



Bundesamt
für Güterverkehr

UNECE and ITF virtual meeting series on
Mobility Monitoring
“Exploring new transport data sources”

German Truck Toll Mileage Index

an experimental daily index
early available and economically meaningful

The Federal Office for Goods Transport
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The German Truck Toll Mileage Index

- Public services have access to big data due to their public service mission
- Public data → Independency from other data sources
- Digital processed data → no extra work load for companies, high data quality
- The Truck Toll Mileage Index (TI) gives information on the development of truck mileage on German motorways.

→ For interpretation and a quick understanding no original mileage data but Truck Toll Mileage Index



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The German Truck Toll System

automatic on-board unit



98,5 %

manual booking



0,3 %



0,5 %

0,7 %

automatic controls

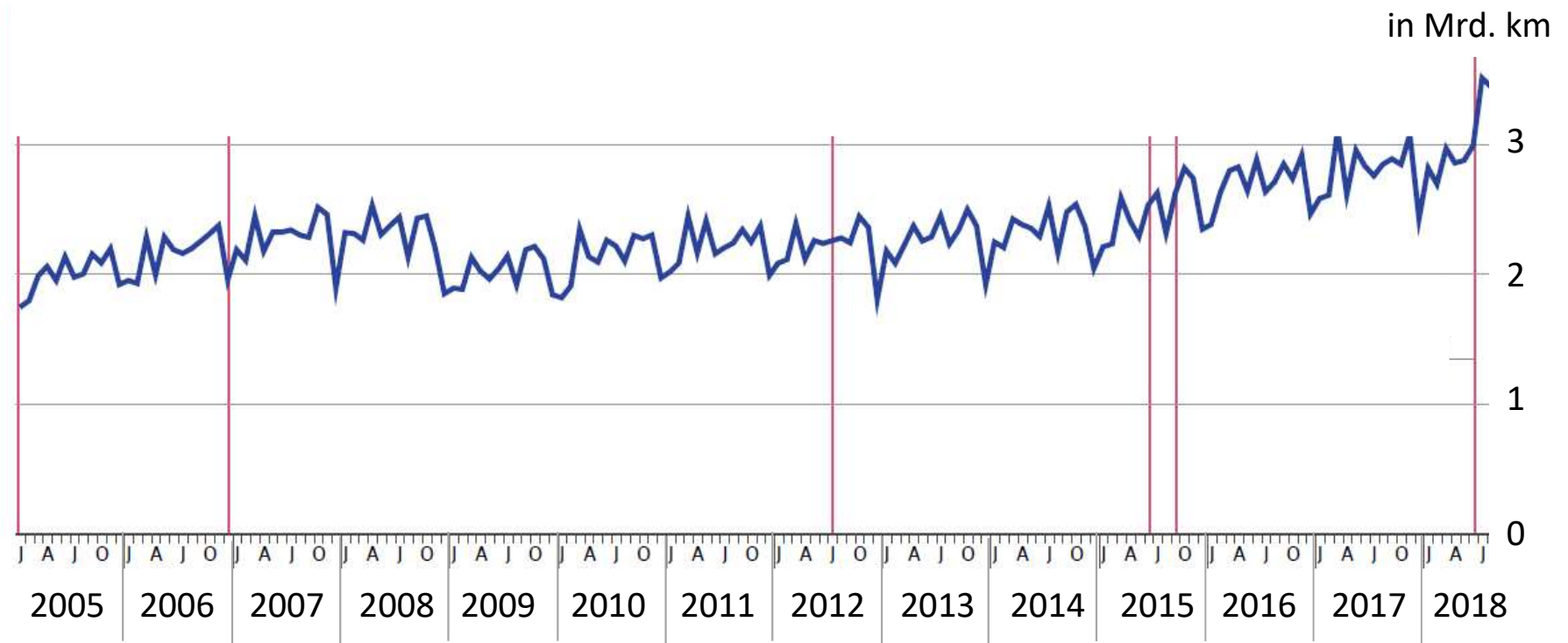


control vehicles





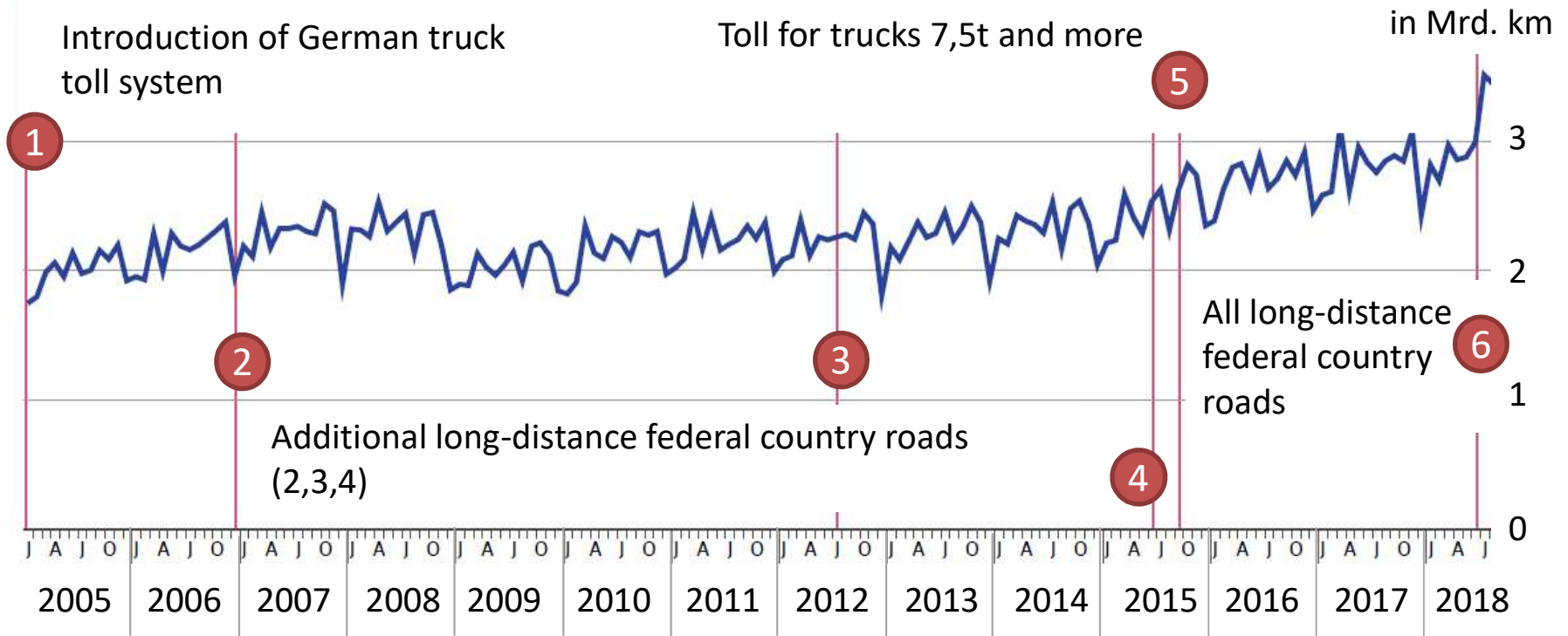
Truck Mileage over Time



Source: Cox et al. 2020



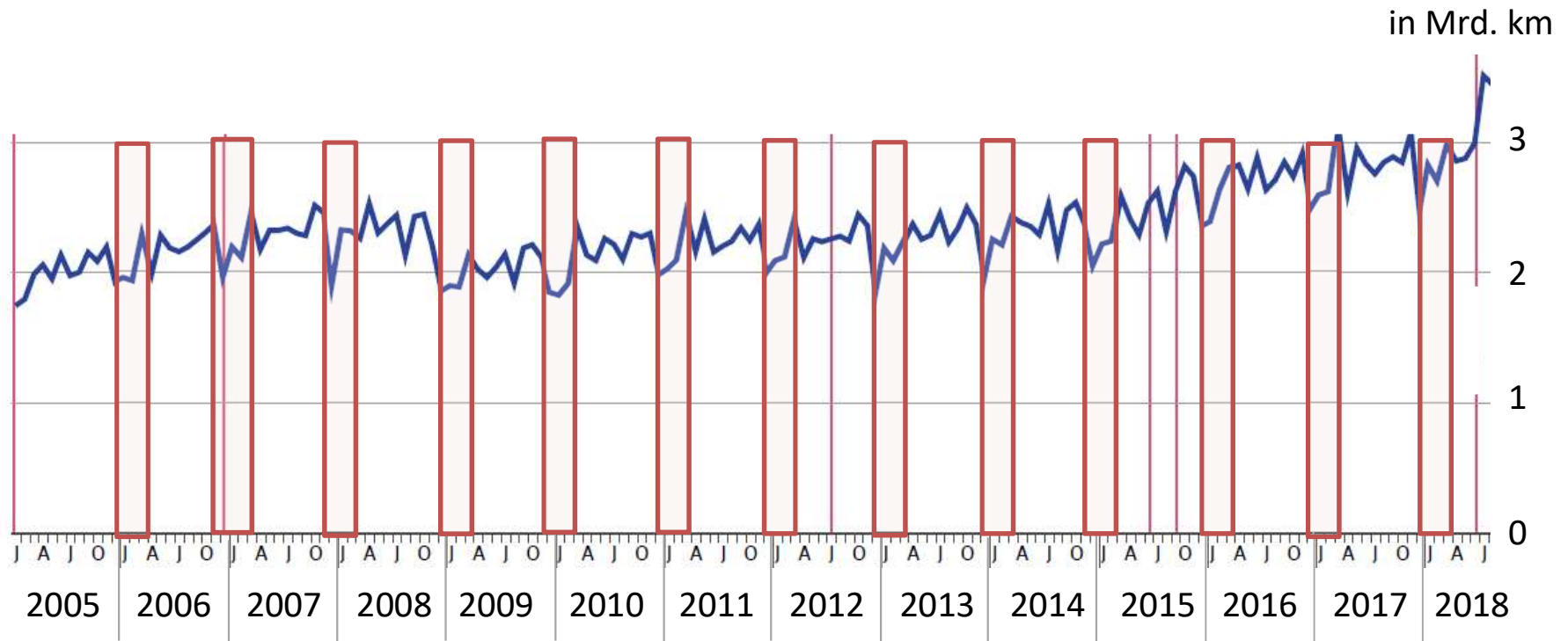
Truck Mileage over Time



Source: Cox et al. 2020



Truck Mileage over Time

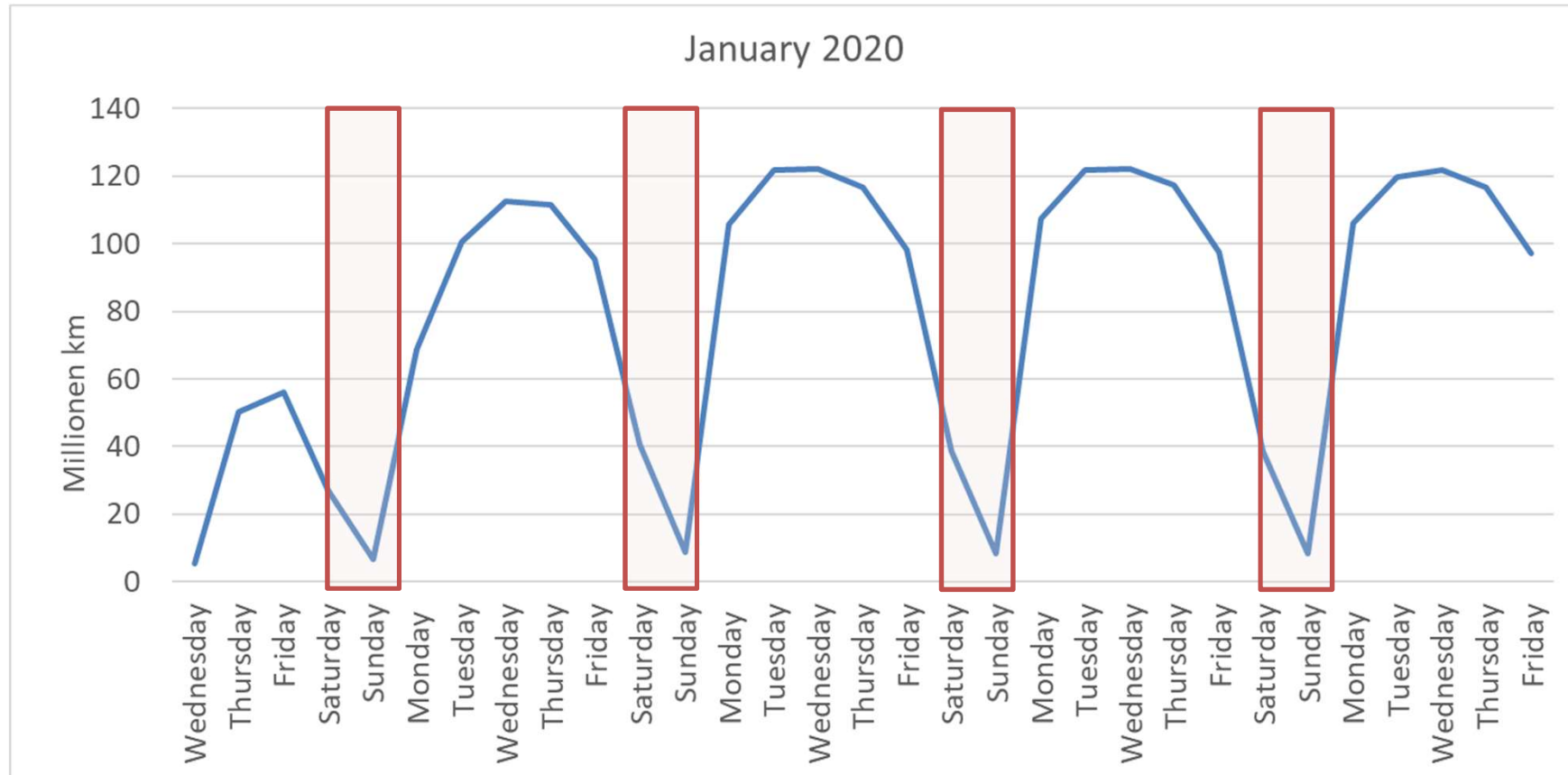


Source: Cox et al. 2020

- Typical Seasonal Pattern:
 - winter and summer little truck mileage
 - spring and autumn high truck mileage



Truck Mileage over Time



- Typical Weekly Pattern: weekend and holidays little and weekdays high truck mileage

The German Truck Toll Mileage Index – Method

Data selected:

- All trucks with 4 or more axes on federal motorways (German Autobahn)
- Data report 90% of all truck mileages on motorways (74% of all toll mileage)

Calculation:

- Development over time more important than absolute numbers
- Daily Truck Toll Mileage Index = $\frac{tkm_d}{\frac{1}{365} * tkm_{2015}} * 100$

tkm_d = tonne-kilometre of a certain day

tkm_{2015} = tonne-kilometre in the base year 2015



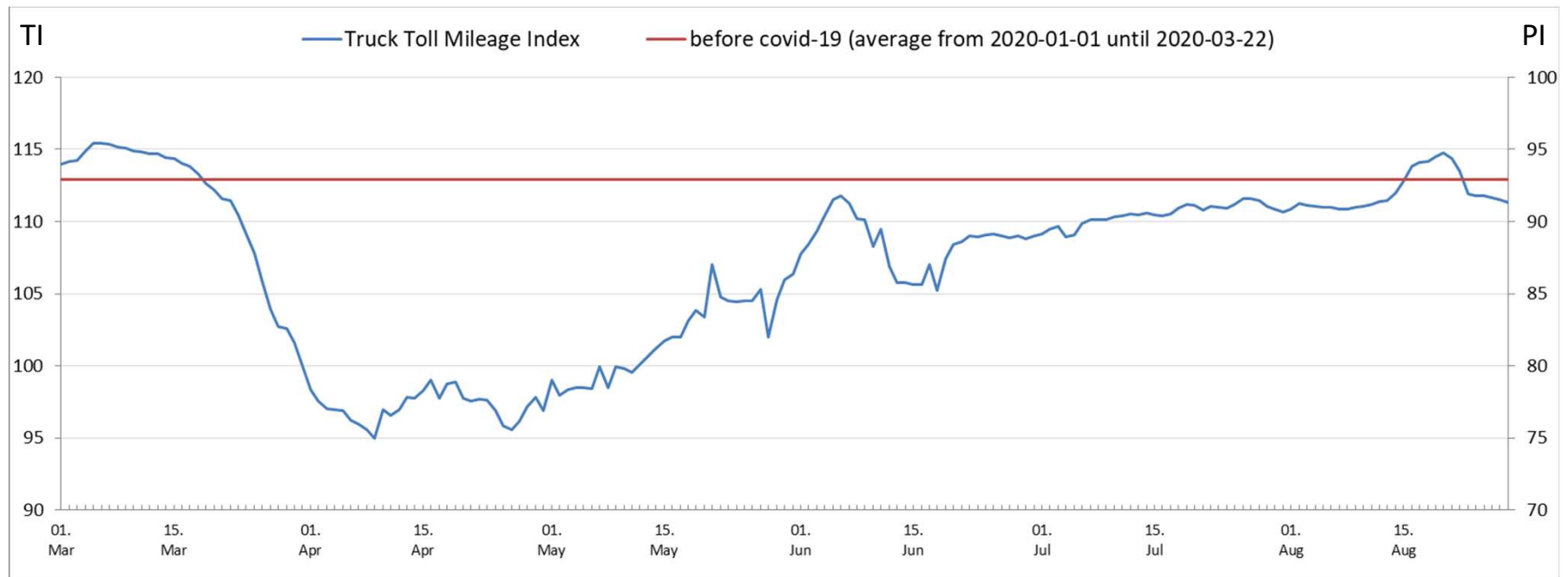
The German Truck Toll Mileage Index – Season & Calendar Effects

- Problem: change rates to previous month/quarter of the year is biased by season effects
- Federal Bank estimates the season and calendar effects based on historical data
- periodical calendar and season effects are separated
- rare events like strikes or economic crisis are exposed
- daily data adjustment new, methodological knowledge is acquired



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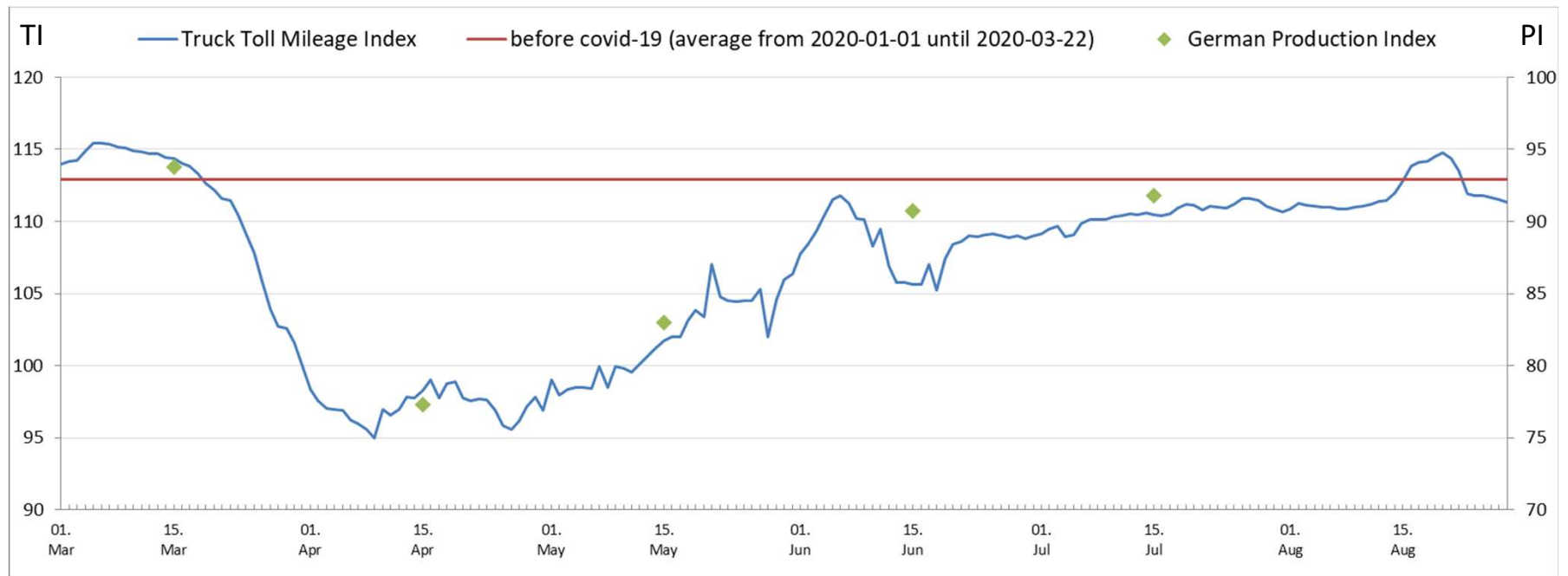
German Truck Toll Mileage Index – Results





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German Truck Toll Mileage Index – Results





Advantages of the Truck Toll Mileage Index are:

1. It is easy interpretable and well understandable.
2. It is early available.
3. It is on a daily level.
4. It is independent from other indices or data sources.



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Thank you for your attention!
Questions?

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Data : "Lkw-Maut-Fahrleistungsindex"

Statistisches Bundesamt:

<https://www.destatis.de/DE/Service/EXDAT/Datensaetze/lkw-maut-artikel.html>

Deutsche Bundesbank: <https://www.bundesbank.de/de/statistiken/konjunktur-und-preise/saisonbereinigung-des-taeglichen-lkw-maut-fahrleistungsindex-831064>

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Literature:

Cox, Michael/Triebel, Jürgen/Linz, Stefan/Fries, Claudia/Flores, Luis Frederico/Lorenz, Andreas/Ollech, Daniel/Dietrich, andreas/LeCrone, Julian/Webel, Karsten. Täglicher Lkw-Maut-Fahrtleistungsindex auf digitalen prozessdaten der Lkw-Mauterhebung. In: WISTA Wirtschaft und Statistik. Ausgabe 8/2020, Seite 63 ff.

Cox, Michael/Berghausen, Martin/Linz, Stefan/Fries, Claudia/Völker, Julia. Digitale Prozessdaten aus der Lkw-Mauterhebung – neuer Baustein der amtlichen Konjunkturstatistiken. In: WISTA Wirtschaft und Statistik. Ausgabe 6/2018, Seite 11 ff.

Deutsche Bundesbank:

<https://www.bundesbank.de/resource/blob/831064/25d02c60b2df31825c0661b215735fc5/mL/lkw-maut-fahrleistungsindex-data.pdf>

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