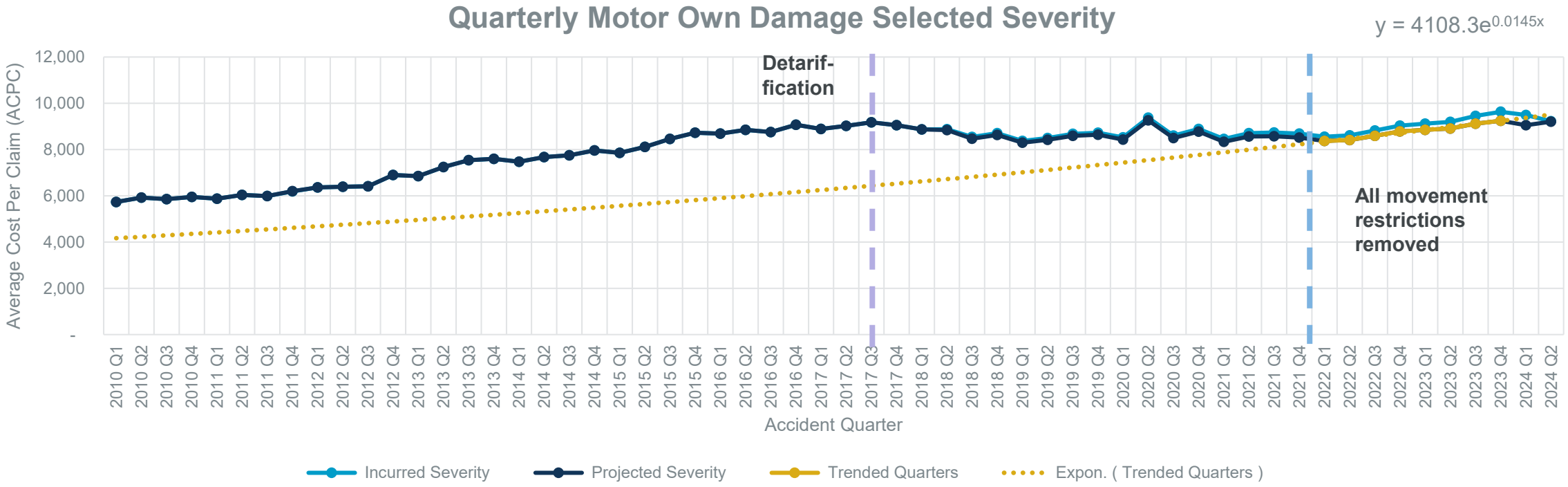
Quarterly Frequency



- Long term claim frequency is back to the 4.5% - 5% range.
- Following the large reduction in claims frequency during 2020-21, the Post-COVID frequency has returned to pre-pandemic levels.
- Annualised trend frequency inflation during 2022 Q2 - 2024 Q1 was 2.2%.

Industry Statistics – Own Damage

Quarterly Severity



- Initial steep increases until 2017, followed by deflation until the end of the pandemic and continues inflation since:
  - Trending from 2010 Q1 - 2017 Q3 shows annual inflation of 7%.
  - Annual deflation of 1.0% from 2017 Q3 - 2021 Q4. Deflation seems to begin during detariffication, possibly due to more focus on claims settlements.
  - During 2022-2023, there was annual inflation of 6.0%, followed by a small 0.4% reduction in 2024 H1.

Industry Statistics – Own Damage

Projected Own Damage Results HY2024

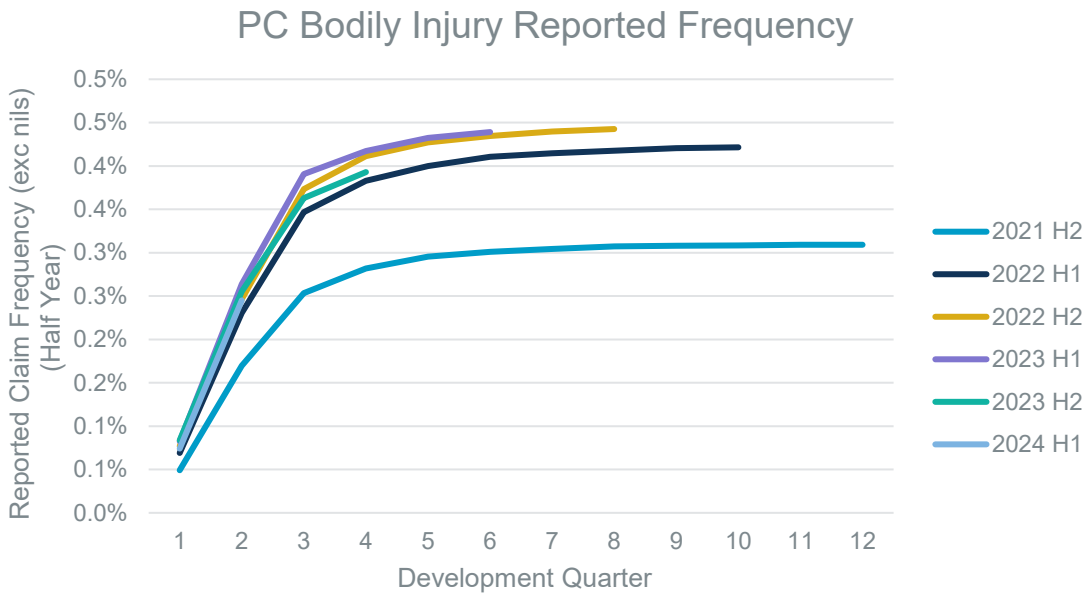
Projected Ultimate Own Damage Results

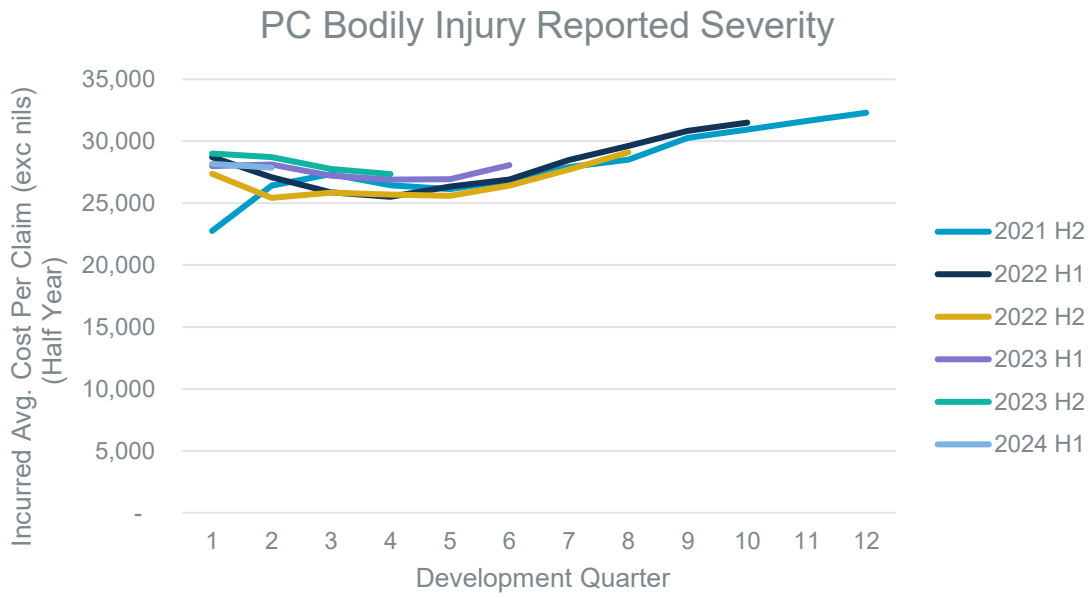
Accident Period	Earned Exposure (millions of vehicle years)	Ultimate OD Claim Frequency (Non-nil claims per million vehicle years)	Ultimate OD Claim Severity (MYR)	Ultimate OD Burning Cost (MYR)	Year-on-Year Change in Frequency (% pa)	Year-on-Year Change in Severity (% pa)	Year-on-Year Change in Burning Cost (% pa)
2021 Q1	2.2	32,041	8,336	267.1	-24.7%	-1.1%	-25.6%
2021 Q2	2.2	29,238	8,563	250.4	23.5%	-7.5%	14.1%
2021 Q3	2.2	23,795	8,576	204.1	-42.0%	0.9%	-41.4%
2021 Q4	2.2	40,298	8,519	343.3	15.8%	-2.9%	12.4%
2022 Q1	2.2	38,508	8,368	322.2	20.2%	0.4%	20.6%
2022 Q2	2.3	46,993	8,411	395.3	60.7%	-1.8%	57.9%
2022 Q3	2.4	43,585	8,595	374.6	83.2%	0.2%	83.6%
2022 Q4	2.4	45,164	8,783	396.7	12.1%	3.1%	15.6%
2023 Q1	2.4	45,254	8,854	400.7	17.5%	5.8%	24.4%
2023 Q2	2.4	46,897	8,903	417.5	-0.2%	5.8%	5.6%
2023 Q3	2.5	45,327	9,120	413.4	4.0%	6.1%	10.4%
2023 Q4	2.5	47,473	9,243	438.8	5.1%	5.2%	10.6%
2024 Q1	2.5	46,992	9,049	425.2	3.8%	2.2%	6.1%
2024 Q2	2.5	49,347	9,208	454.4	5.2%	3.4%	8.8%

- Note – No adjustments have been made for potential distortions / impact of COVID-19 or claims inflation on claims experience.

Industry Statistics – Bodily Injury

Reported Frequency and Severity HY 2024



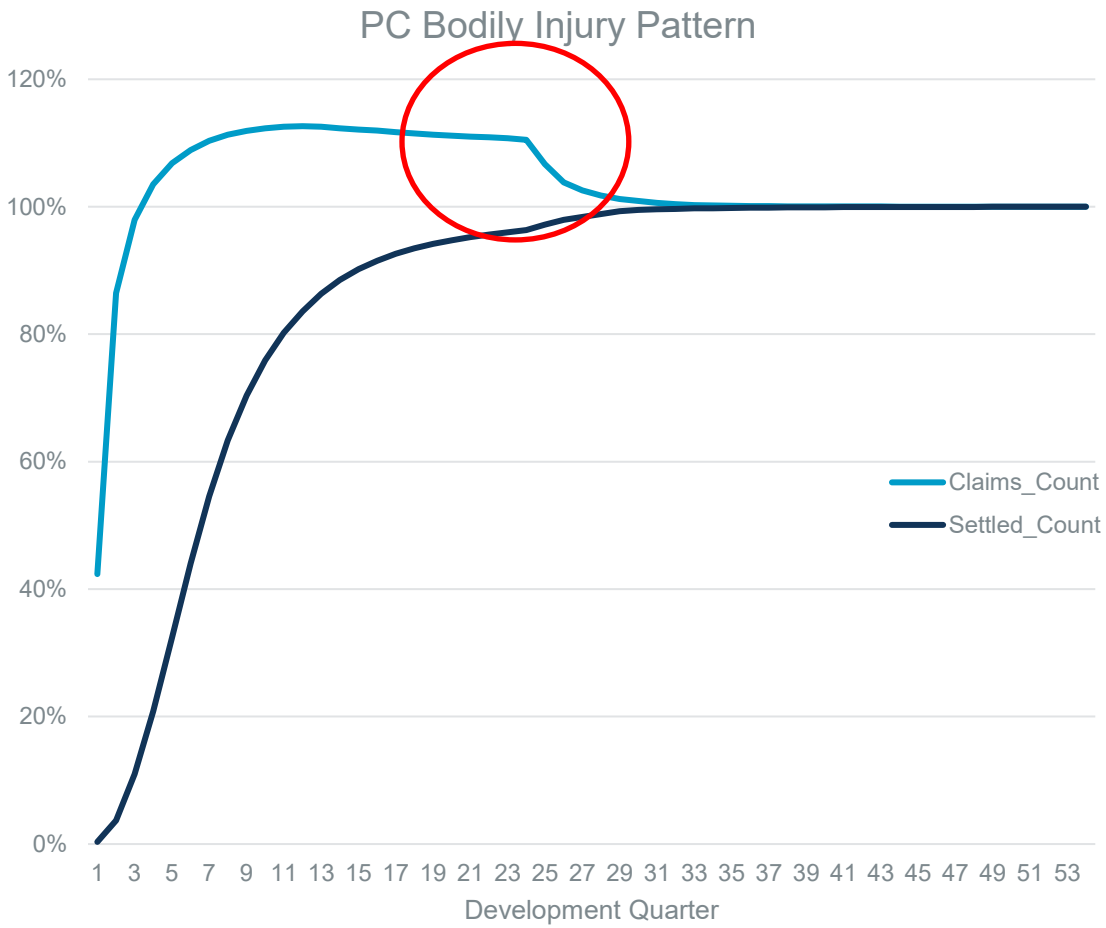


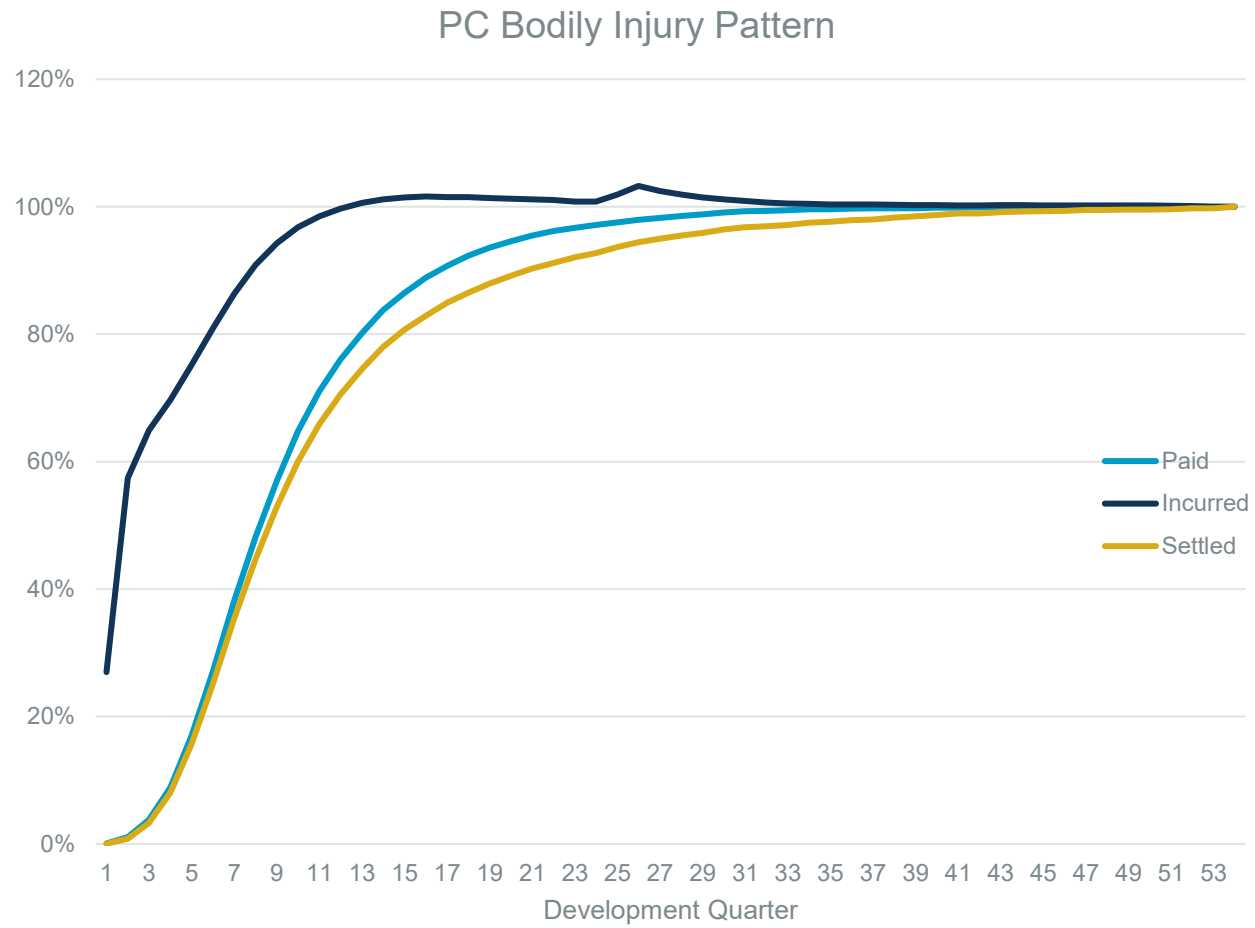
Accident Period	Frequency Annual % Change	Severity Annual % Change
2021 H2	-14.3%	-6.1%
2022 H1	33.0%	-0.1%
2022 H2	44.1%	2.1%
2023 H1	6.9%	4.3%
2023 H2	-4.4%	6.4%
2024 H1	-7.1%	-0.9%

- Following the reduction in frequency during the pandemic, frequency levels went back up in 2022 but exhibiting a downward trend for the past several quarters. Note that it is still elevated compared to the pre-detariffication period.
- Severity inflation is exhibiting an increasing trend over the past several quarters.

Industry Statistics – Bodily Injury

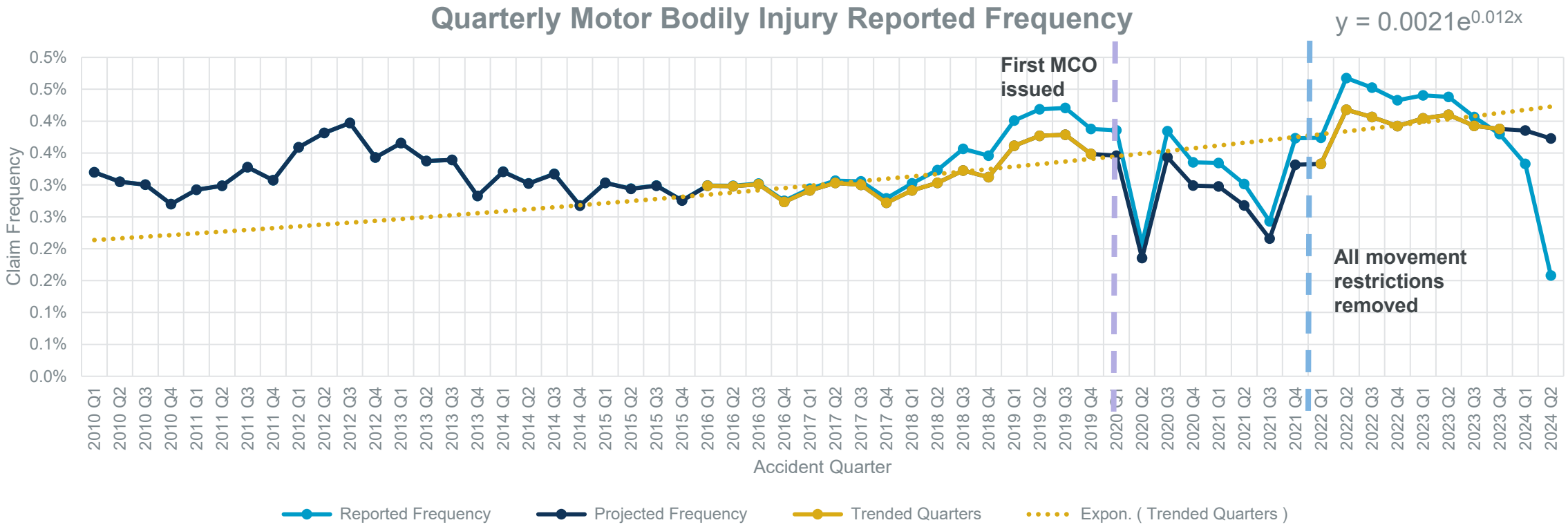
Development Patterns





Industry Statistics – Bodily Injury

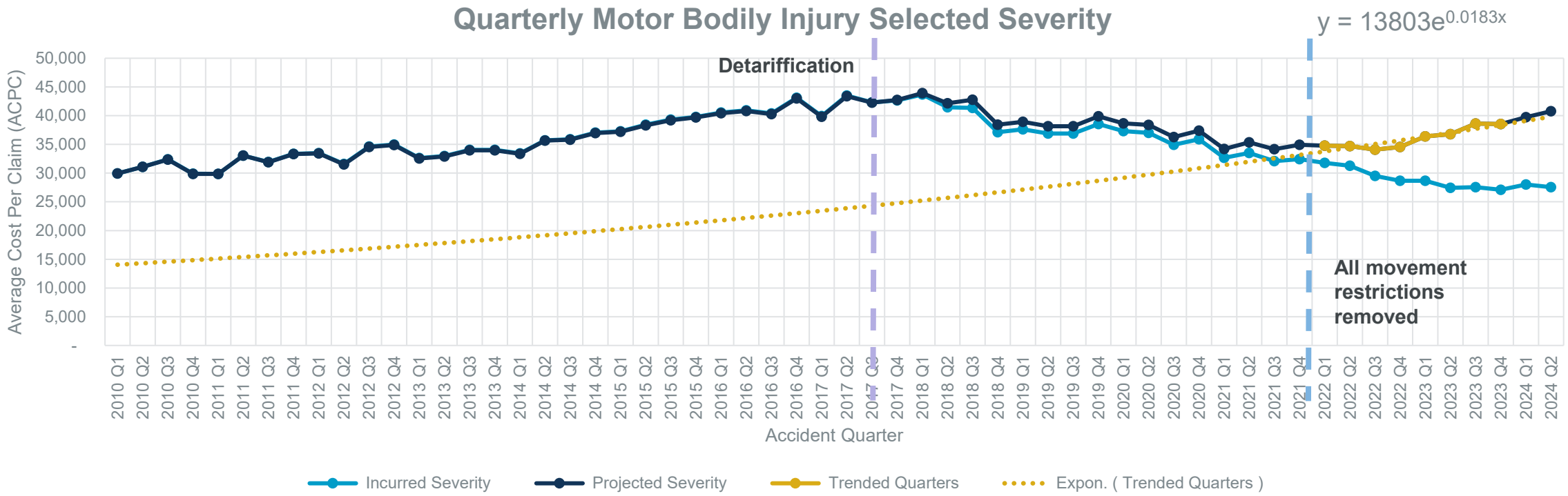
Quarterly Frequency



- Frequency has returned to pre-COVID levels. While it is showing a downwards trend since a post-covid peak of 2022 Q2, it is still currently projected to finish slightly above the 2019 AY levels, at just under 0.4%.
- Impact of time bar expiring after 6 years is clear to see; this explains why the gap between reported and projected (ultimate) frequency disappears after 6 years.

Industry Statistics – Bodily Injury

Quarterly Severity



- Increasing trend from 2010-17, followed by reductions until the end of 2021. Trending between 2017 Q3 and Q4 2021 suggest an annual 4% reduction. Severity is starting to pick back up from 2022 Q1 and suggesting a 10-12% annual increase, undoing any of the improvements since detariffication.
- The trends could be different when looked at as split between attritional and large, which is our next step.

Industry Statistics – Bodily Injury

Projected Bodily Injury Results HY2024

Projected Ultimate Bodily Injury Results

Accident Period	Earned Exposure (millions of vehicle years)	Ultimate BI Claim Frequency (Non-nil claims per million vehicle years)	Ultimate BI Claim Severity (MYR)	Ultimate BI Burning Cost (MYR)	Year-on-Year Change in Frequency (% pa)	Year-on-Year Change in Severity (% pa)	Year-on-Year Change in Burning Cost (% pa)
2021 Q1	2.9	2,978	34,206	101.9	-14.0%	-11.5%	-23.9%
2021 Q2	2.9	2,682	35,346	94.8	44.5%	-7.9%	33.1%
2021 Q3	2.9	2,161	34,181	73.9	-37.1%	-5.8%	-40.8%
2021 Q4	2.9	3,322	34,935	116.1	11.0%	-6.6%	3.7%
2022 Q1	2.9	3,337	34,773	116.0	12.1%	1.7%	13.9%
2022 Q2	3.1	4,191	34,707	145.5	56.3%	-1.8%	53.5%
2022 Q3	3.2	4,084	34,093	139.2	89.0%	-0.3%	88.5%
2022 Q4	3.1	3,945	34,563	136.4	18.7%	-1.1%	17.5%
2023 Q1	3.1	4,079	36,376	148.4	22.2%	4.6%	27.9%
2023 Q2	3.1	4,146	36,763	152.4	-1.1%	5.9%	4.8%
2023 Q3	3.2	3,982	38,616	153.8	-2.5%	13.3%	10.4%
2023 Q4	3.2	3,946	38,561	152.2	0.0%	11.6%	11.6%
2024 Q1	3.2	3,937	39,729	156.4	-3.5%	9.2%	5.4%
2024 Q2	3.3	3,825	40,782	156.0	-7.7%	10.9%	2.3%

- Note – No adjustments have been made for potential distortions / impact of COVID-19 or claims inflation on claims experience.

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Next Steps

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Next Steps

Analysis

- Finalise inflation analyses for
  - attritional and large Bodily Injury claims
  - TPPD, Windscreen and Theft, and
  - all Motorcycle perils.
- Multivariate regression of claims inflation on benchmark indices by peril
- Loss ratio analysis by cover type
- Seasonality investigations
- Inflation forecast for 2025
- Inflation index for Comprehensive and Third Party Fire & Theft covers
- Final report to be presented to the Malaysian market in Q4

Next Steps

Questions to the Audience

- Recent trends and current topics?
- Which inflation metrics and trend analyses are you using/interested in?
- What other factors should we allow for in the analysis?
- Which outputs would be most helpful?
- What are your views on impact of weather/climate change on claims experience?
- Do you know a suitable medical inflation/care cost index?

Contact Details

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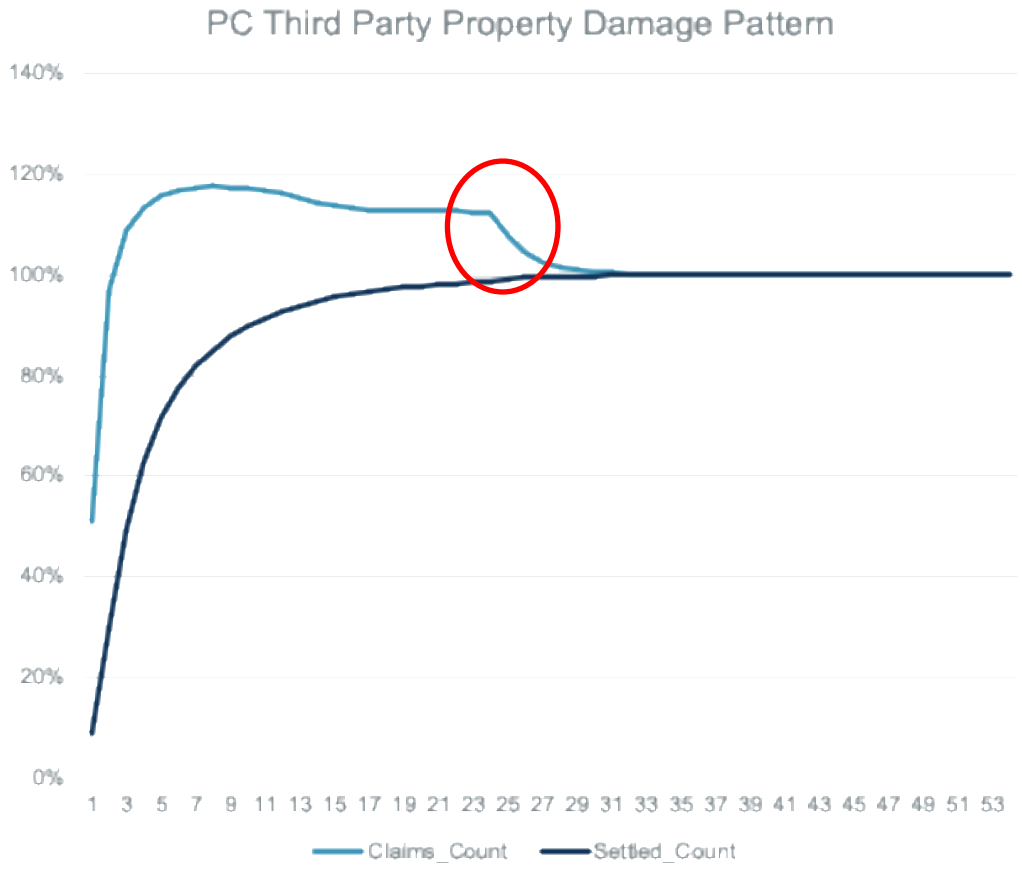
Appendix

Appendix – Data Definitions

- Legal Expenses are excluded from the data analysed
- All analysis and results are in MYR
- Projected Severity = Ultimate Claim Amounts/Ultimate Claim Counts
- Projected Frequency = Ultimate Claim Counts/Earned Vehicle Years
- Projections carried out on an accident quarter by development quarter basis
- Vehicle years relate only to cover types that are relevant for the type of loss. For example, BI contains all vehicle years, whereas OD only contains vehicle years relating to Comprehensive policies
- Counts and amounts have been projected to ultimate using the chain ladder method. We have done this using incurred, paid, reported and settled data. E.g. Projected Severity on an incurred graph = (Ultimate Claim Amounts using Incurred Amounts Chain Ladder)/(Ultimate Claim Counts using Reported Counts Chain Ladder)
- BI Excess analysis for PC was performed using individual claims development data. Any amount in excess of MYR 0.5m for an individual claim was included in the large BI triangles. The first MYR 0.5m was retained in the attritional triangle (BI Capped) and attritional ultimate amounts were projected separately.

Appendix – Legal Considerations

- There is a 6-year statute of limitations for motor claims in Malaysia under the Limitation Act 1953.
- Under Section 6(1)(a) of the Limitation Act 1953, actions founded in tort (including motor vehicle accident claims based on negligence) must be brought within 6 years from the date on which the cause of action accrued.
- The drop in open non-nil claim can be clearly seen from development quarter 24 onwards (red circle in the graph).



Appendix – Detariffication

- Detariffication of motor insurance in Malaysia started in July 2017. Since the implementation of de-tariffication in July 2017, insurance companies now consider various additional other factors to determine car insurance premium.
- Before July 2017, the premium rates for car insurance in Malaysia were generally the same (based on the value of your vehicle and its engine capacity) across all insurance providers, as the premium rates were tariffed by Bank Negara Malaysia (BNM).
- Following the motor tariff liberalisation by BNM, premium rates for Motor Comprehensive and Motor Third Party, Fire and Theft products are determined by individual insurers and takaful operators.
- This change allowed insurance companies to use risk-based assessment and consider additional factors beyond just vehicle value and engine capacity when determining premiums, such as driver age, gender, driving experience, location, and other risk factors.

Appendix – Treatment of nil claims

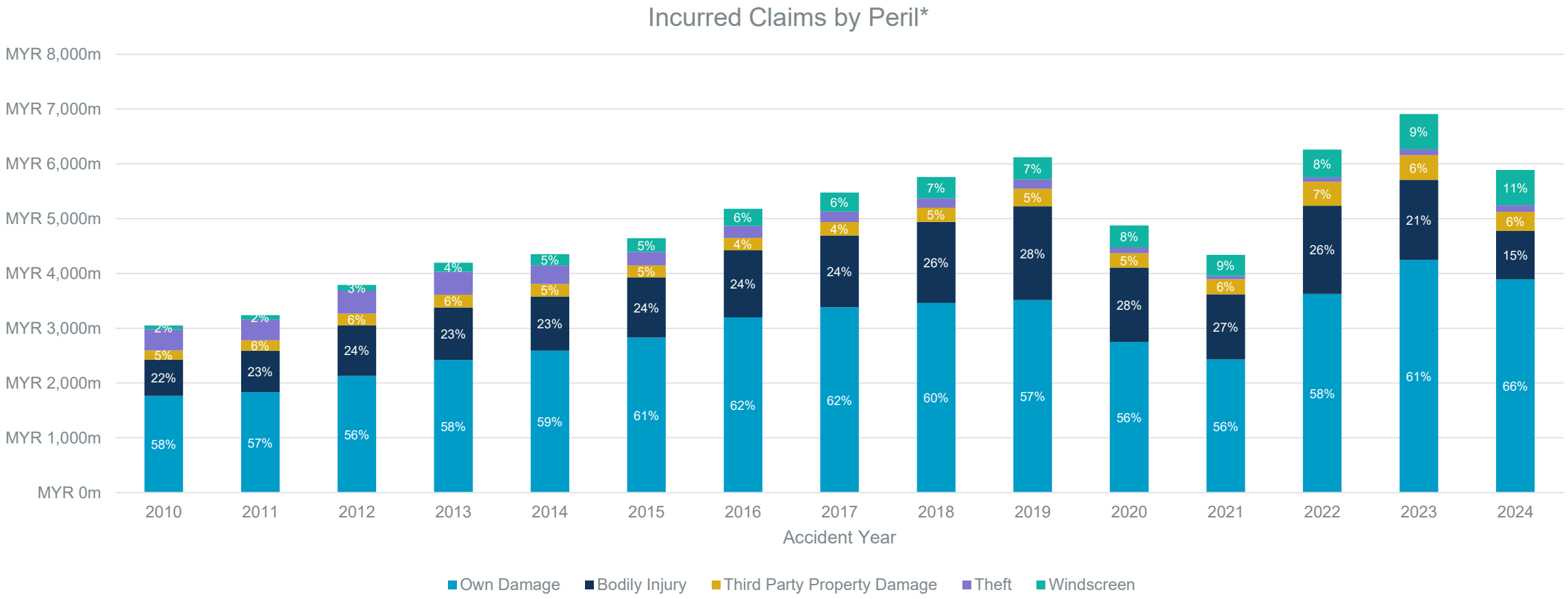
Claims which eventually settle as nil are included in reported counts for those development quarters for which they have a non-nil incurred amount. Note that “CLAIMS_CNT” signifies reported counts in the below examples.

Scenario	CLAIMS_KEY	ACC_YEAR	ACC_QTR	DEV_QTR	BALOS	PAIDLS	INC_AMT	CUM_PAIDLS	CUM_INC_AMT	CLAIMS_CNT	SETTLED_CNT
1	1	2010	4	2	3,000	-	3,000	-	3,000	1	-
	1	2010	4	3	3,000	-	3,000	-	3,000	1	-
	1	2010	4	4	3,000	-	3,000	-	3,000	1	-
	1	2010	4	5	6,000	-	6,000	-	6,000	1	-
	1	2010	4	6	-	-	-	-	-	-	-

Scenario	CLAIMS_KEY	ACC_YEAR	ACC_QTR	DEV_QTR	BALOS	PAIDLS	INC_AMT	CUM_PAIDLS	CUM_INC_AMT	CLAIMS_CNT	SETTLED_CNT
2	2	2010	4	2	3,000	500	3,500	500	3,500	1	-
	2	2010	4	3	3,000	(500)	2,500	-	3,000	1	-
	2	2010	4	4	3,000	-	3,000	-	3,000	1	-
	2	2010	4	5	6,000	-	6,000	-	6,000	1	-
	2	2010	4	6	-	-	-	-	-	-	-

Appendix – Reported Claims Cost by Peril

Largest perils are Own Damage and Bodily Injury



* Full year 2024 claims and exposure extrapolated from Q2 2024 data.

Questions

Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.