

# Japan Position on the ETRTO Proposal for Correction Equations Rev.1

IWG WGWT  
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**JAPAN AUTOMOBILE STANDARDS INTERNATIONALIZATION CENTER**

# Japan Verification Results for Correction Equations (Trailer)

$$WWGI = K \cdot \left( \mu_{Candidate} - \left( a \cdot (\mu_{SRTT \text{ Worn}} - \mu_{Ref \text{ Worn}}) + b \cdot \Delta T^{\circ} + c \cdot \Delta T^{\circ 2} + d \cdot \Delta MTD \right) \right)$$

\*Validation results are performed with Normal and 3PMSF only Since ETRTO calculates the M+S correction equations as the average of these.

## ETRTO Proposal (Trailer Method)

Category	t <sub>0</sub>	a	b	c	d	K trailer
Normal	20	0.99655	-0.00124	0.00041	0.06876	1.50
3PMSF	10	0.89488	0.00061	-0.00080	0.09217	

## Japan Calculations (Trailer Method)

Category	t <sub>0</sub>	a	b	c	d	K trailer
Normal	20	0.99051	0.00231	0.00097	0.06019	1.5
3PMSF	10	0.89527	0.00066	0.00000	0.10329	

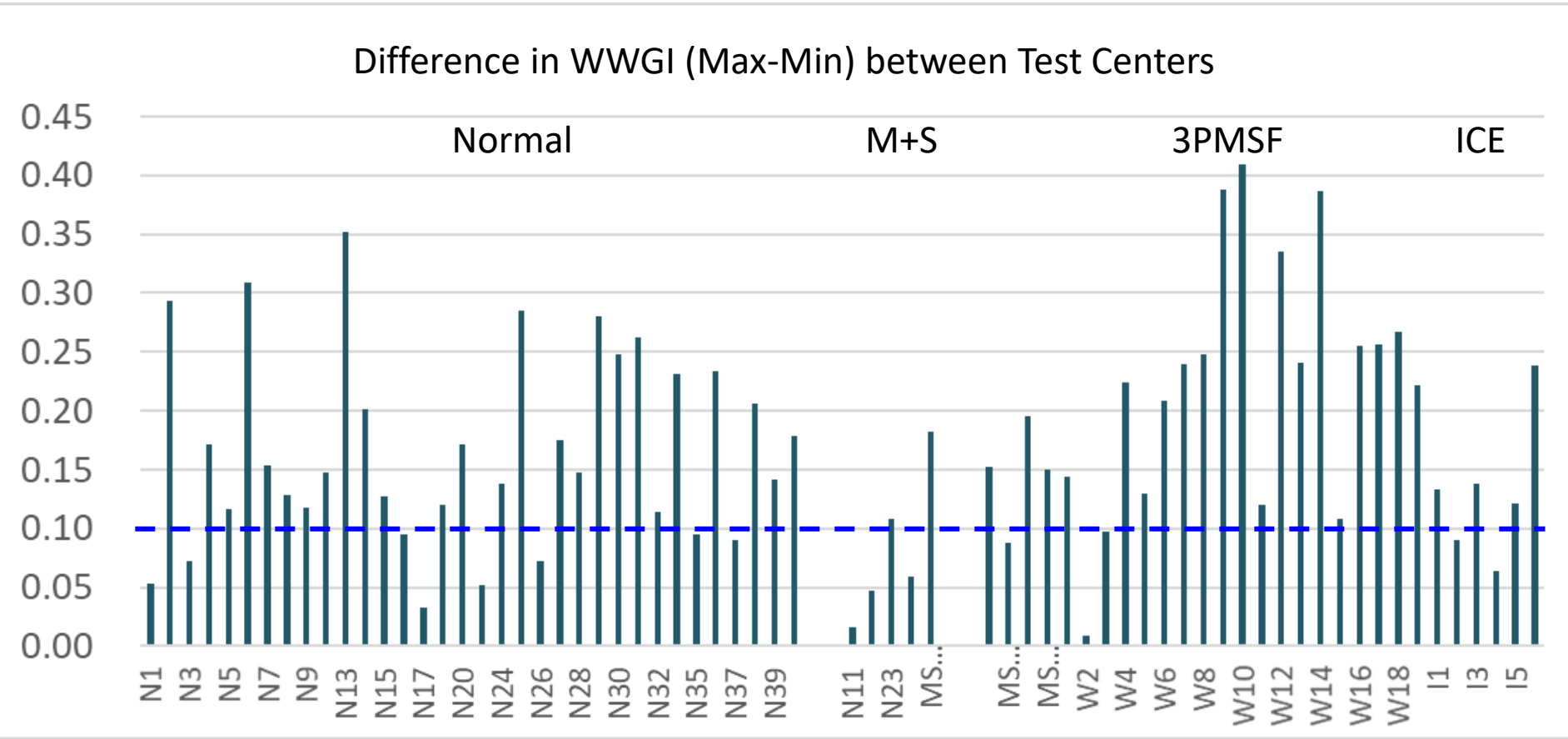
## China Calculations (Trailer Method)

Category	t <sub>0</sub>	a	b	c	d	K trailer
Normal	20	0.986445	-0.000745	0.000333	0.036628	1.5
3PMSF	10	0.874369	0.005036	-0.00078	0.117089	

**Correction Equations given by ETRTO, Japan and China are similar but not equal.  
Need to check the each calculation process.**

# Difference in WWGI (Max-Min) between Test Centers.

Note: Limit values for new tyres (Normal: 1.10, 3PMSF: 1.00 or 0.90)



There are **78%** (53/68) cases that the WWGI difference between laboratories exceeds 0.1\*.

**This level of precision is not appropriate for certification test.**

\* Threshold difference in R117. 3

# Test variation vs WGI 'new' state

RRT 2021 (WWGI 'worn' state):

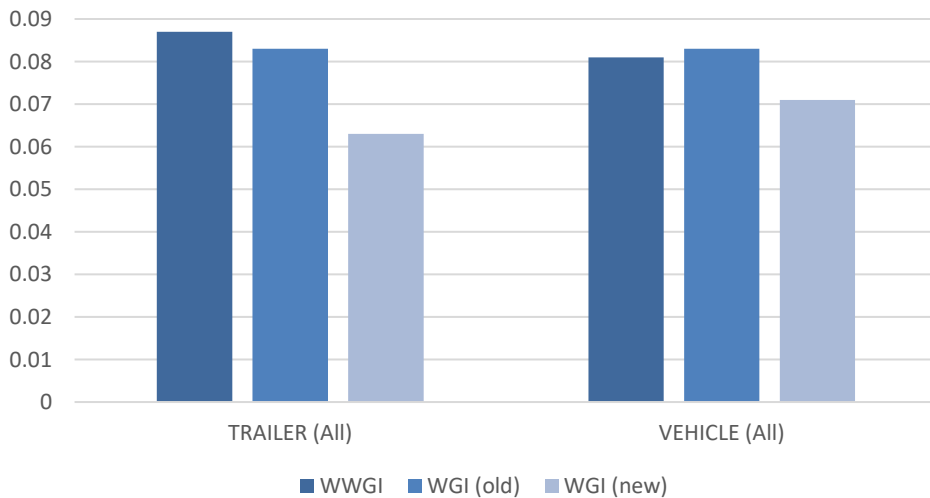
	Sample Size	Weighted StdDev [-]	Weighted CoV [%]
TRAILER (All)	266	0.087	7.7
VEHICLE (All)	143	0.081	7.5

RRT 2017-2018 (WGI 'new' state):

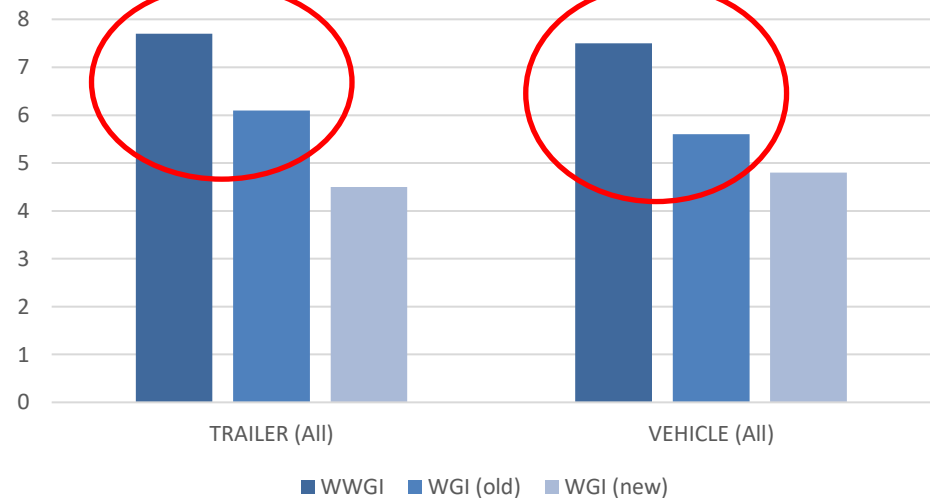
	Sample Size	WGI (old)		WGI (new) ISO23671:2021	
		Weighted StdDev [-]	Weighted CoV [%]	Weighted StdDev [-]	Weighted CoV [%]
TRAILER (All)	1163	0.083	6.1	0.063	4.5
VEHICLE (All)	319	0.083	5.6	0.071	4.8

Reference: annex WTPP11-2

Weighted StdDev [-]

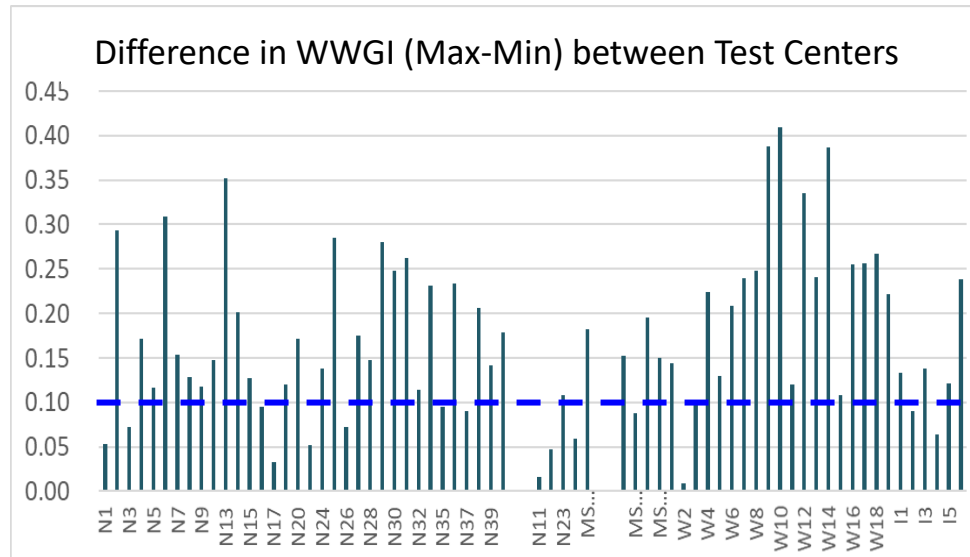


Weighted CoV [%]



**Variation of WWGI is greater than WGI of the old ISO 23671**

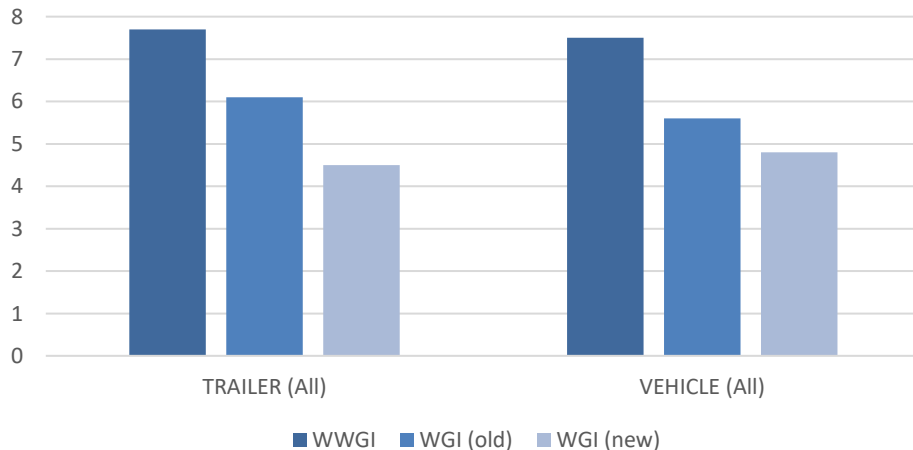
- The results of the calculation of the coefficients of ETRTO, CATARC and Japan are close but do not equal. Need to check the each calculation process.



- There are **78%** (53/68) cases that the WWGI difference between laboratories for each tyre exceeds 0.1\*.

\* Threshold difference in R117.

Weighted CoV [%]



- Variation of WWGI is greater than that of the old ISO 23671