



How to rank countries regarding road safety?

(the scientific approach)

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1. Some details of the international comparison

Basic facts:

1./ At the moment only the number of road fatalities is appropriate for international comparison (same, so-called „30-day definition“).

2./ We need rates for the comparison (fatality and mortality rates) in order to be able to filter out the confounding factors

1. Some details of the international comparison /2

3./ The best exposure data (theoretically) is the number of vehicle-kilometres, the least appropriate is the number of population. The „second best” exposure data is the vehicle fleet.

4./ Just to rank countries based on one of the rates is not the best approach, since the rates are depending – among others - on the level of motorization.

1. Some details of the international comparison /3

5./ Comparisons without taking into account the differences in the level of motorization can be misleading.

1. Some details of the international comparison /4

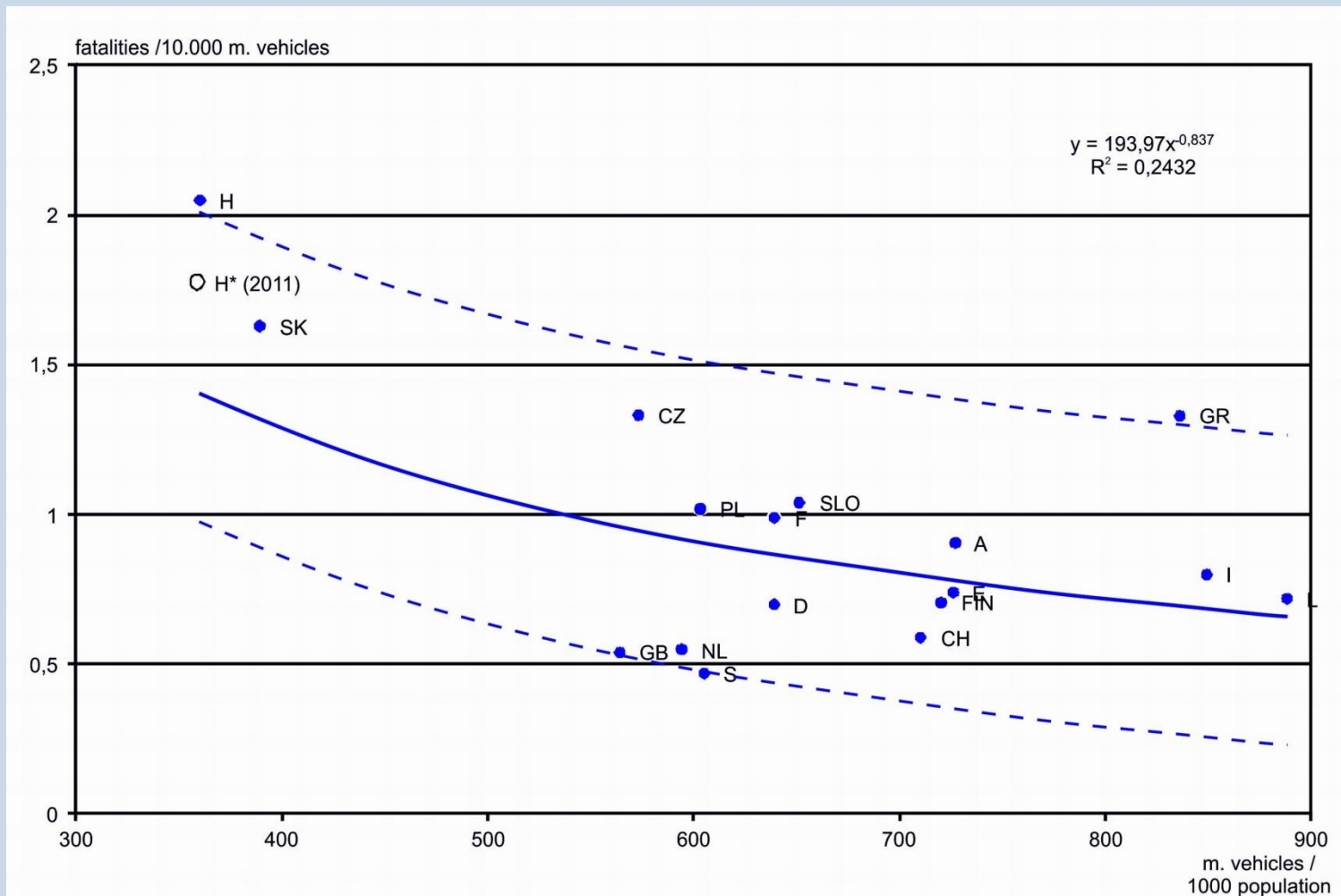


Fig.1: Relationship between fatality rate and level of motorization in 2010.
(Source: IRTAD)

1. Some details of the international comparison /5

The Fig.1 is the updated version of the well-known Smeed model.

Although the relationship is not close, the trend can be seen clearly: the higher the level of motorization the lower the fatality rate.

1. Some details of the international comparison /6

Having seen the Fig.1, it can be stated, that the level of motorization has a decisive role in the level of road safety. Of course a lot of other factors have influence on the road safety level as well, but one of the most important influencing factors is the level of motorization.

1. Some details of the international comparison /7

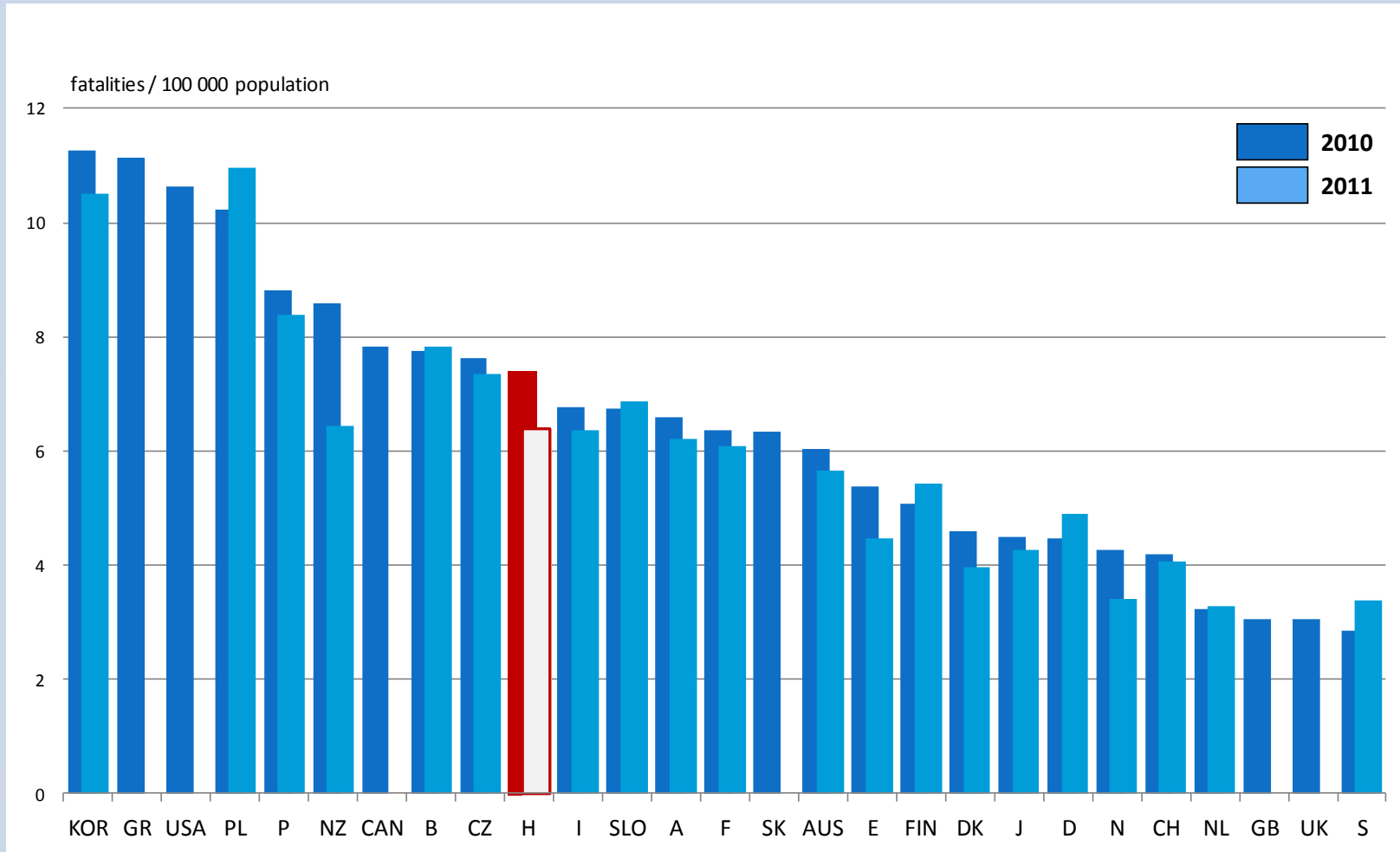
We can imagine the parallel curves in the Fig.1, which means these virtual curves are determined by a lot of other parameters than the level of motorization.

The countries below the curve have better road safety level than the average (GB, NL, S, etc.), the countries above the curve have worse road safety level than the average (H, SK, CZ, PL, GR, etc.)

2. Example for the separated usage of indicators

If we use the mortality and the fatality rates separated, the results are different.

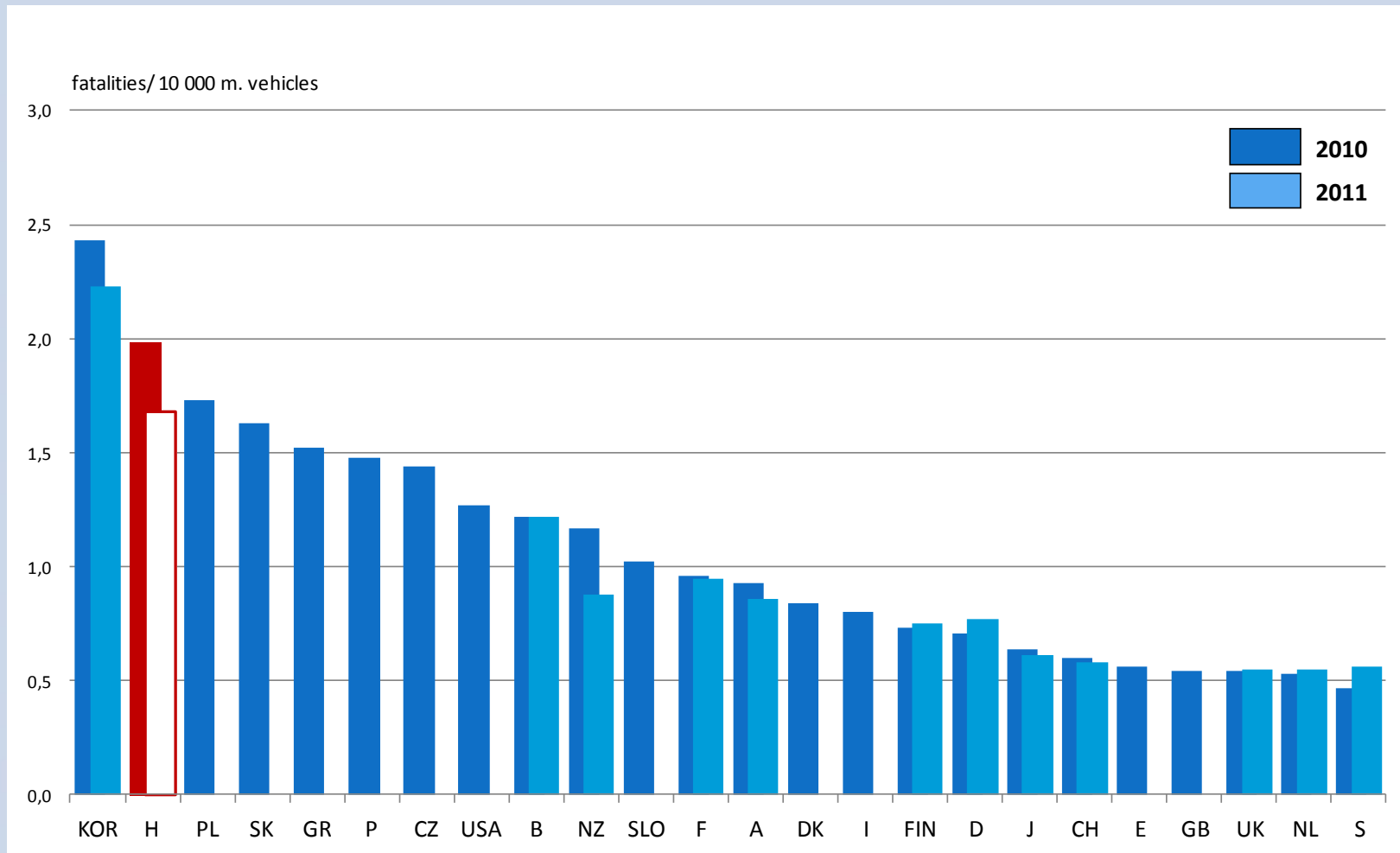
2. Example for the separated usage of indicators /2



Mortality(fatalities/100.000 population) in the OECD member countries in 2010 and 2011.

Source: IRTAD

2. Example for the separated usage of indicators _{/3}



Fatality rate (fatalities/10.000 m.vehicles) in the OECD member countries in 2010 and 2011.

Source: IRTAD

3. Example for the common usage of indicators

There is a possibility for the common application of the two indicators as well, the so-called Trinca model (1988.)

It has been used in the project SUNFLOWER+6 too.

3. Example for the common usage of indicators /2

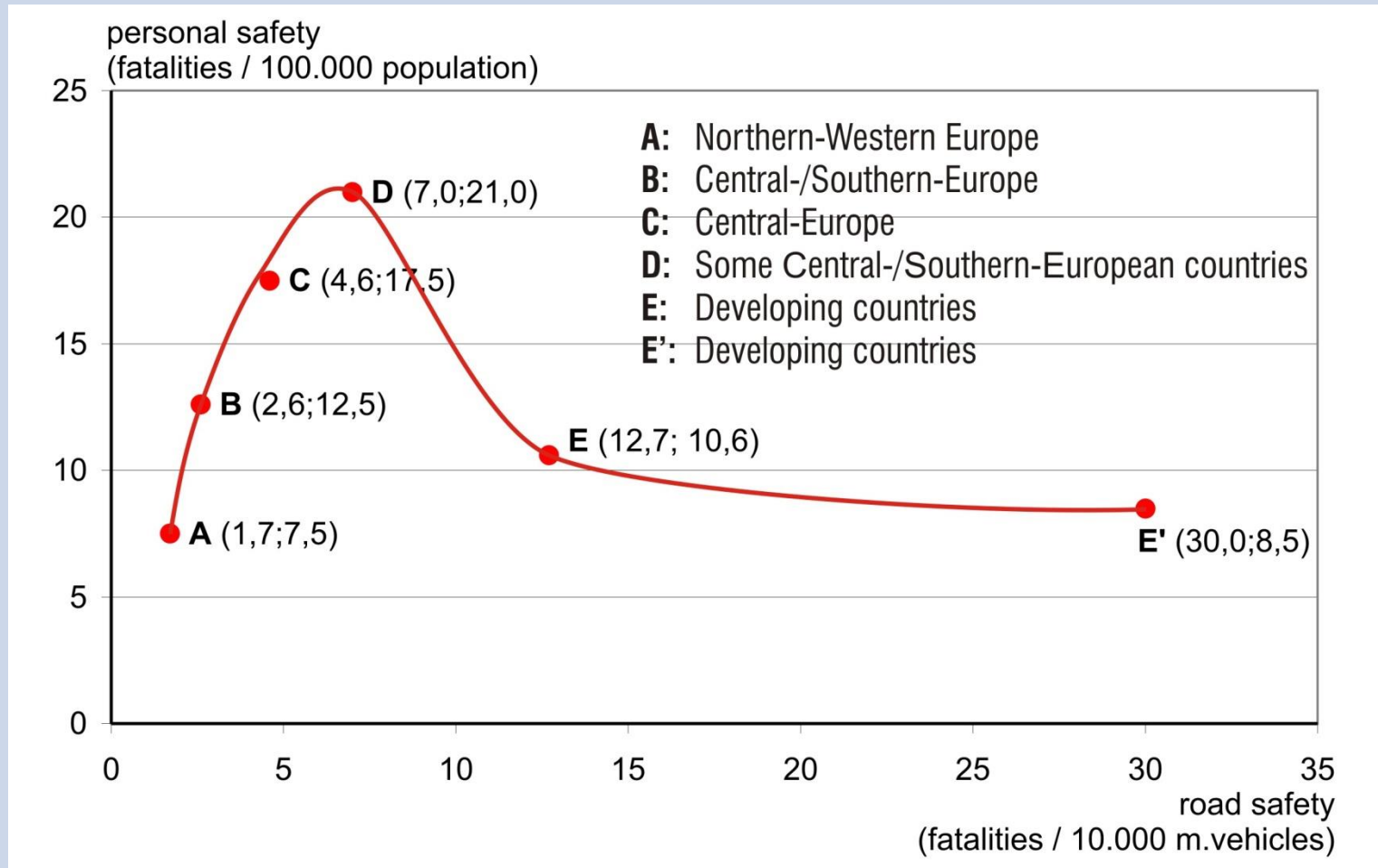


Fig. 2: Relationship between personal safety and road safety (theoretical model)
(Source: Trinca et al 1988)

1. Example for the common usage of indicators /3

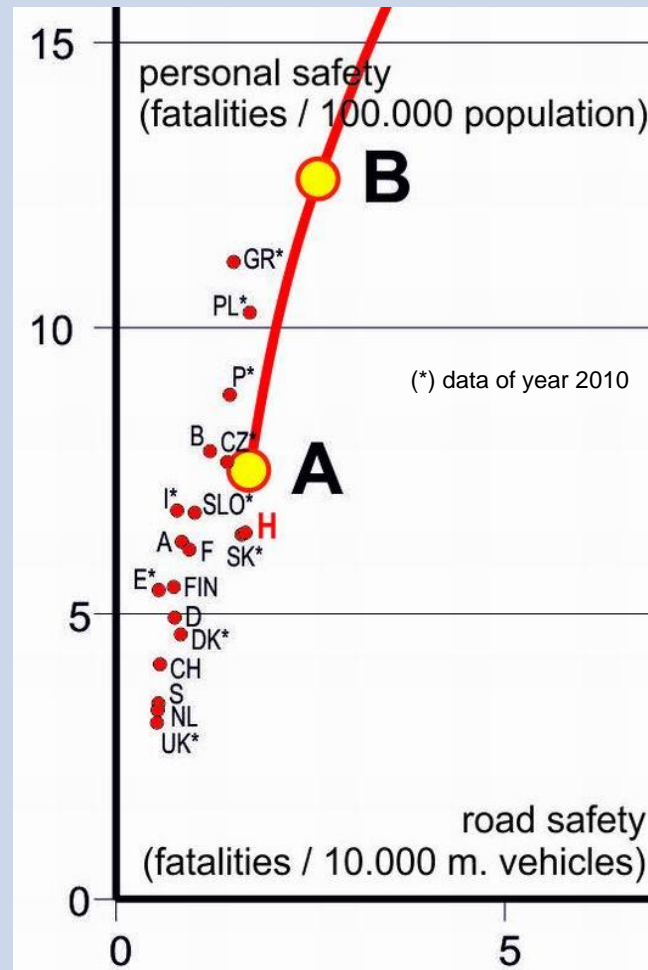


Fig. 3: Current period of the Trinca model (2011).
(Source: IRTAD)

4. Conclusions

Based on the 2010 data, all OECD countries are between A and B, or below (better than) A. (Northern-Western Europe).

The best performing countries were NL, GB and S, the so-called SUN countries. In these countries not only the personal safety but the road safety is also very good.

The common application of these two indicators makes a more detailed comparison and ranking possible.

The further increase of the Hungarian road safety needs new measures and efforts.

As priorities should be regarded:

- stronger police enforcement (increased probability of being caught in the act.)
- elaboration of a safety-centered driver education system,
- road safety inspection on the existing road network,
- as a result of the latter: extensive realization of low-cost traffic engineering measures along the network.

Thank you
for your attention !

