



2019 CAS RPM Seminar Auto Trends

Kevin Hughes, Actuarial Consultant

SERVE | ADD VALUE | INNOVATE



Loss Trends

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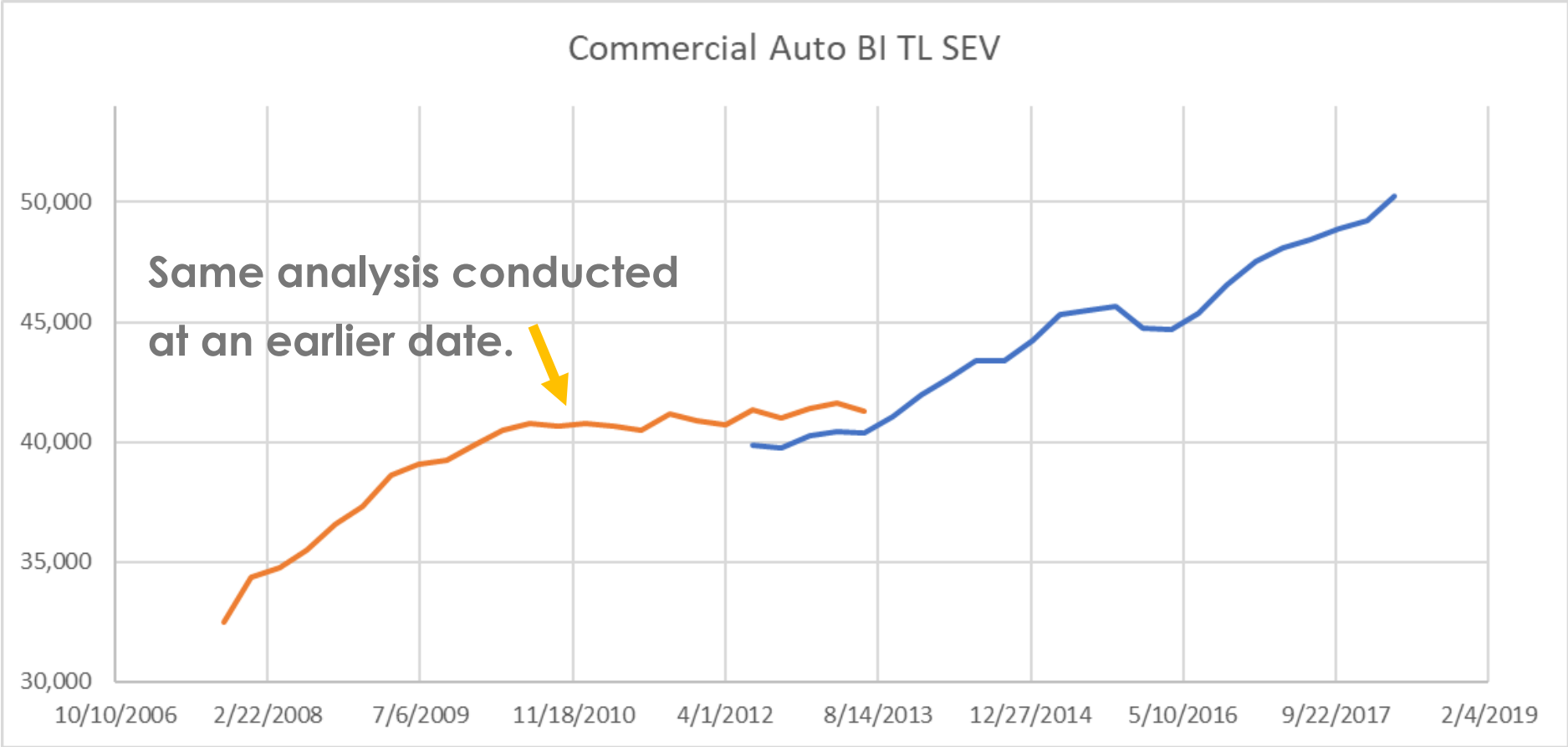
Historical Severity and Frequency Trends

Data Characteristics

- **Calendar Year Paid Loss Trends**
- **Total Limits, ALAE included**
- **BI and PD Separately**
- **Severity and Frequency Separately**
- **Multiple Trend Analyses combined for a broader timeframe.**

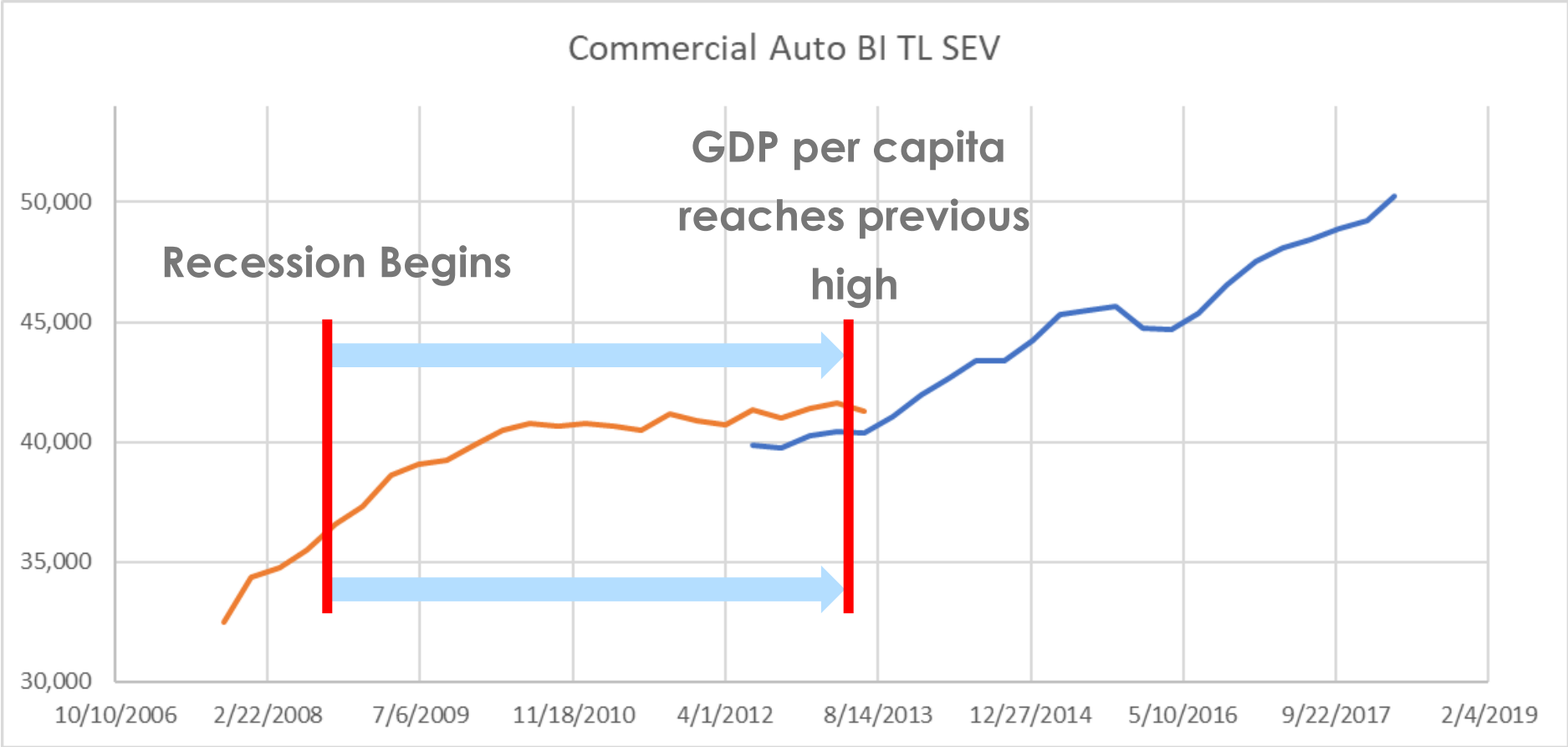


Historical Severity and Frequency Trends



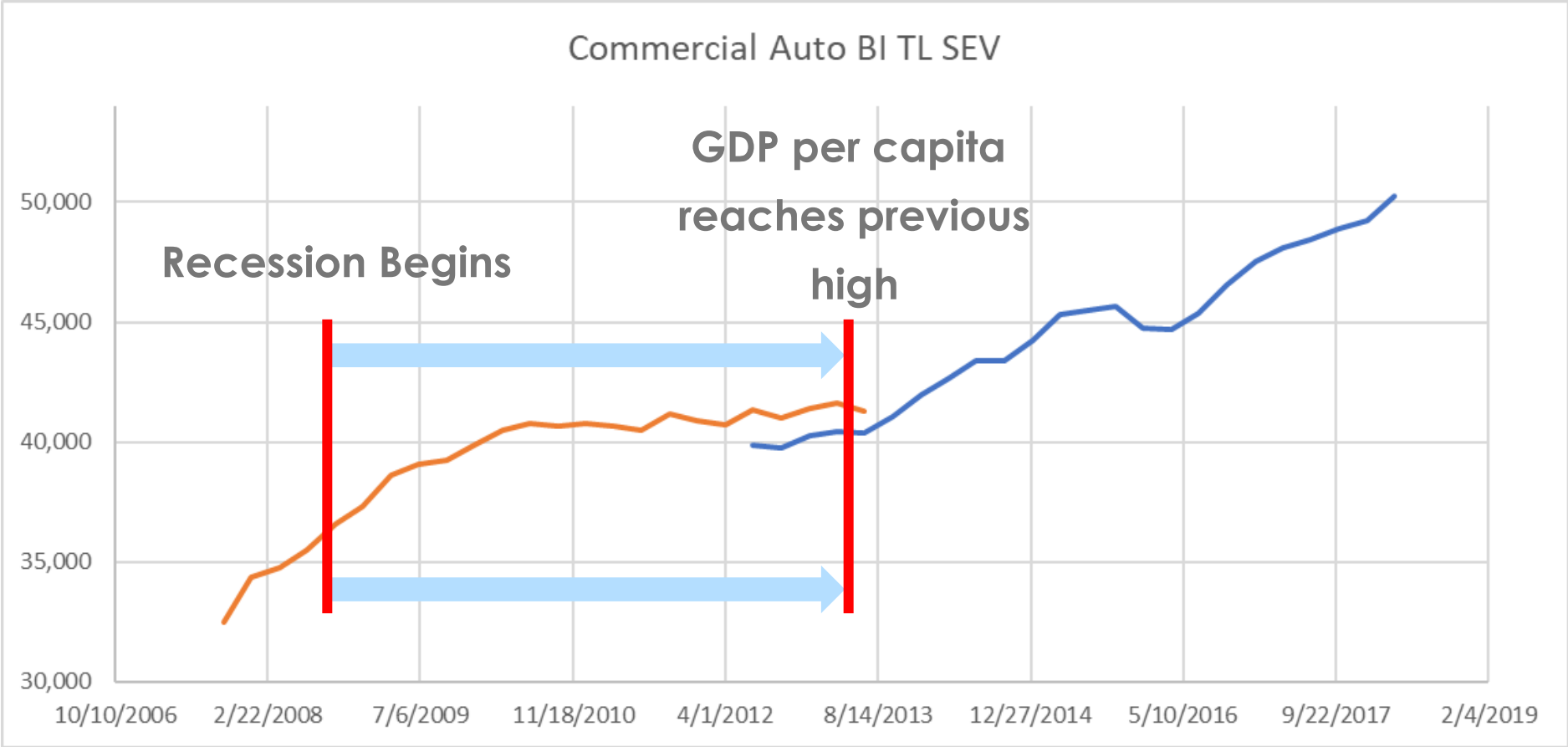


Historical Severity and Frequency Trends





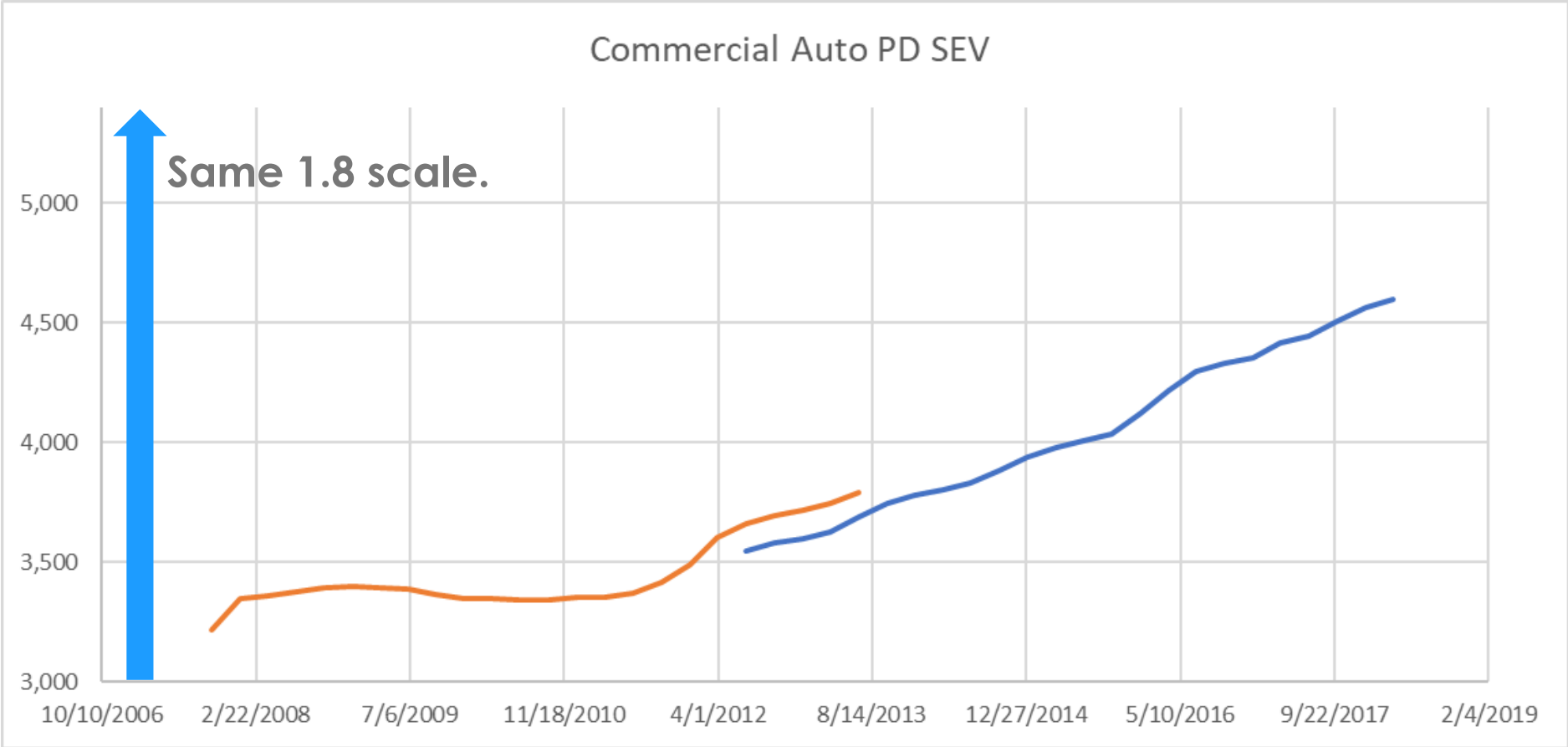
Historical Severity and Frequency Trends



The Great Recession appears to have flattened the BI trend considerably.

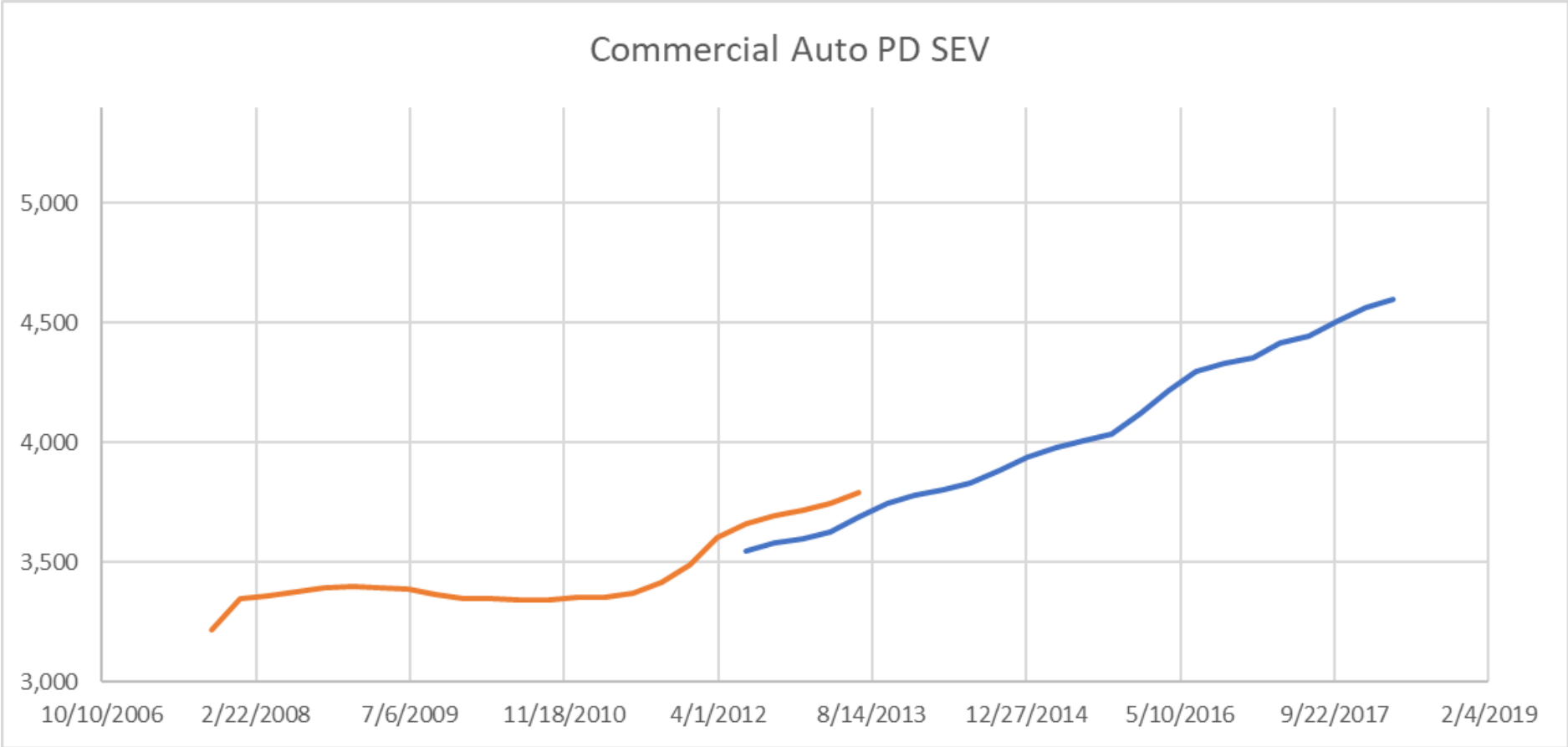


Historical Severity and Frequency Trends



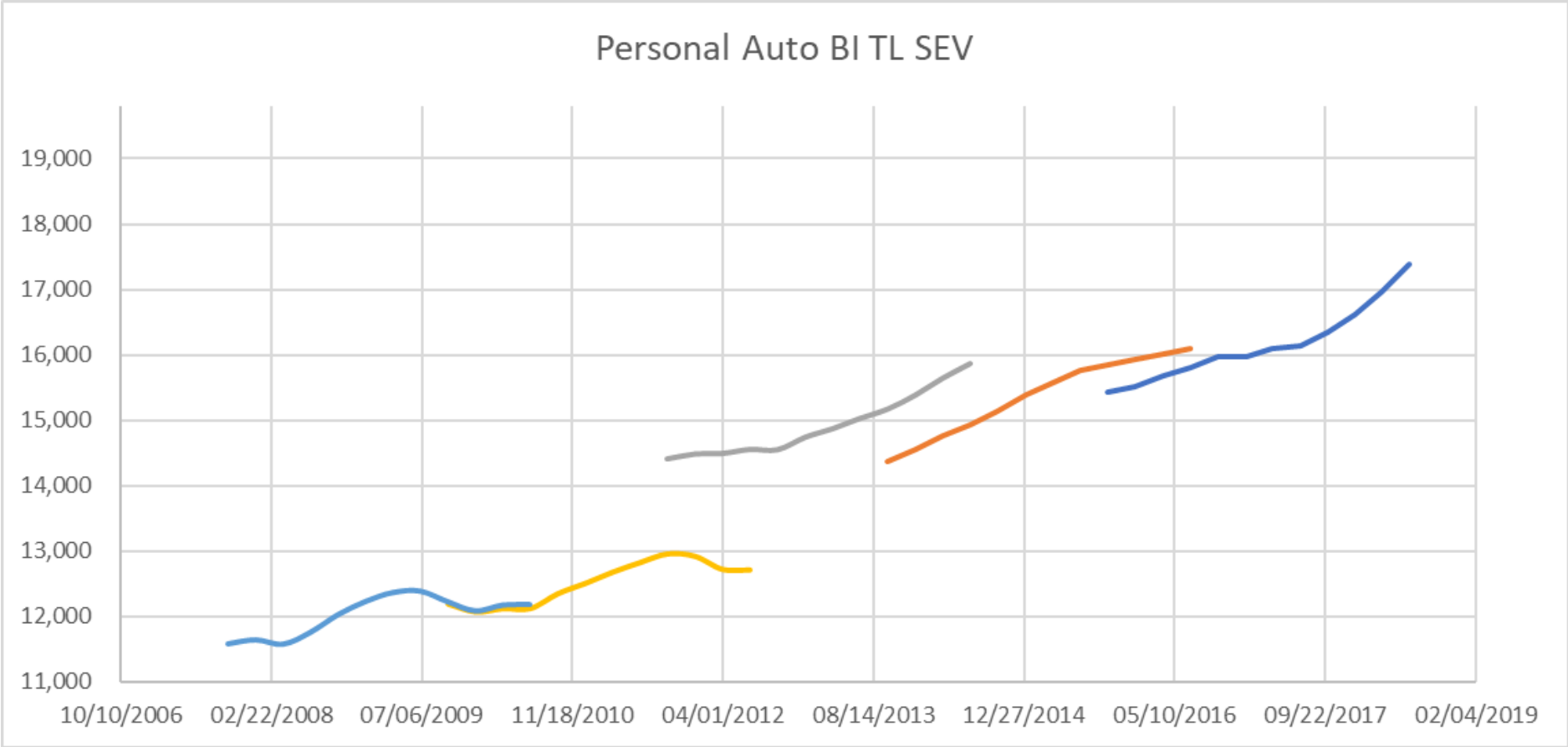


Historical Severity and Frequency Trends



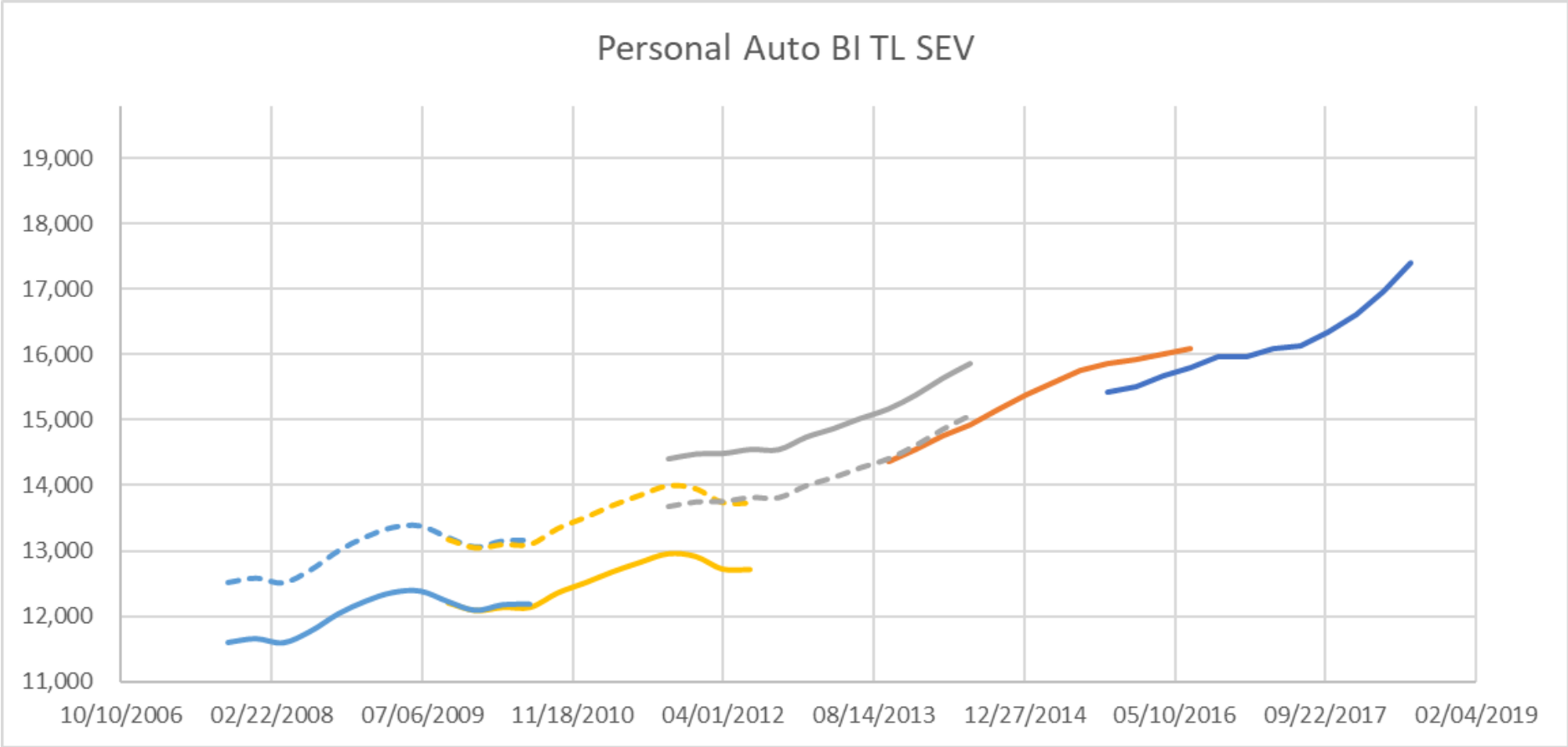


Historical Severity and Frequency Trends



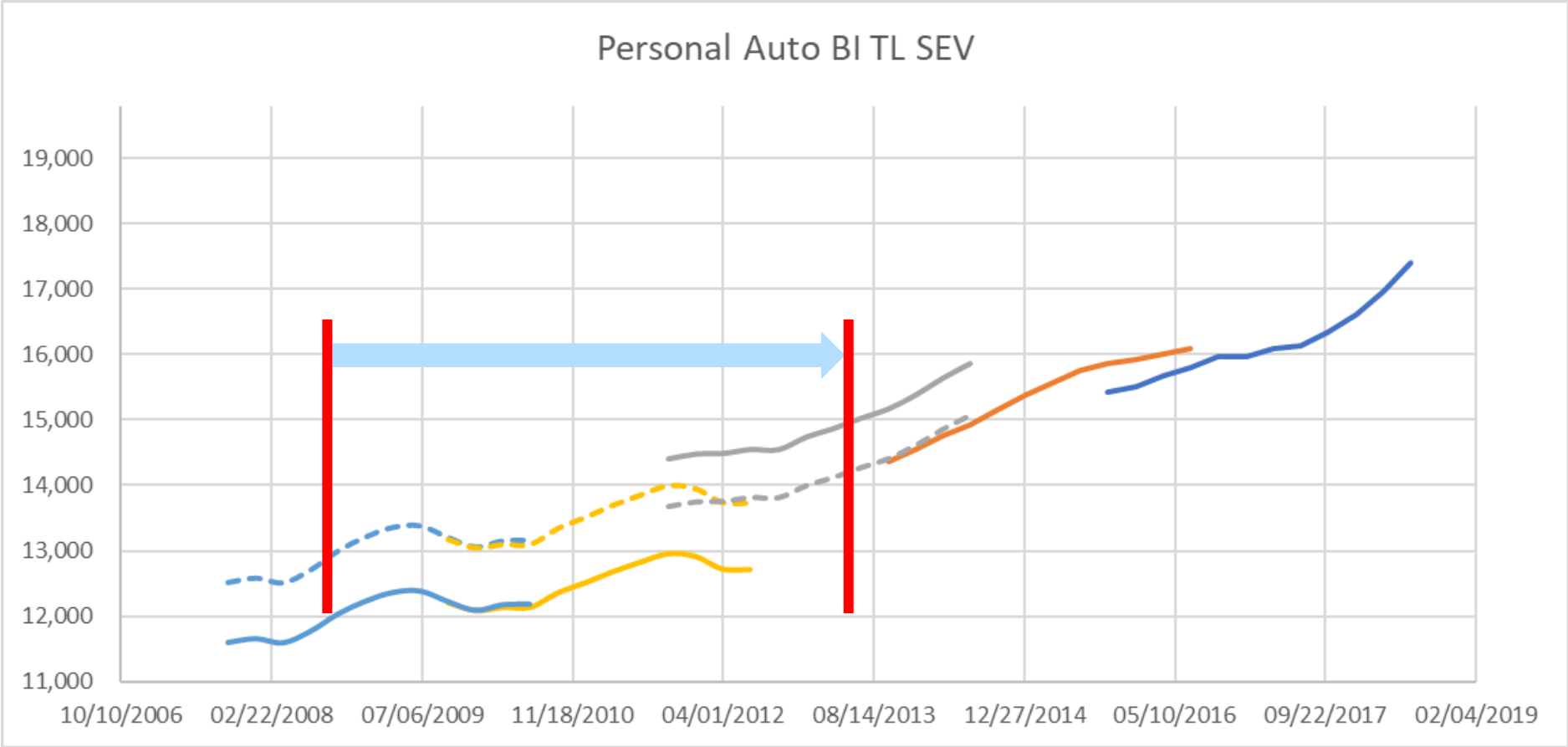


Historical Severity and Frequency Trends



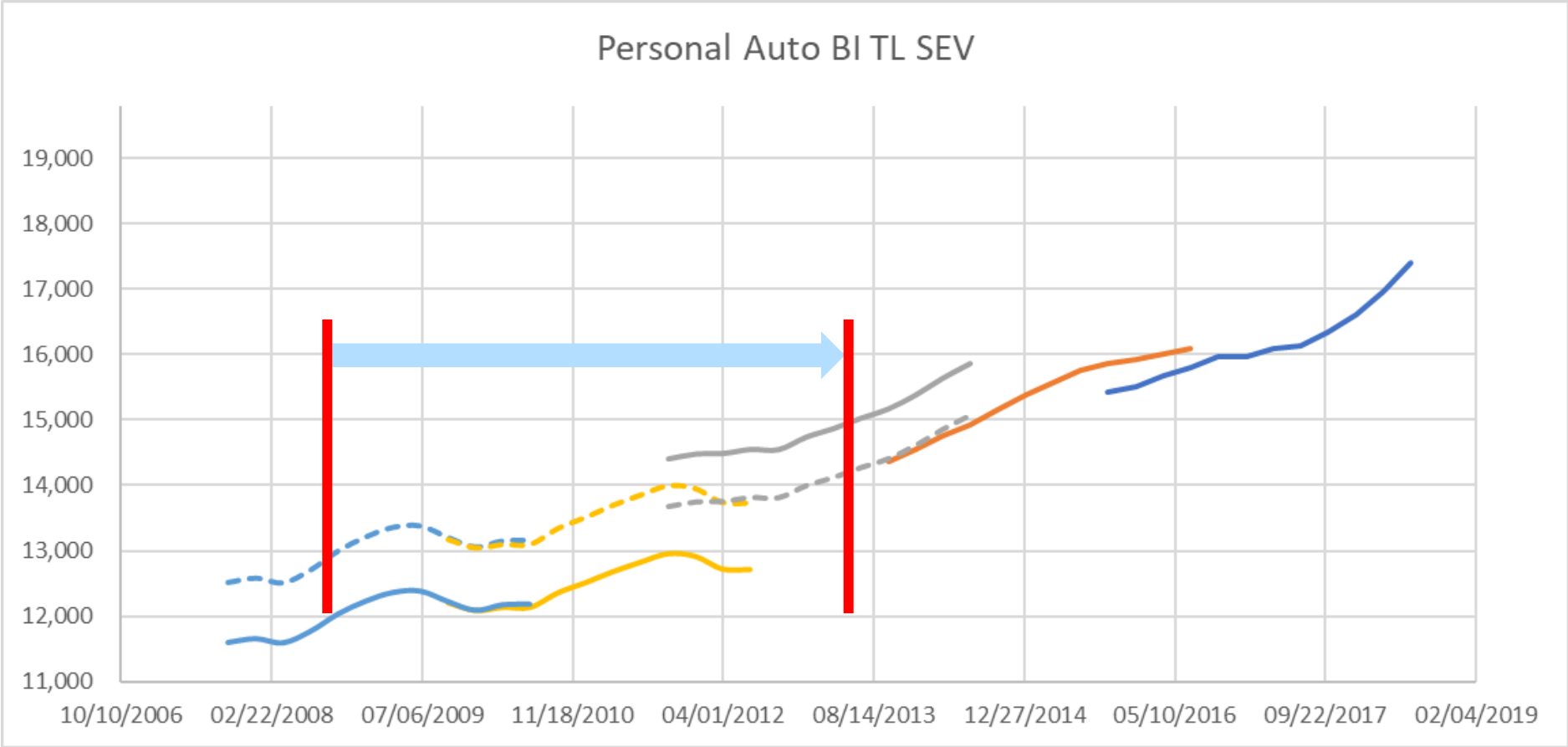


Historical Severity and Frequency Trends





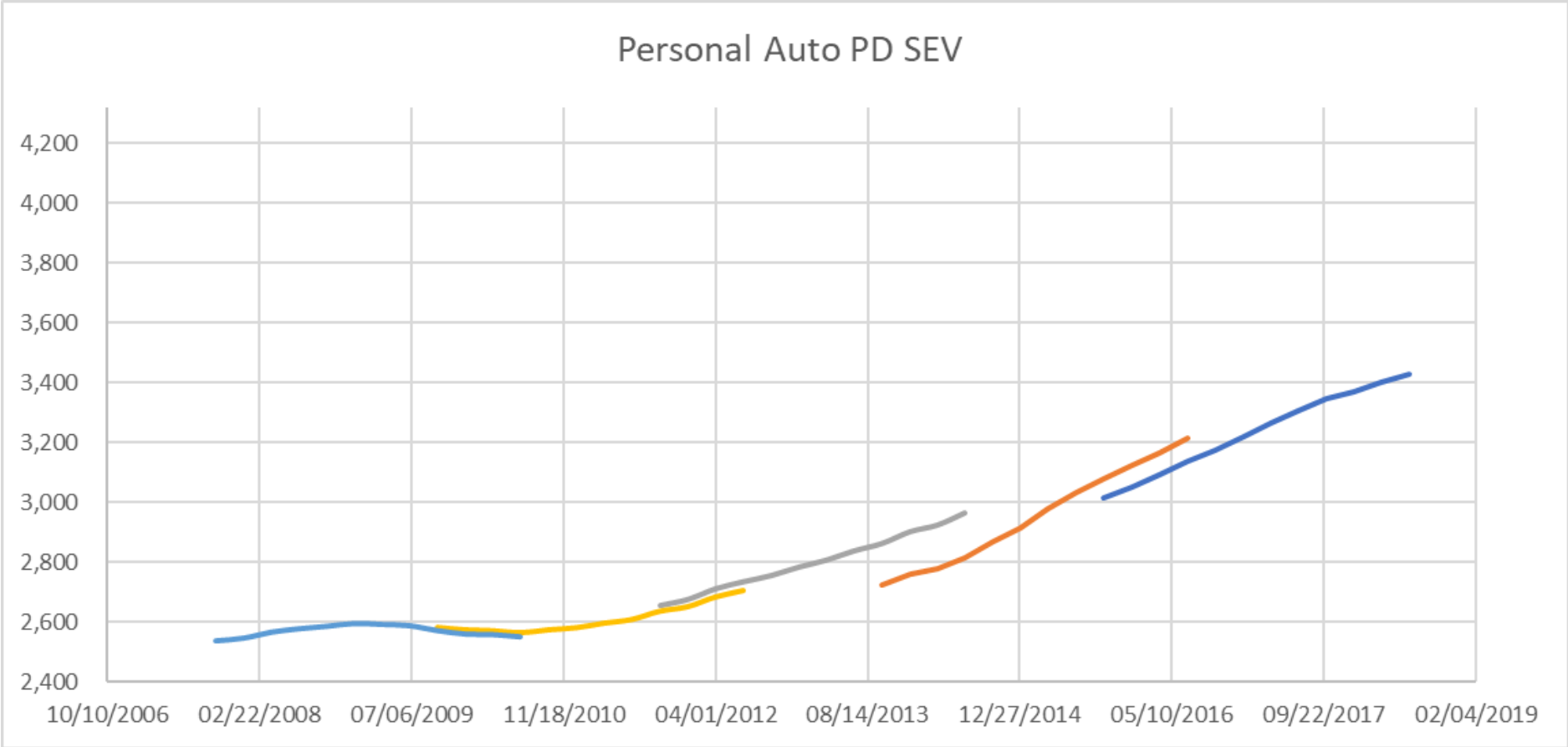
Historical Severity and Frequency Trends



BI Severity Flattening Seems to be mostly a Commercial Auto phenomenon.

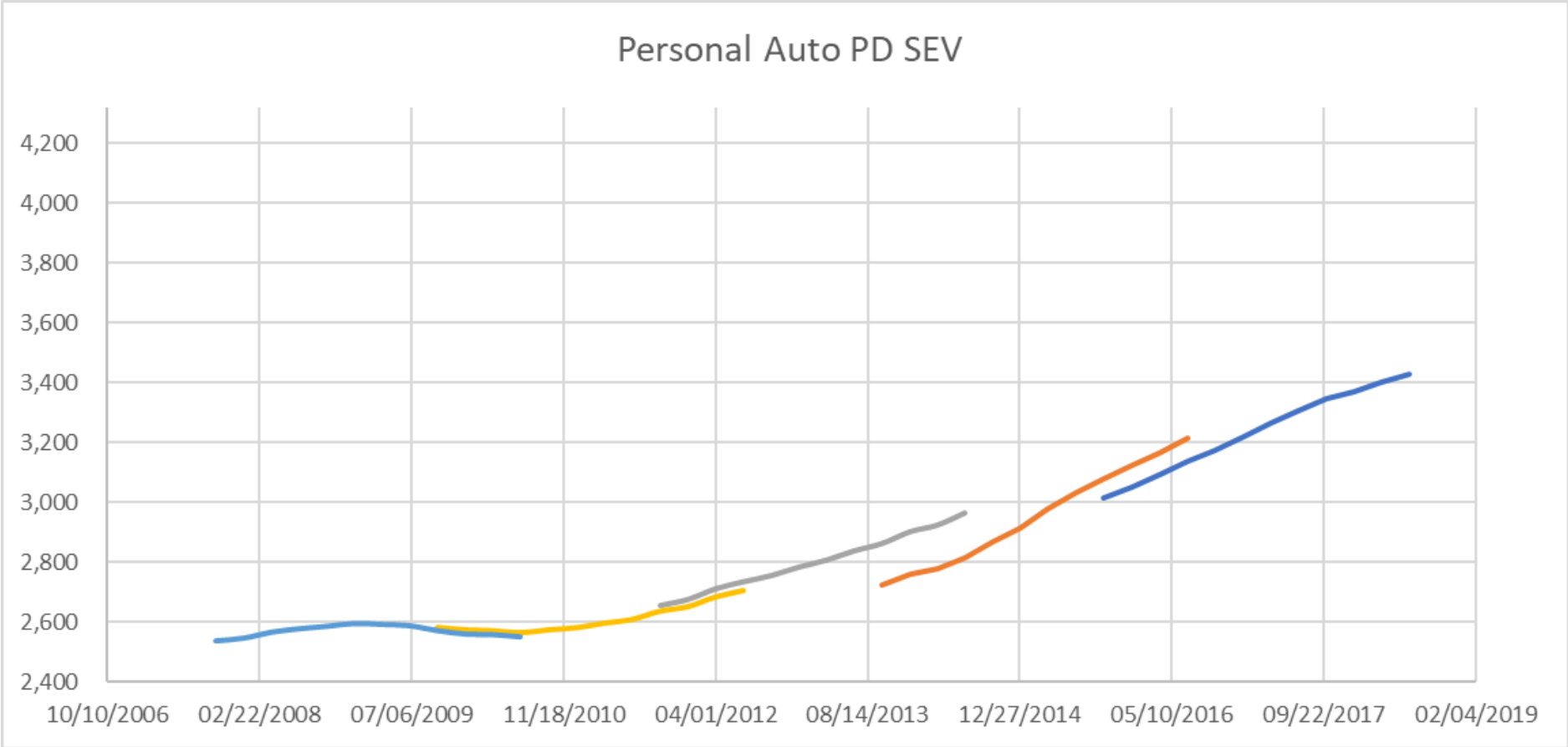


Historical Severity and Frequency Trends





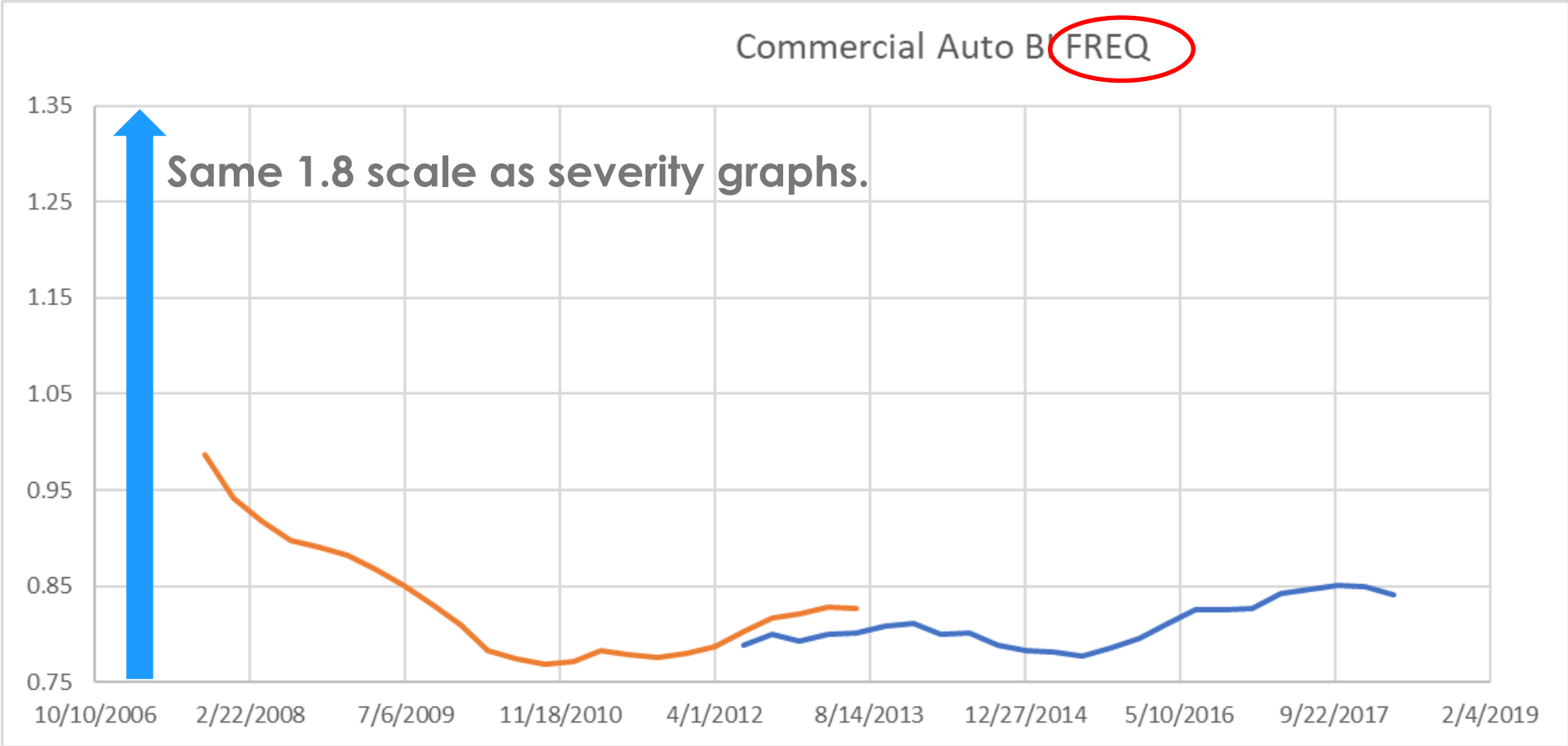
Historical Severity and Frequency Trends



Commercial and Personal Auto PD Severity Trends look remarkably similar.

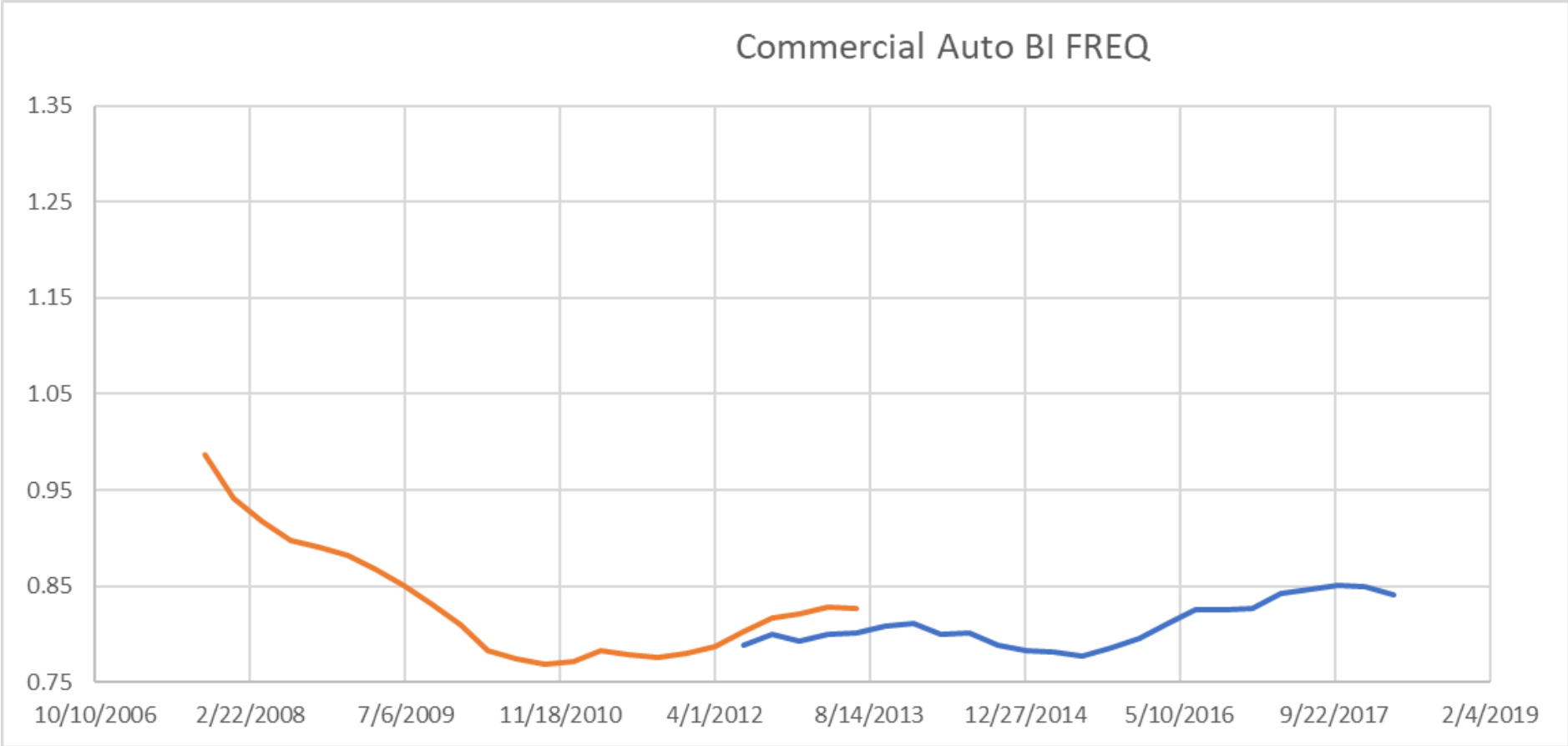


Historical Severity and Frequency Trends





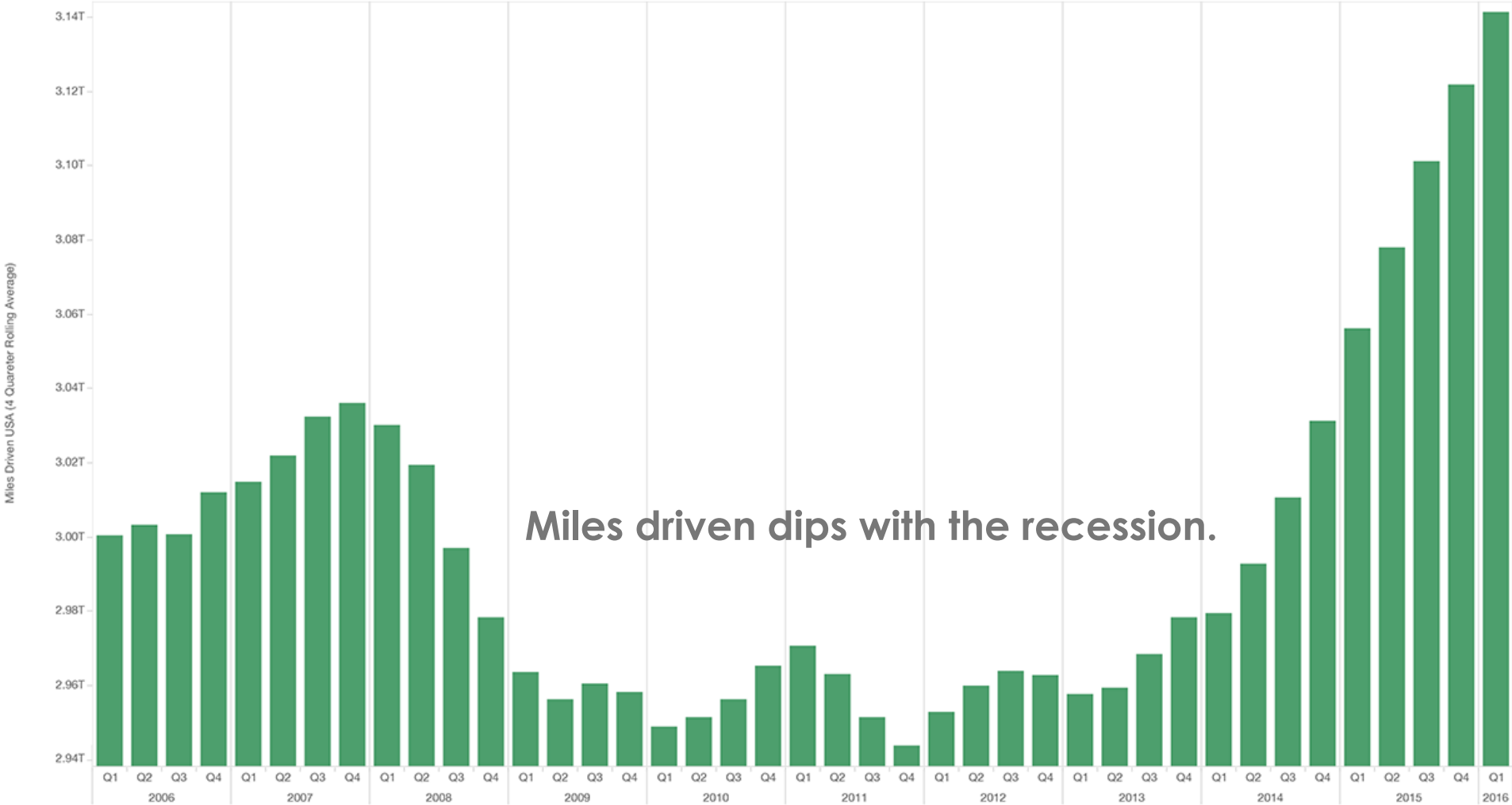
Historical Severity and Frequency Trends





Historical Severity and Frequency Trends

Total Miles Driven (USA)

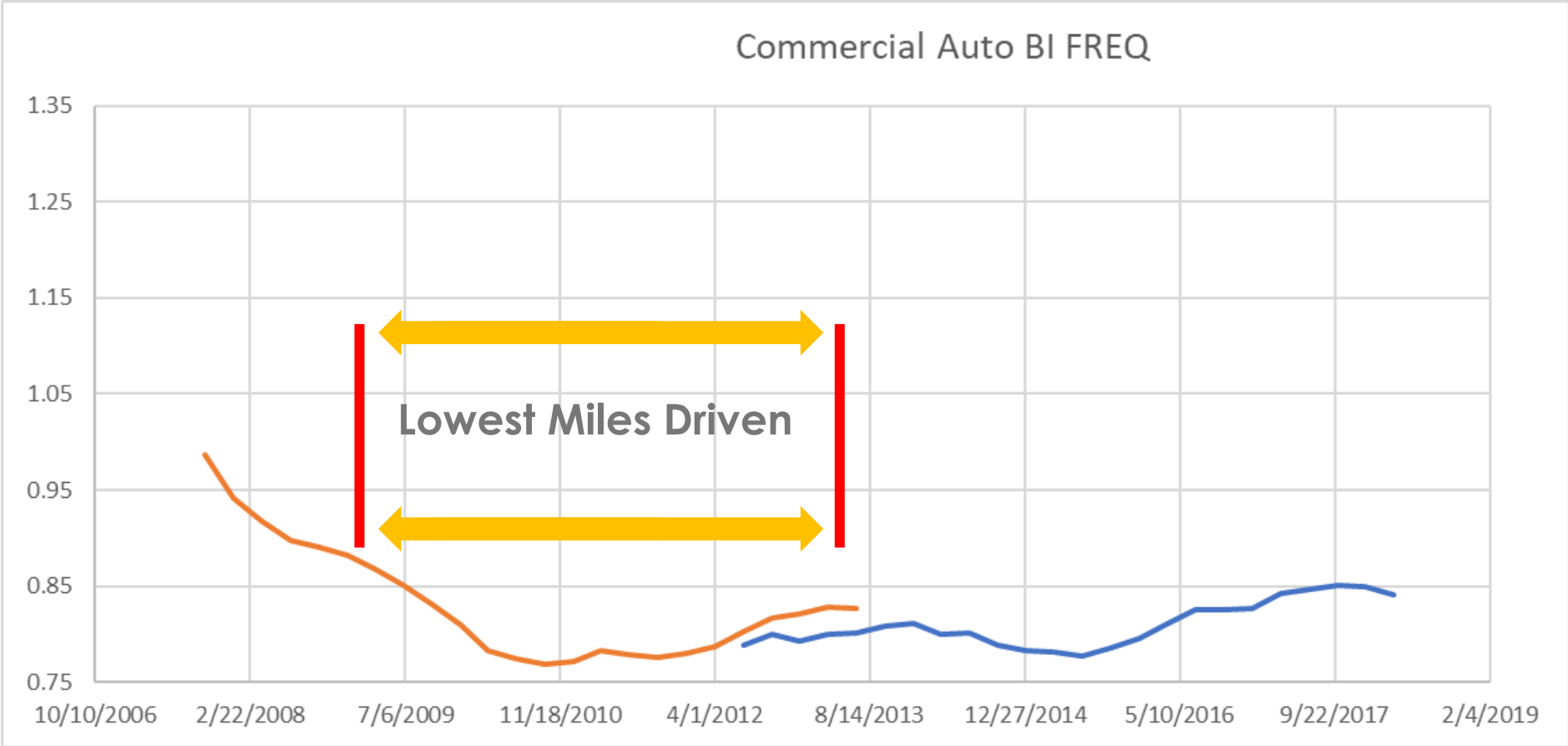


Miles driven dips with the recession.

US Federal High Administration, Total Vehicle Miles Traveled, Moving 4 Quarter Average. Vehicle Miles Driven represented in trillions(T).

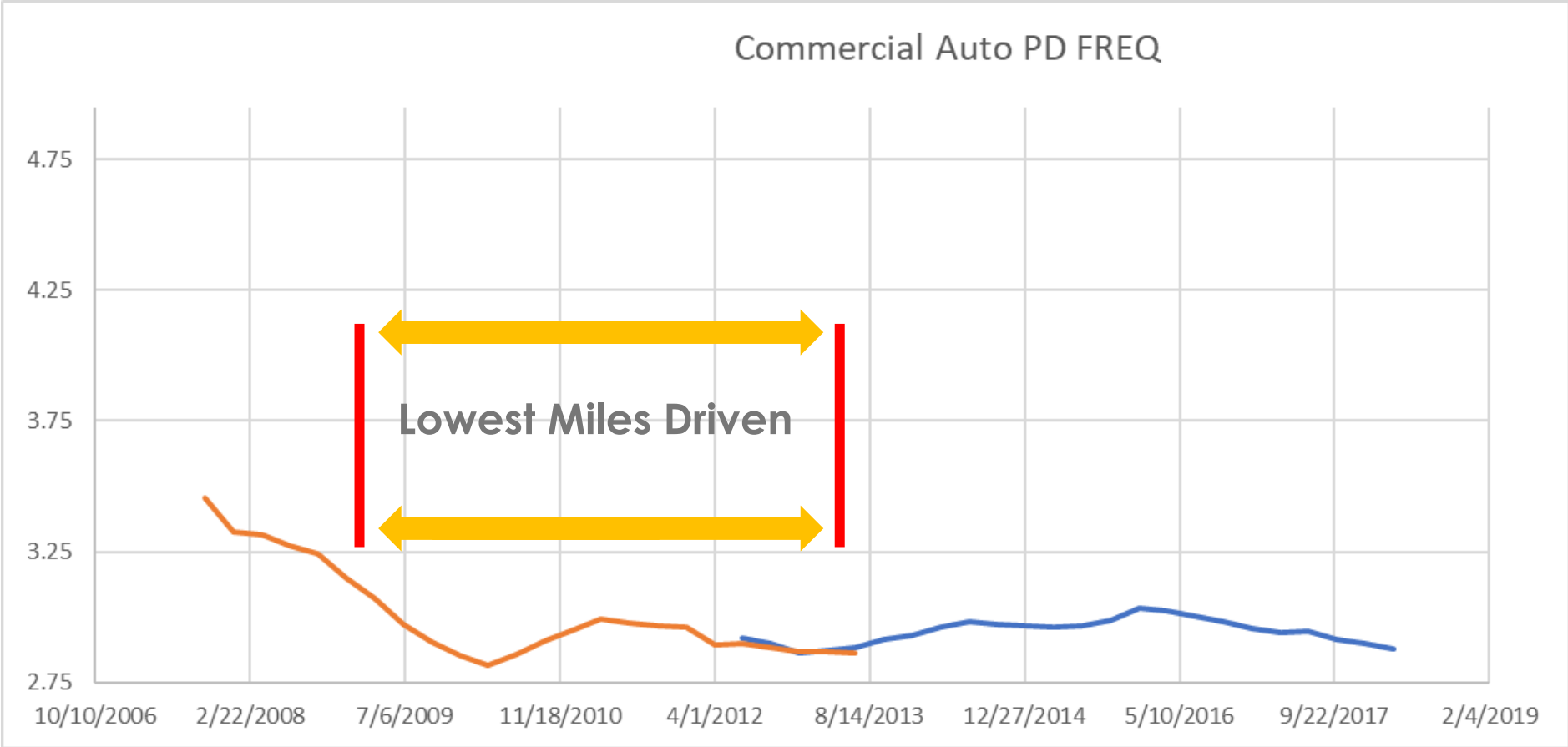


Historical Severity and Frequency Trends



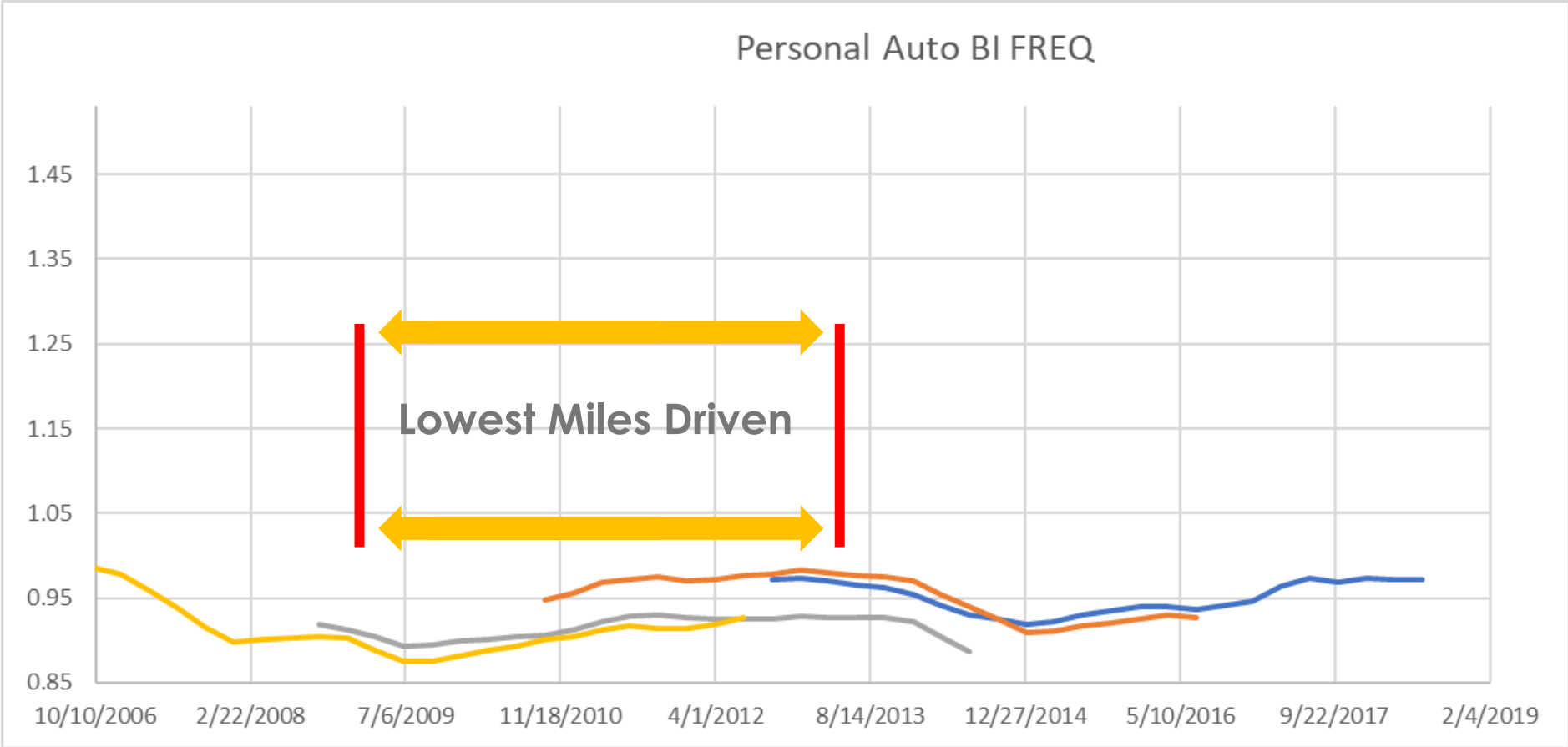


Historical Severity and Frequency Trends



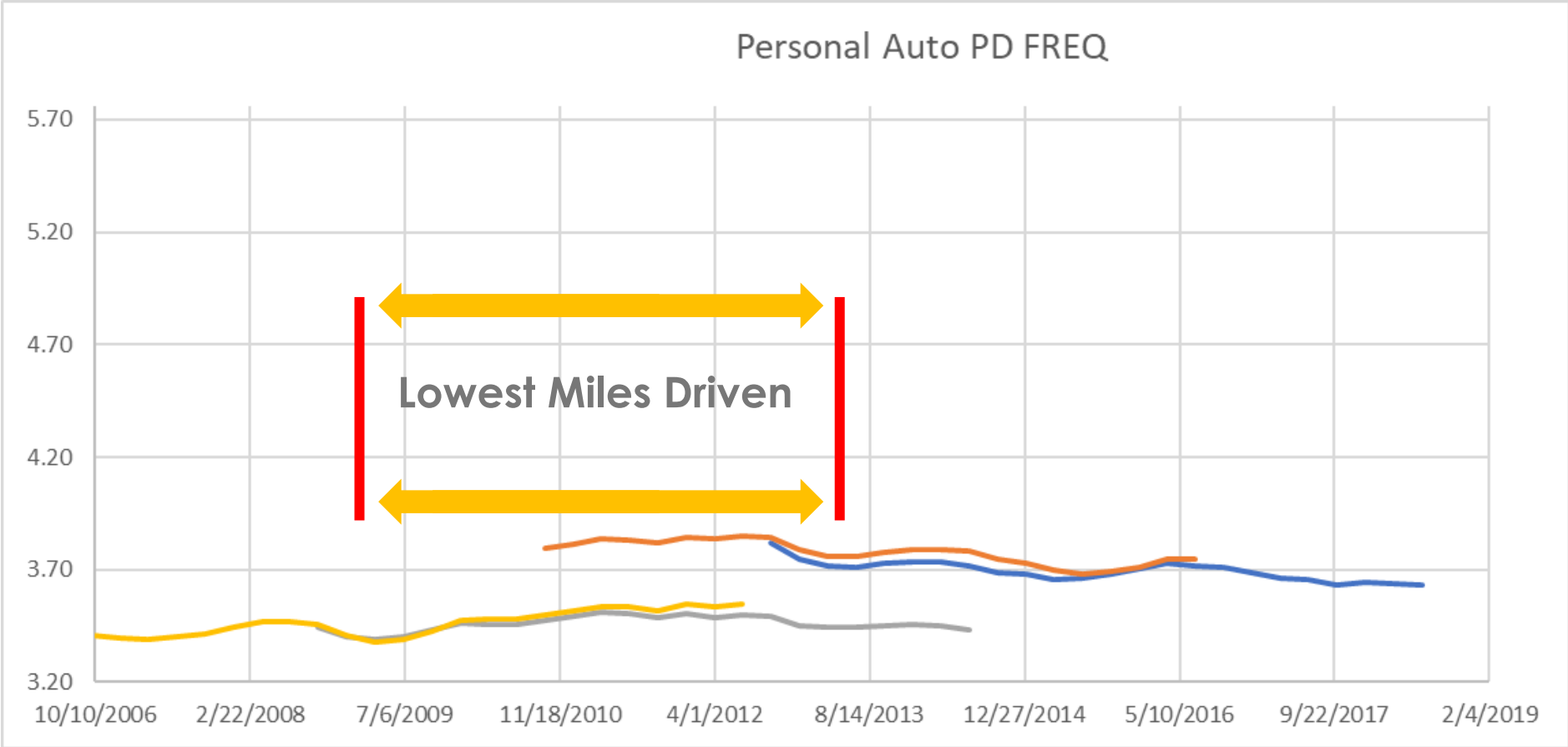


Historical Severity and Frequency Trends



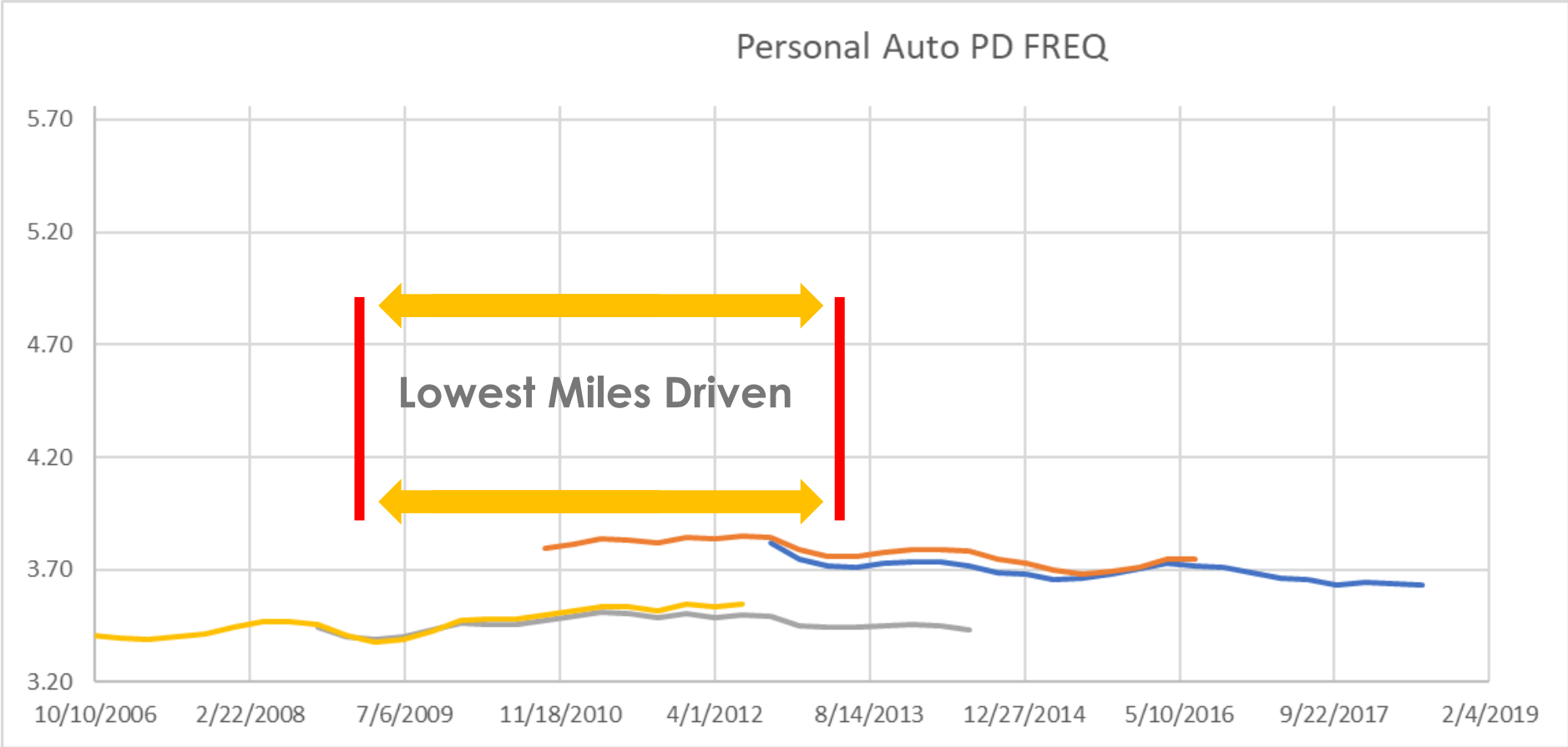


Historical Severity and Frequency Trends





Historical Severity and Frequency Trends



Across the board: Frequency did not rise with miles driven after the Great Recession.



Historical Severity and Frequency Trends

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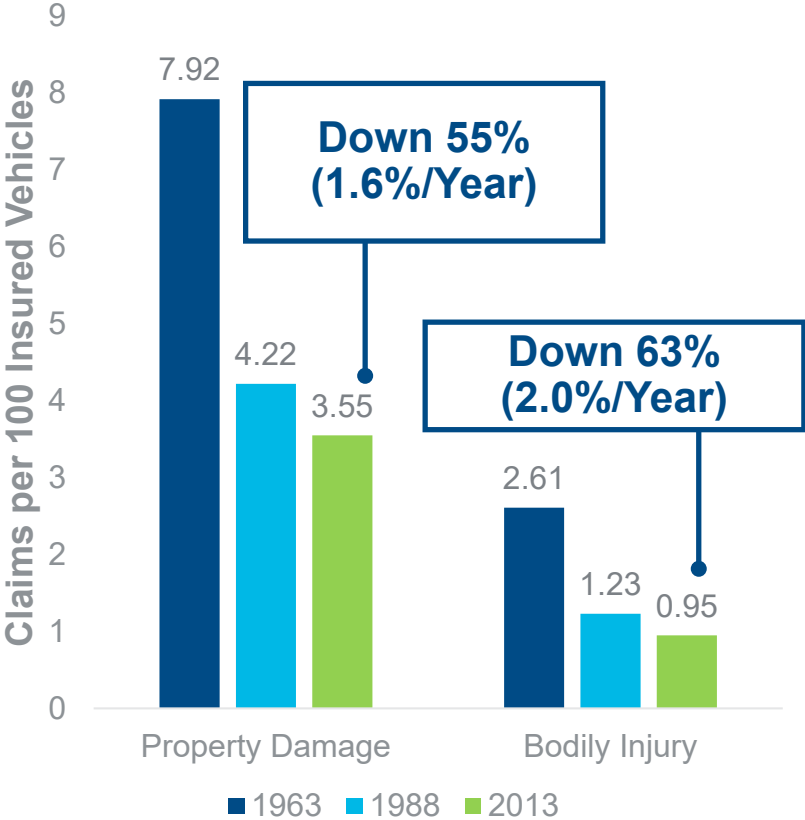
Some ideas why:

- Miles Driven is not Miles Driven Per Vehicle
- Congestion -> Lower Speeds
- New Safety Features



Historical Severity and Frequency Trends

How Often Is There An Accident?

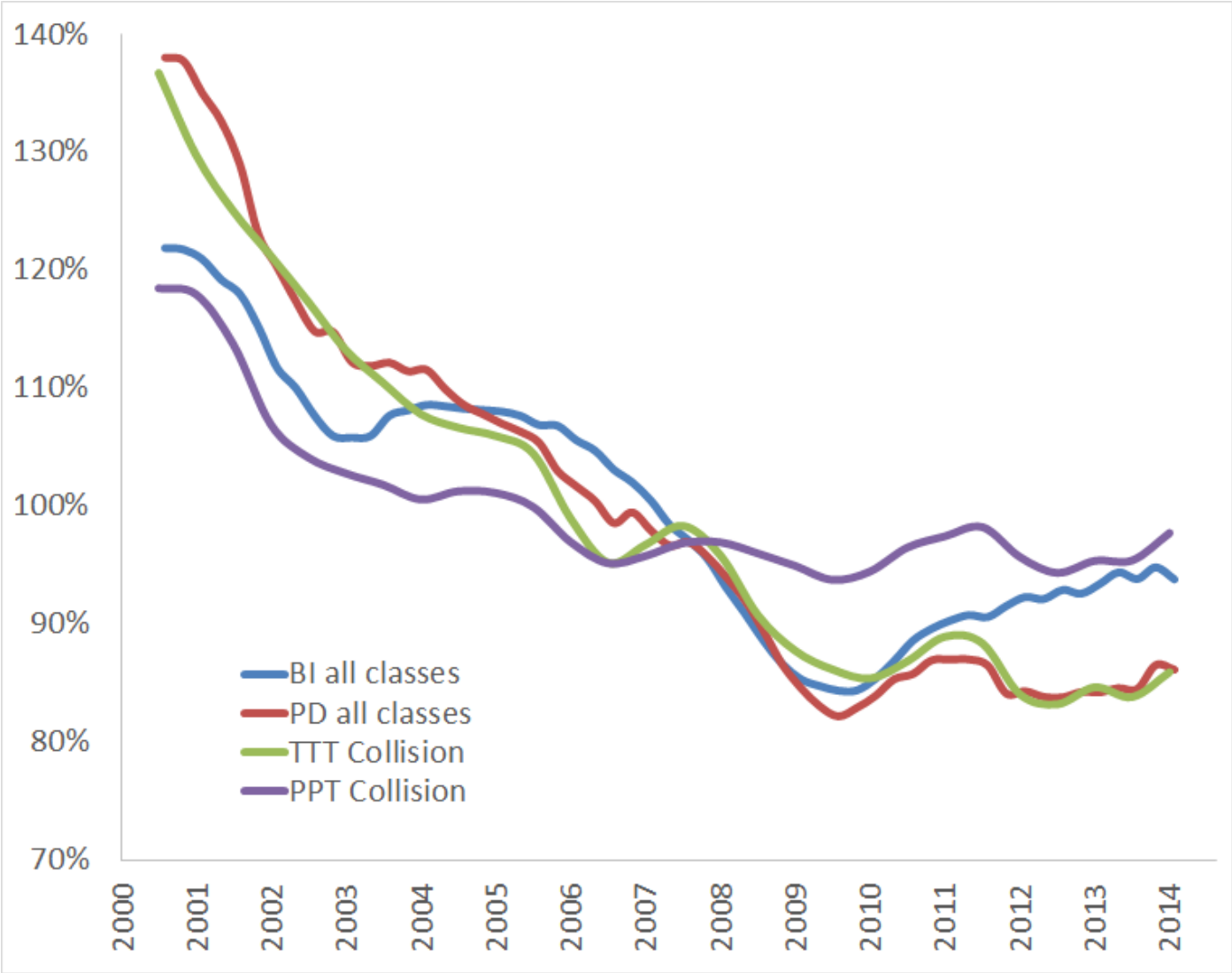


SOURCES: Insurance Institute for Highway Safety, Insurance Services Office, Insurance Information Institute.



Historical Severity and Frequency Trends

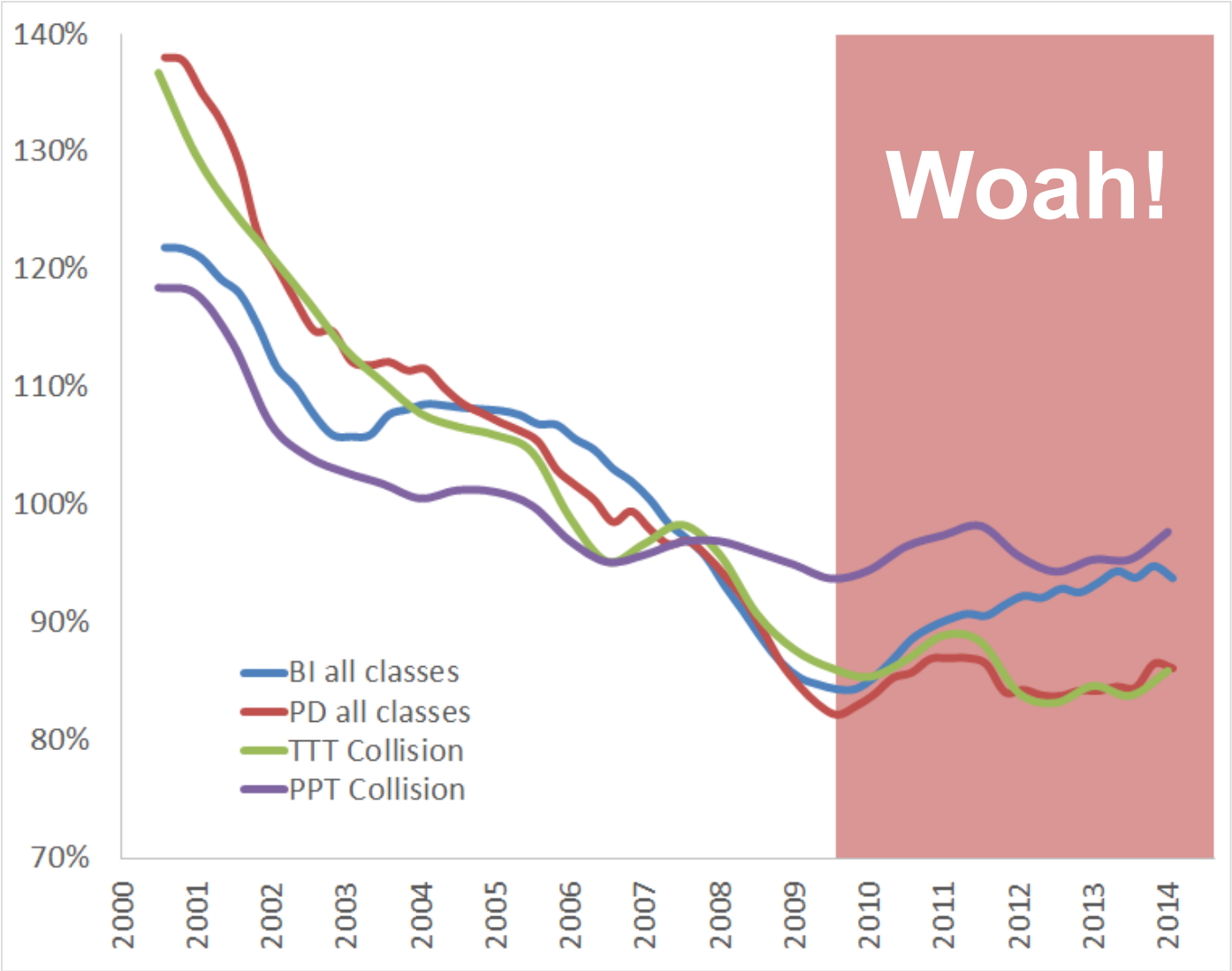
Commercial Auto





Historical Severity and Frequency Trends

Commercial Auto





Loss Development



Historical Incurred Loss Development

Disclaimer

- **Development patterns published by ISO are an average of many companies, whose reserving practices vary widely.**



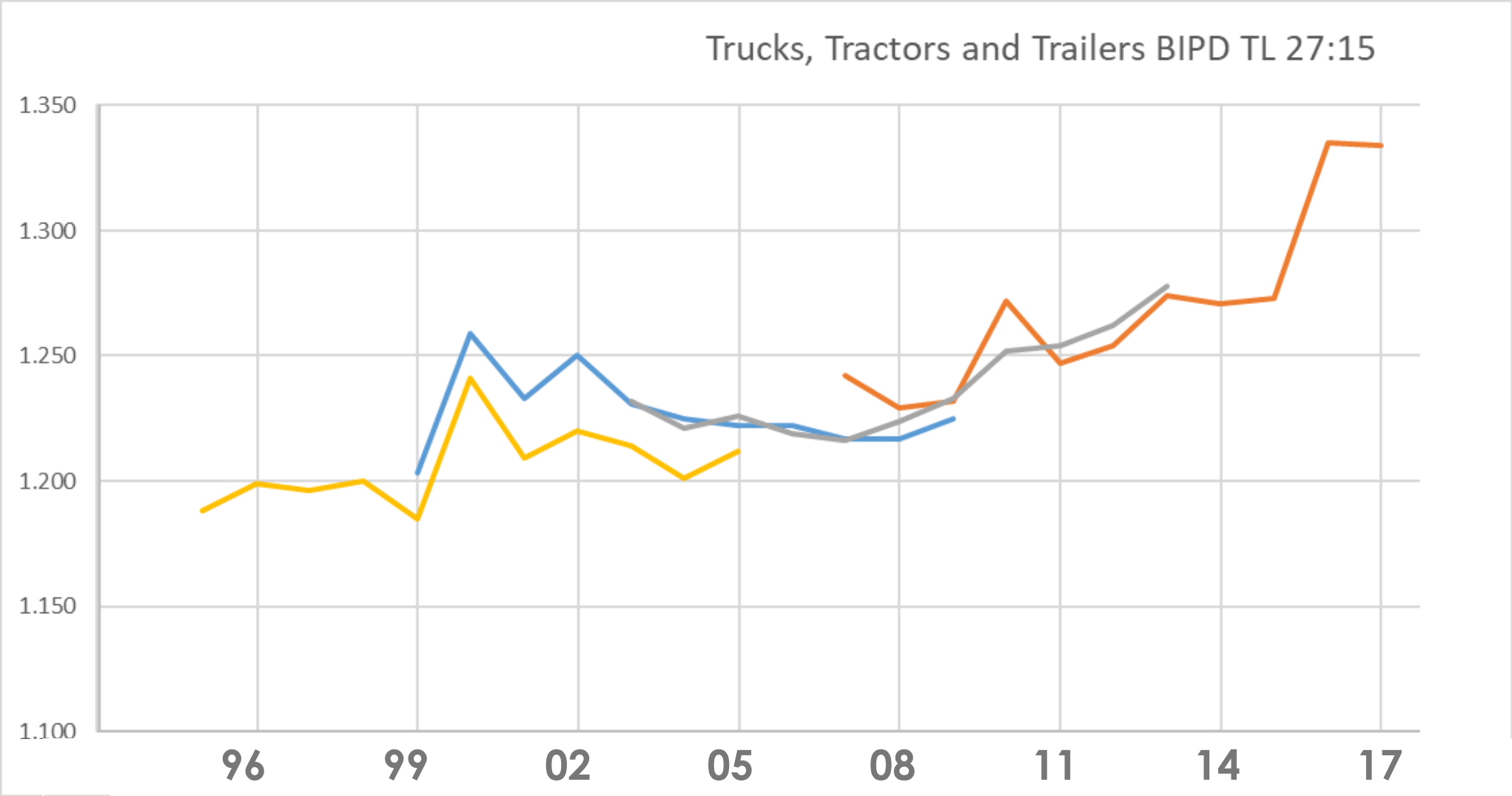
Historical Incurred Loss Development

Data Characteristics

- **Total Limits Liability**
- **Incurred Losses & ALAE**
- **27:15 and 39:27 (First two columns of your typical triangle)**
- **Personal Auto: BI only // Commercial Auto: BIPD**
- **Commercial Auto: Trucks, Tractors and Trailers only**
- **Multiple studies combined to extend timeframe**

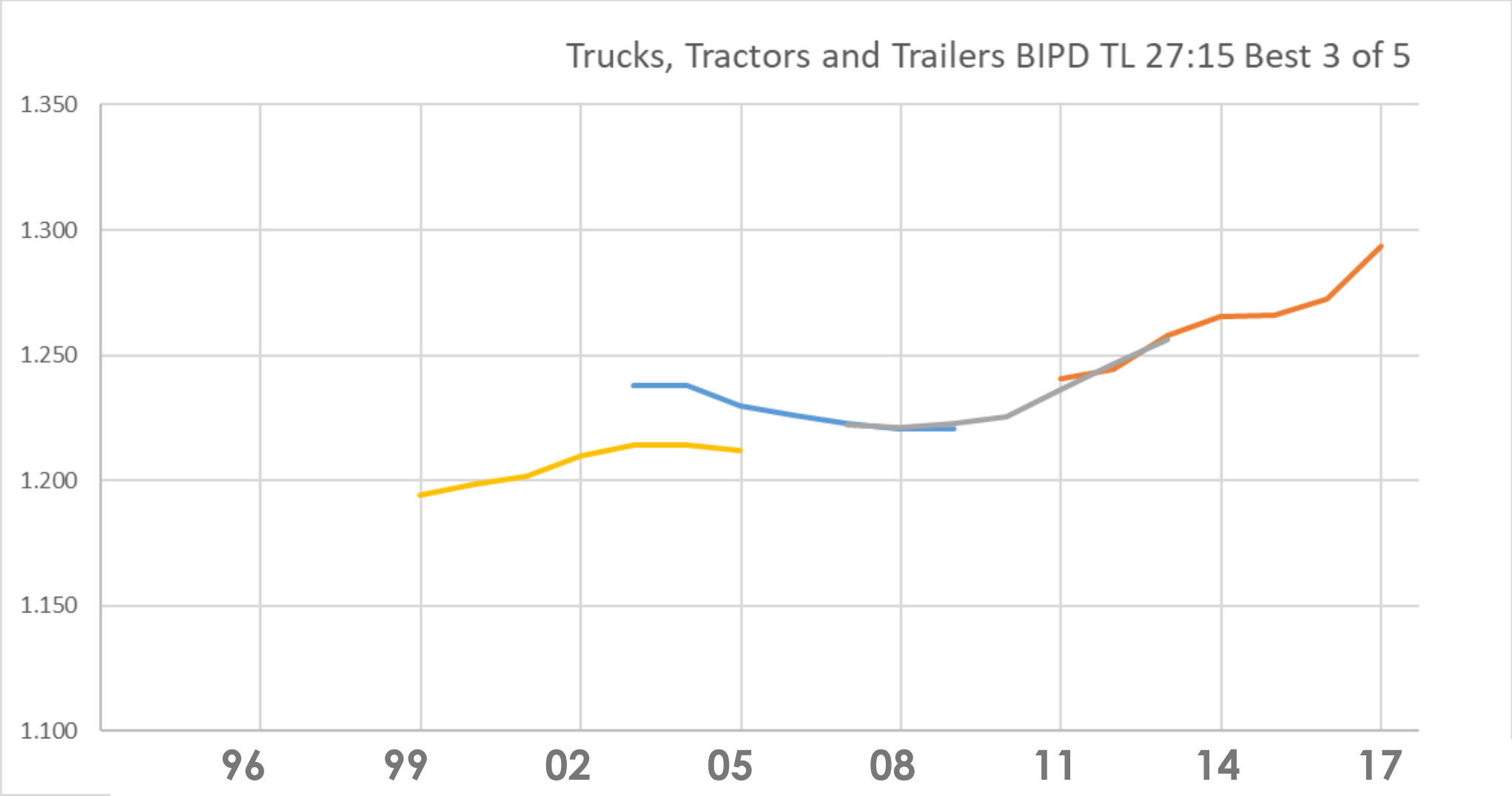


Historical Incurred Loss Development



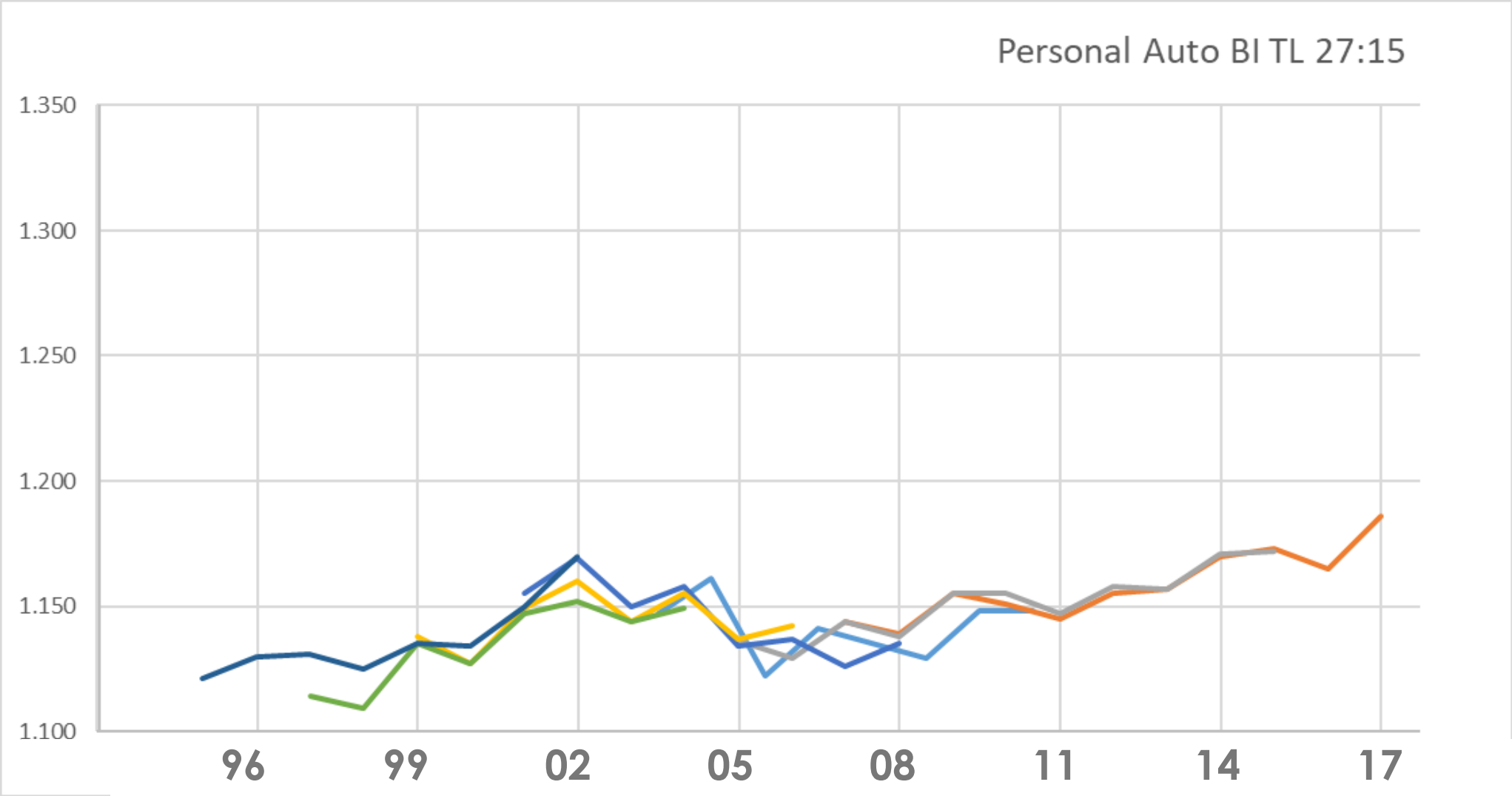


Historical Incurred Loss Development



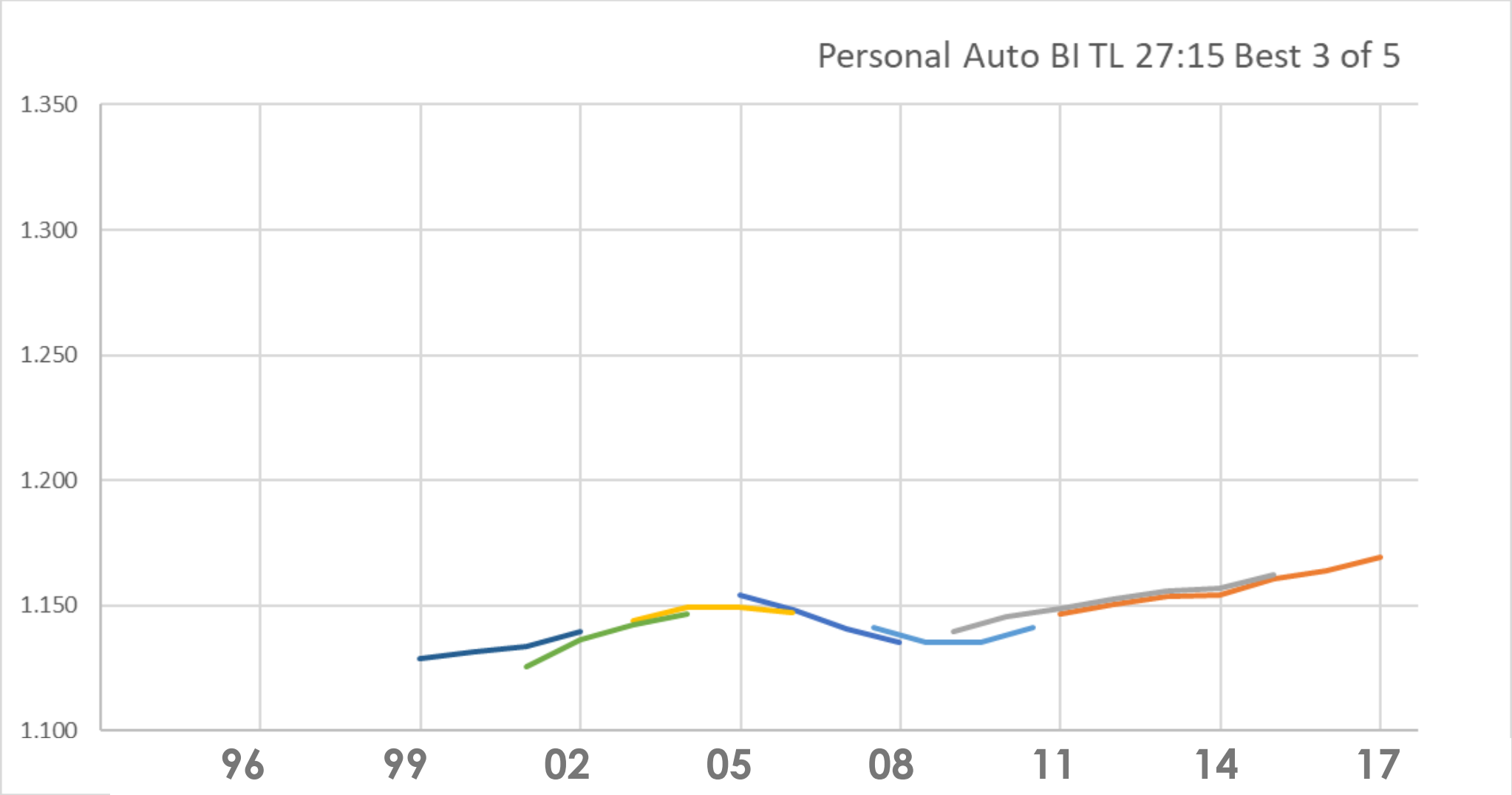


Historical Incurred Loss Development





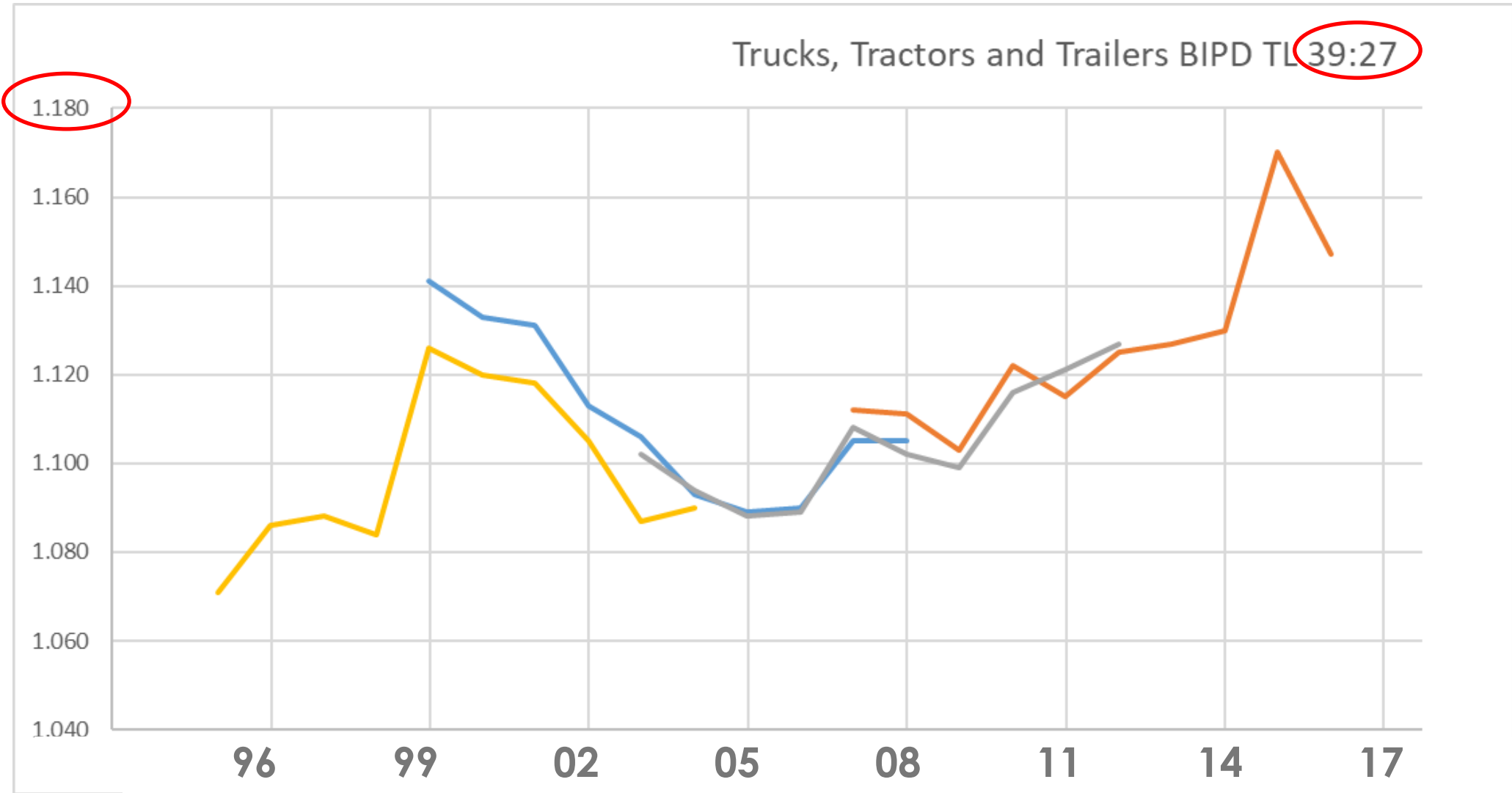
Historical Incurred Loss Development



Accident Year

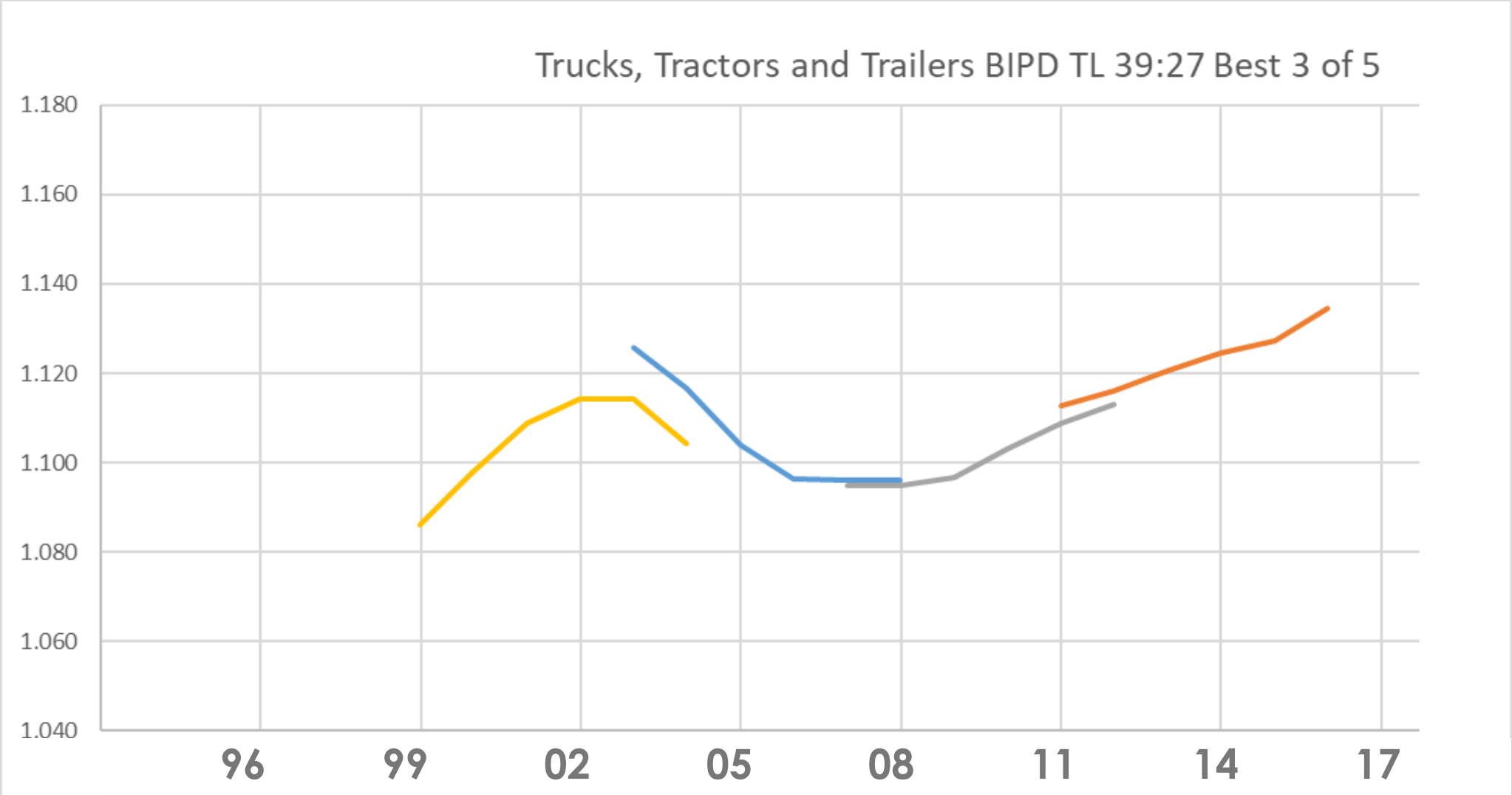


Historical Incurred Loss Development



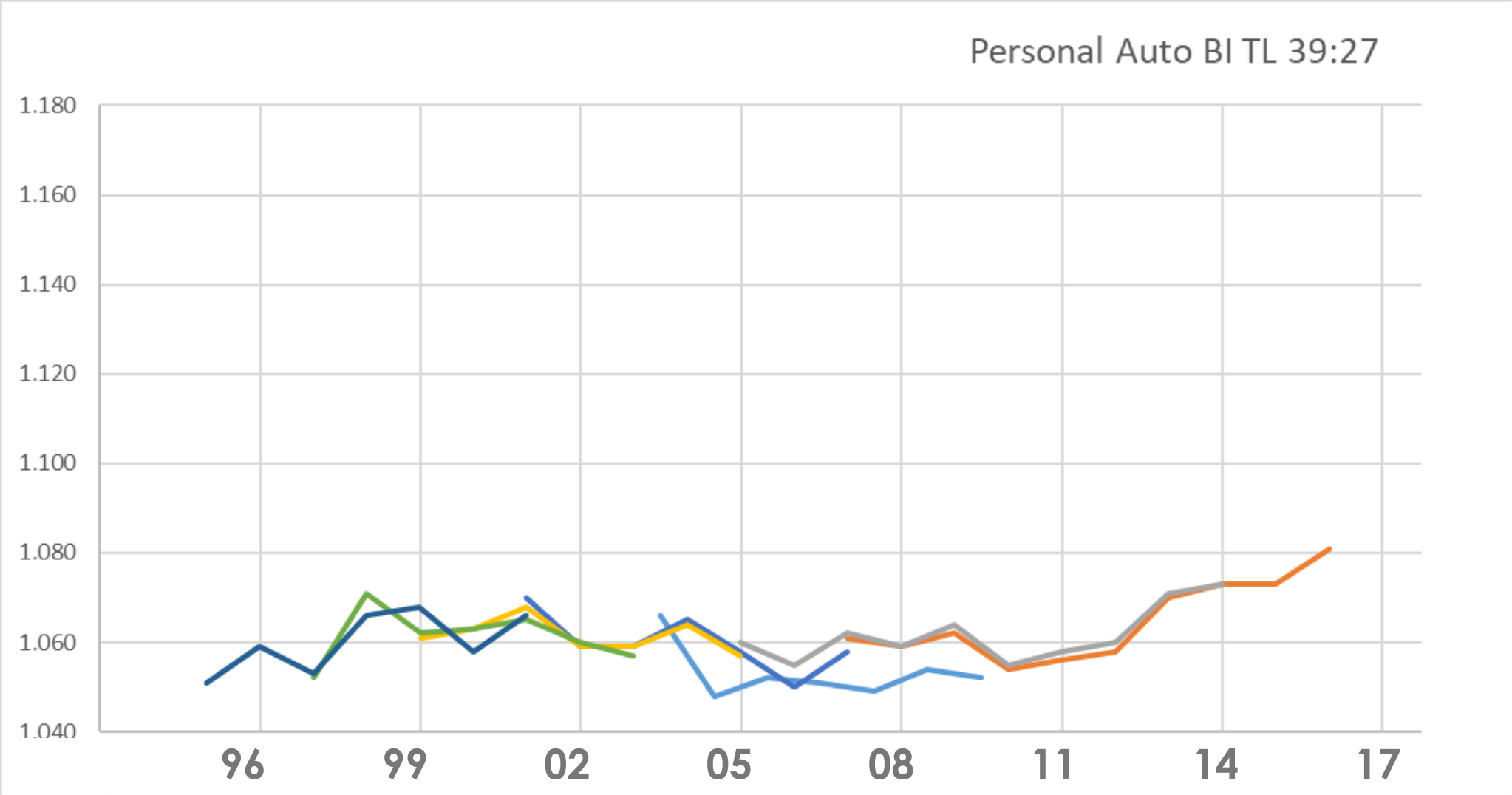


Historical Incurred Loss Development



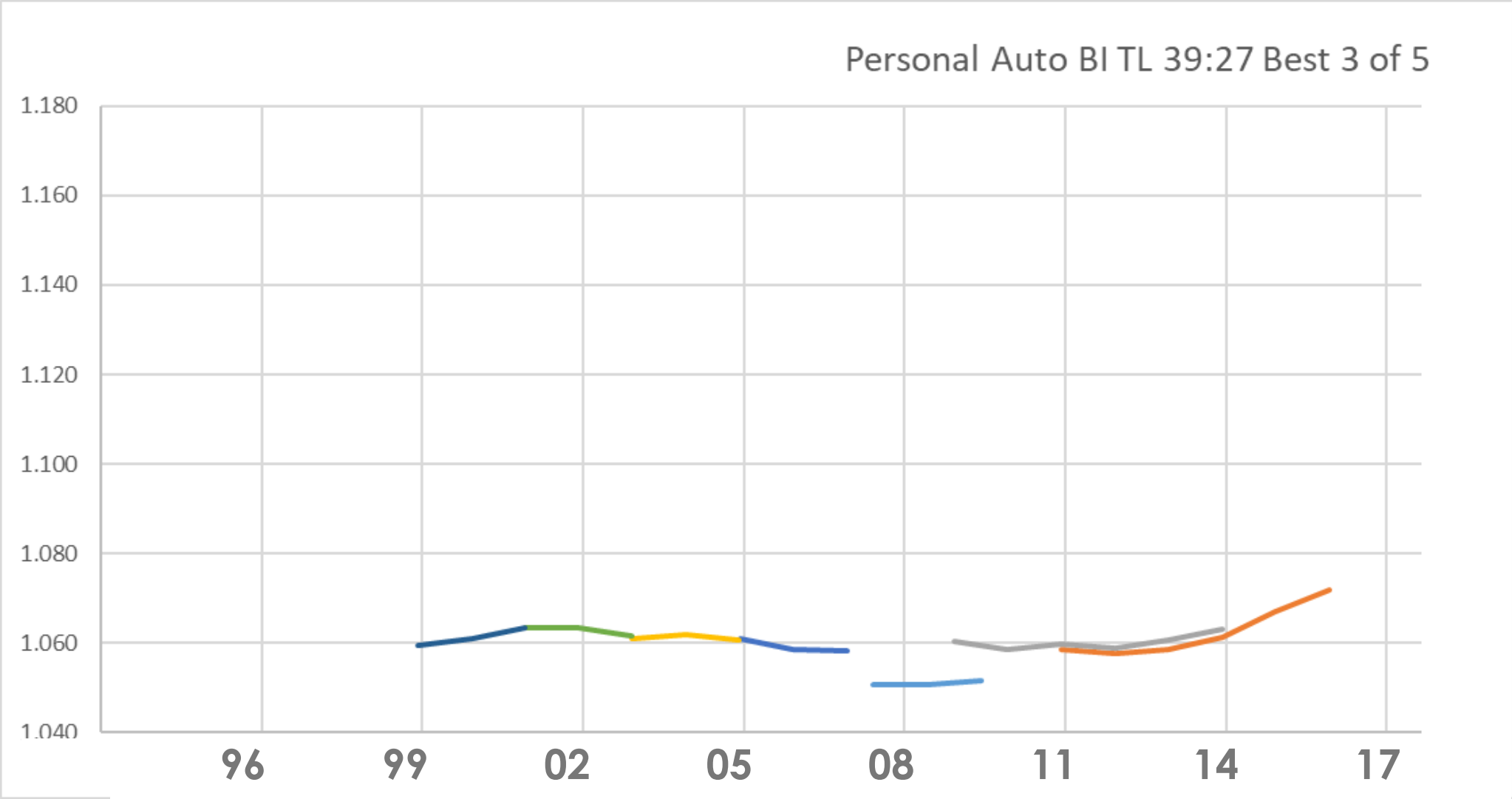


Historical Incurred Loss Development



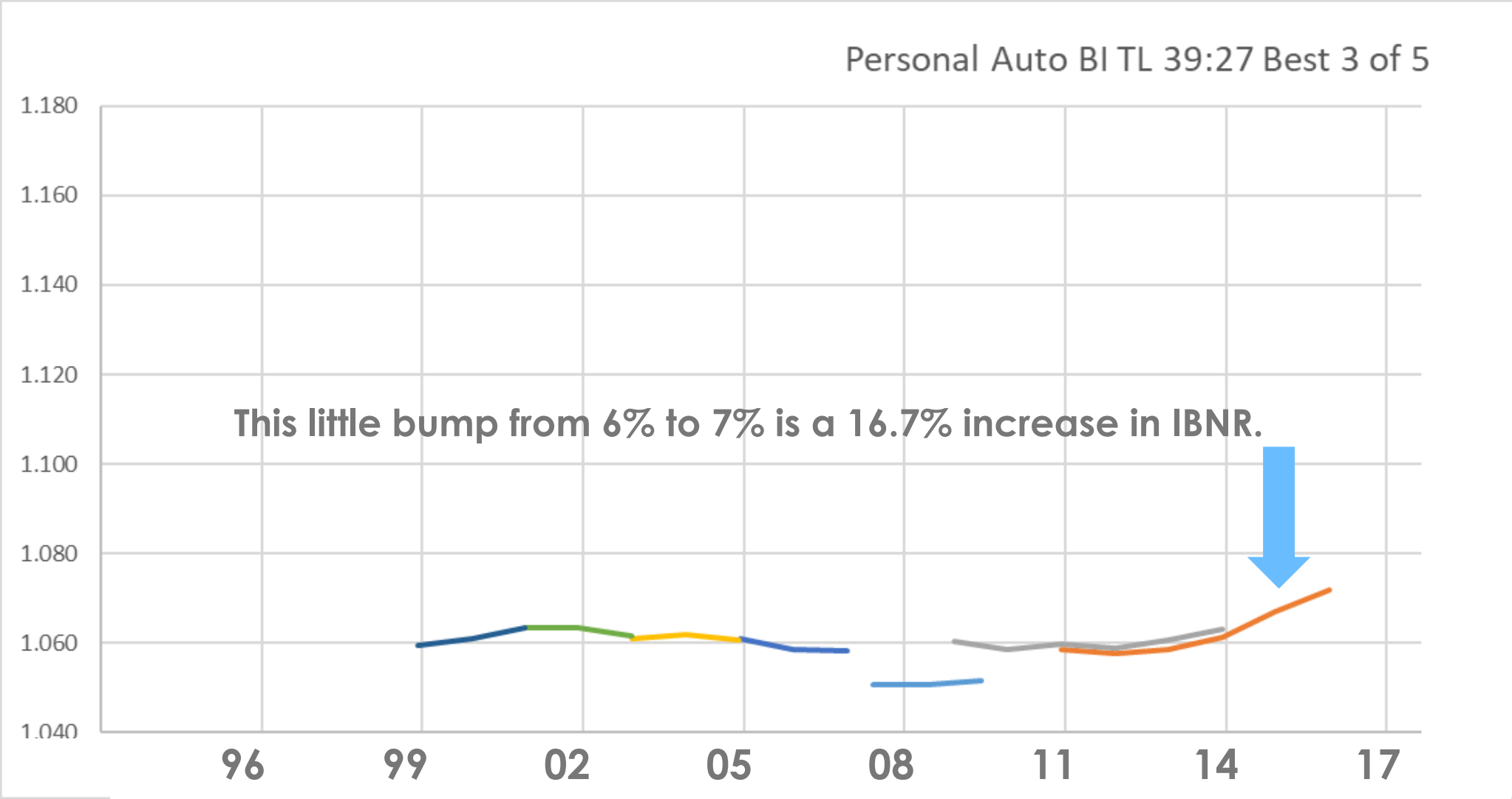


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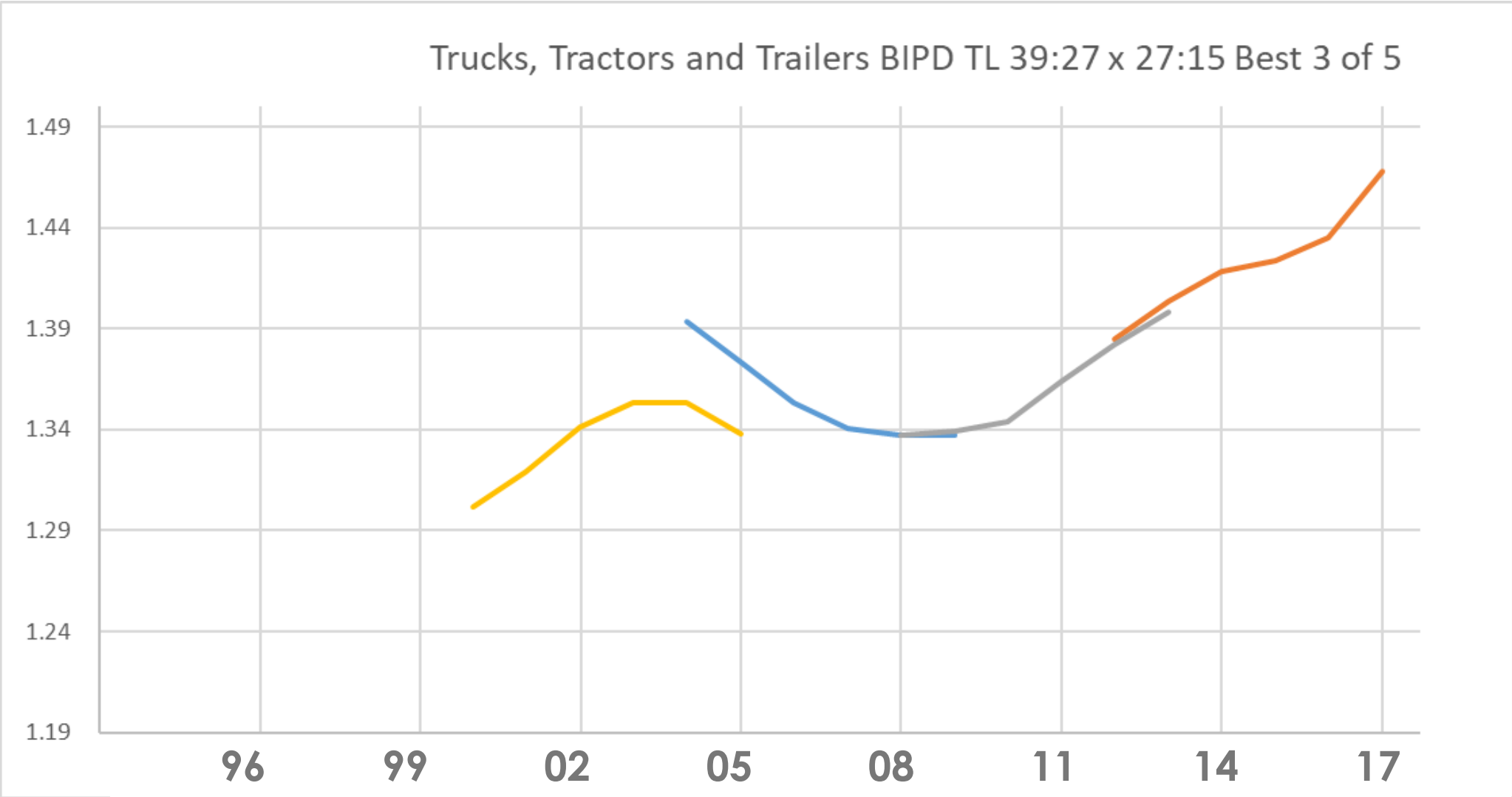


Historical Incurred Loss Development



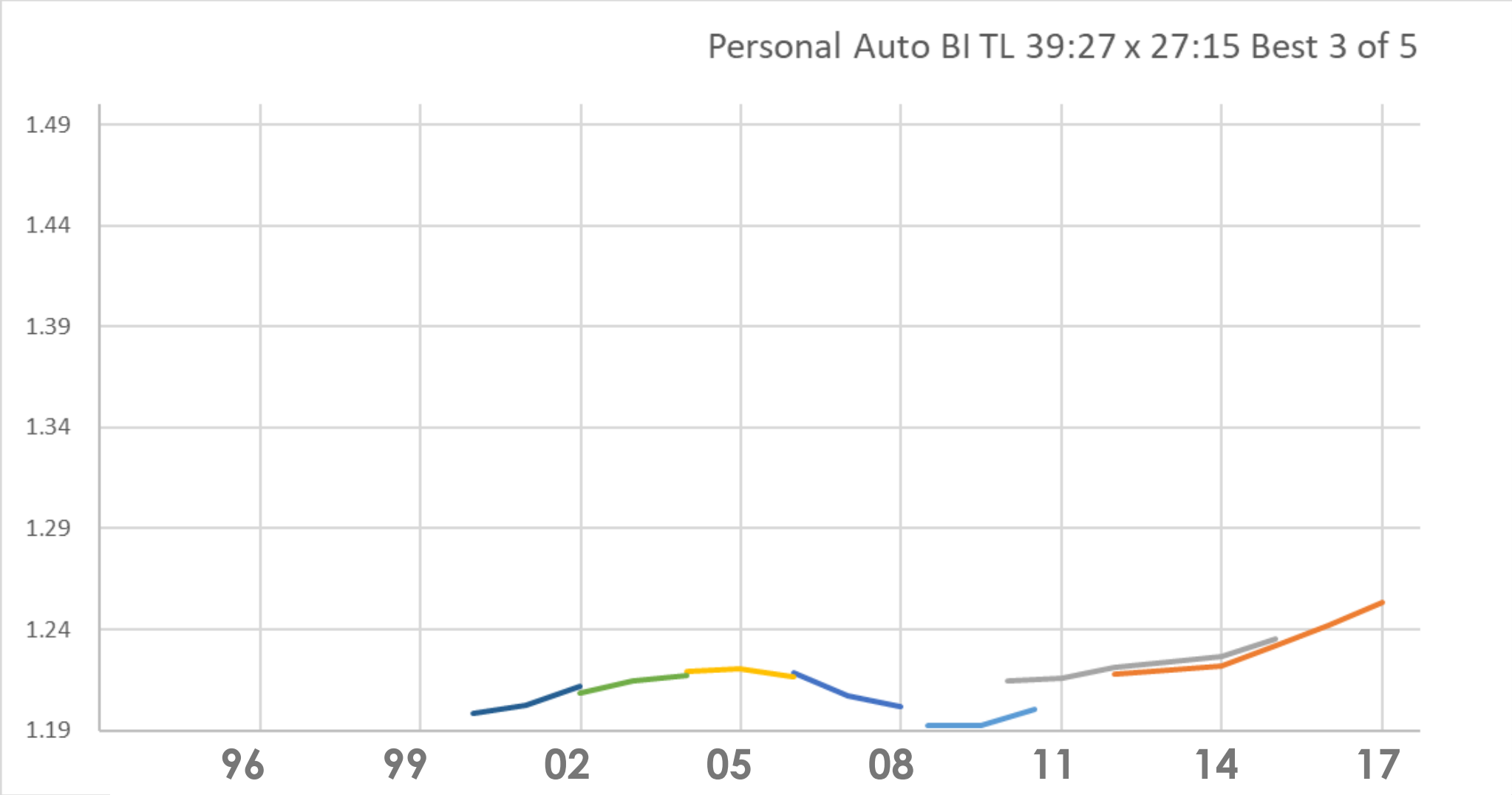


Historical Incurred Loss Development





Historical Incurred Loss Development

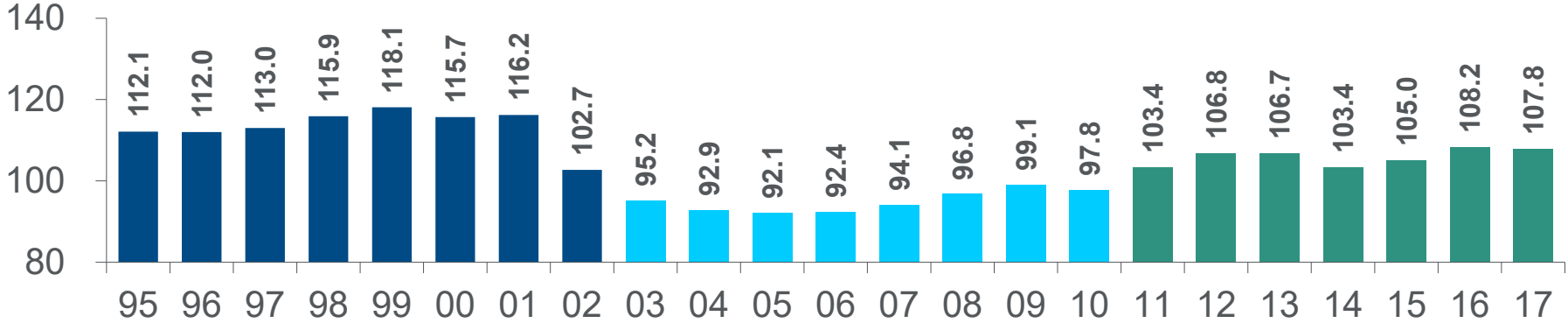


Accident Year



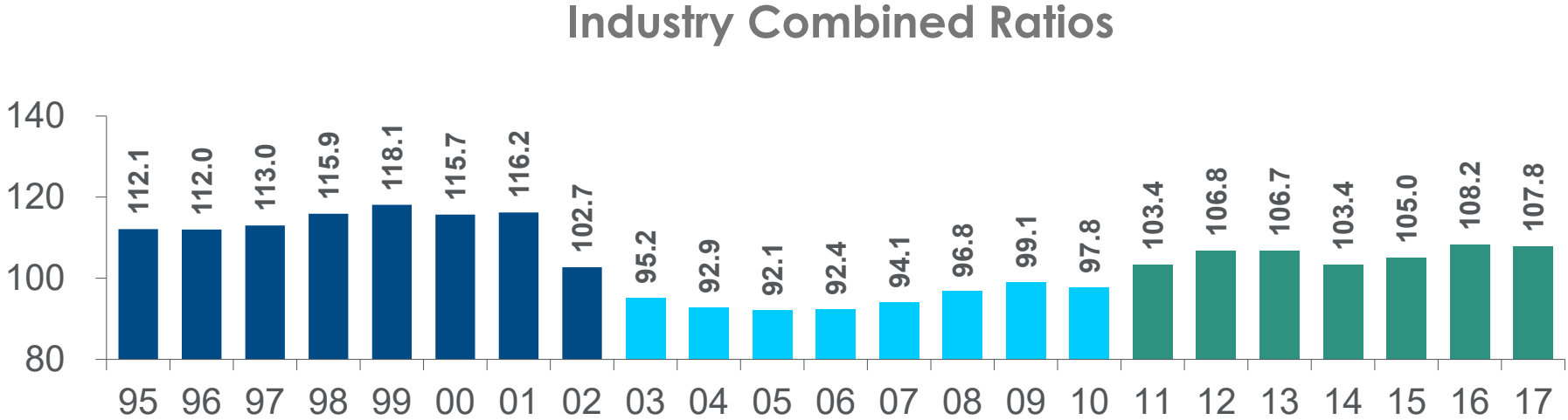
Historical Incurred Loss Development

Industry Combined Ratios





Historical Incurred Loss Development

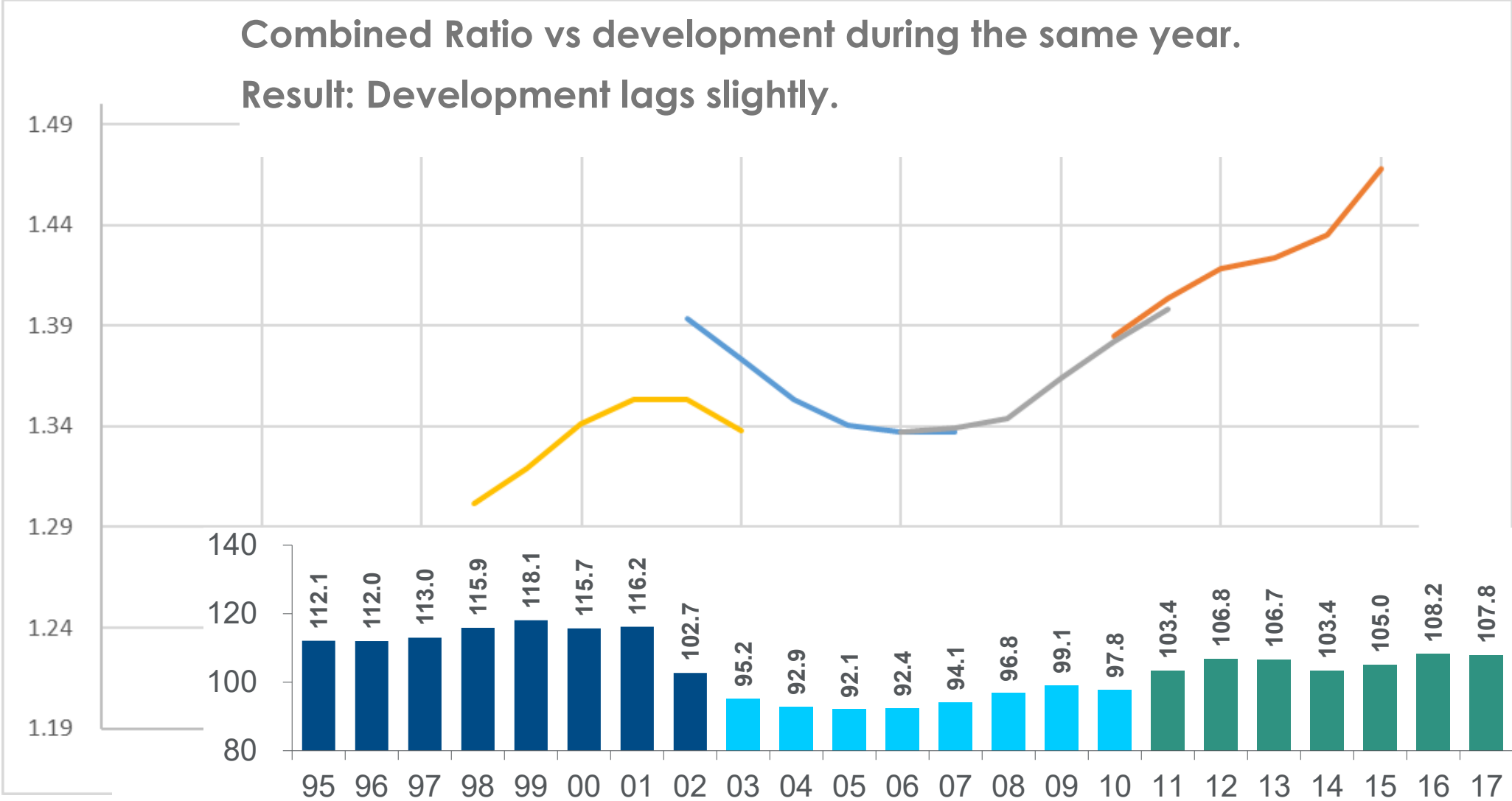


Do development swings predict this shape? (Spoiler: no)



Historical Incurred Loss Development

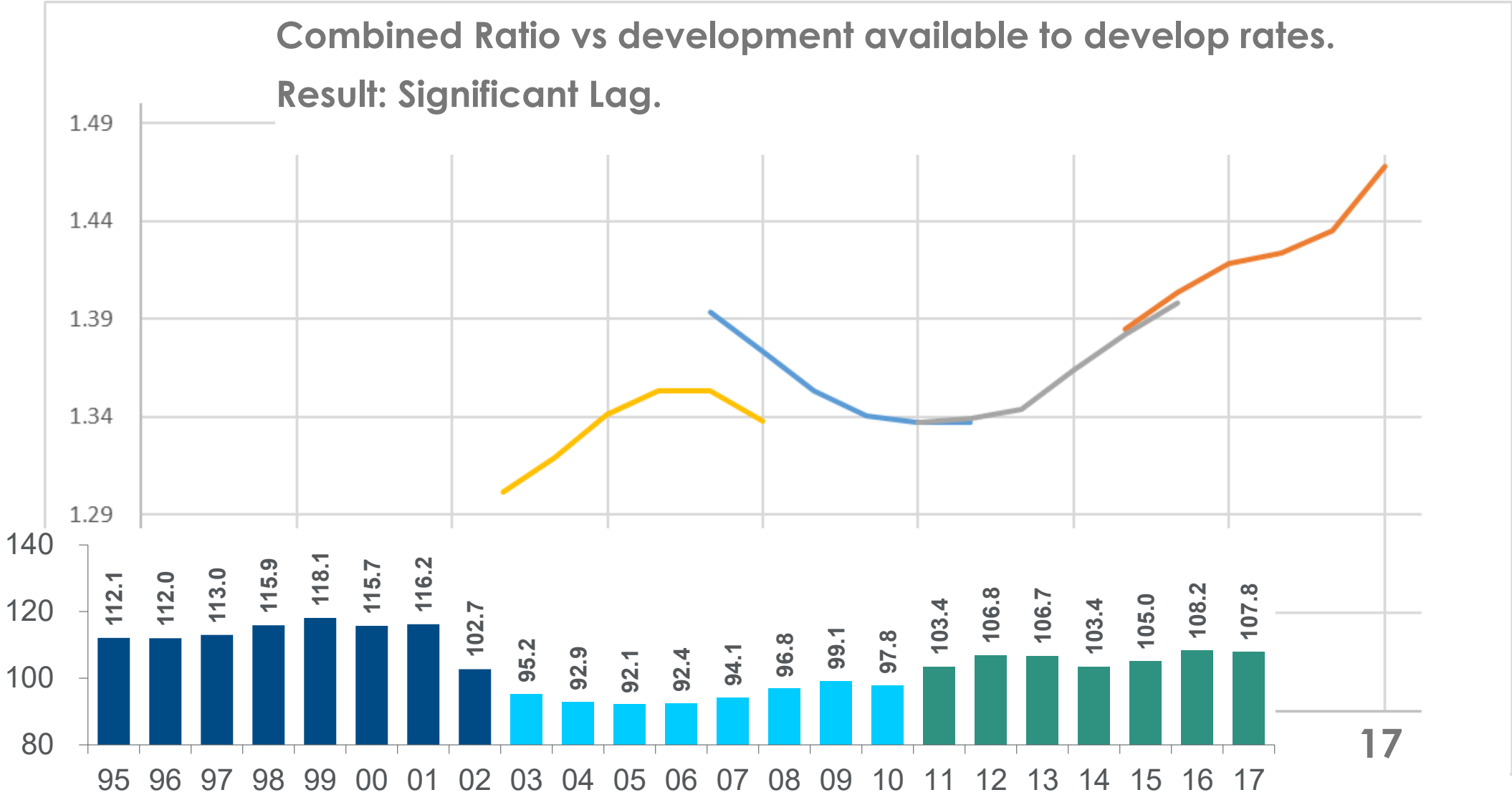
Combined Ratio vs development during the same year.
Result: Development lags slightly.





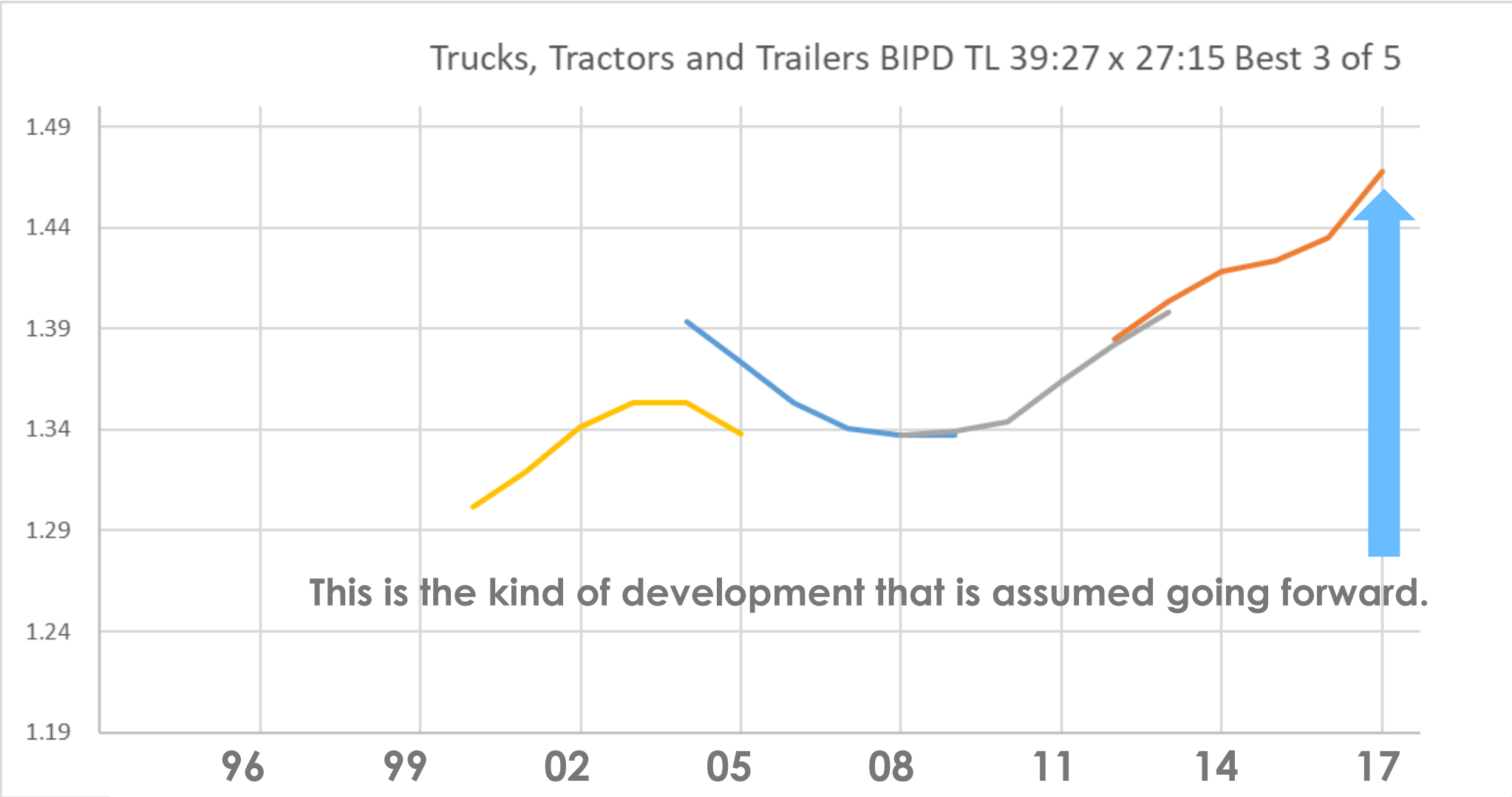
Historical Incurred Loss Development

Combined Ratio vs development available to develop rates.
Result: Significant Lag.





Historical Incurred Loss Development



This is the kind of development that is assumed going forward.



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