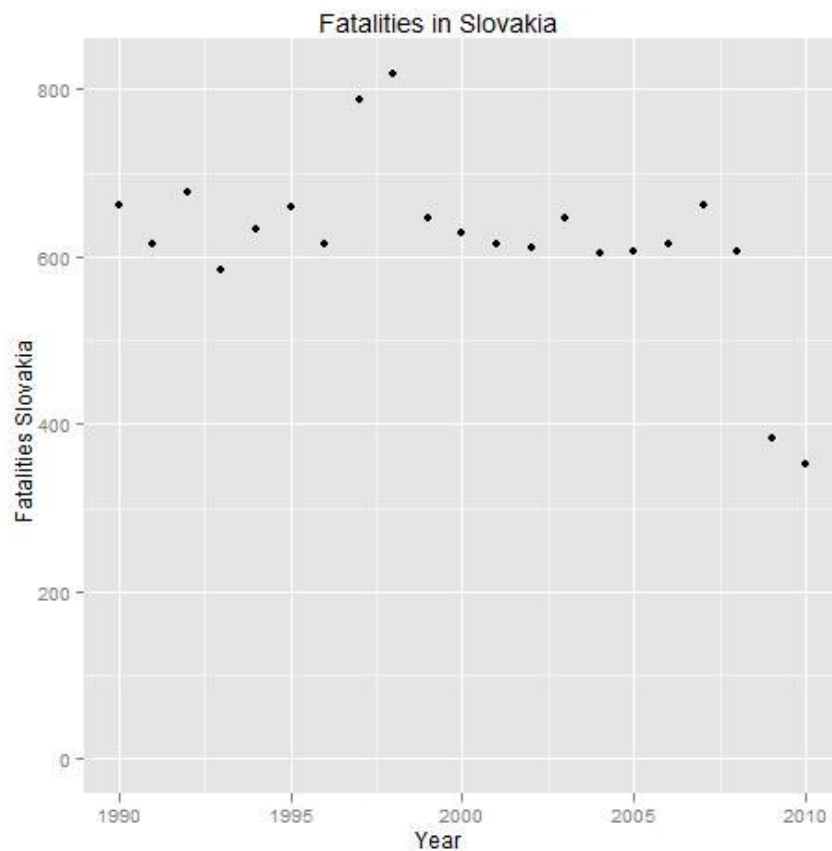


Slovakia

Fatalities



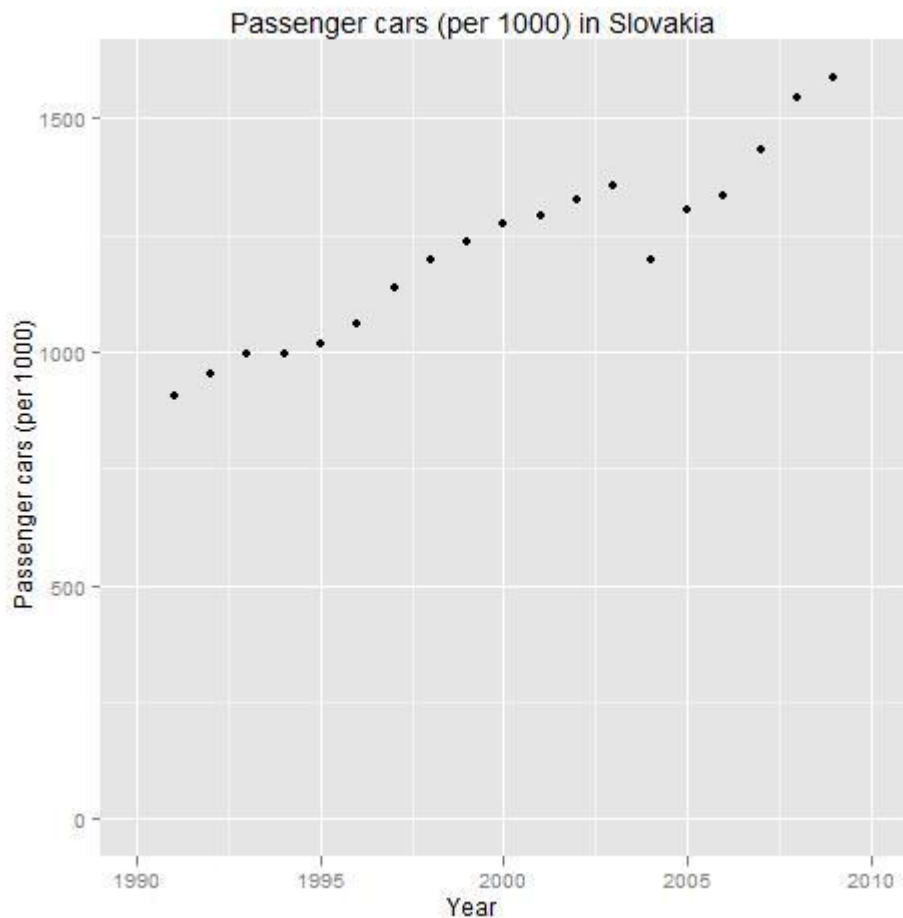
Fatalities have been stagnating or increasing until 2008.

- The number of fatalities has been more or less stagnating throughout the years, with two exceptions:
 - o 1997-1998:
 - Sudden rise in the number of fatalities and drop afterwards.
 - Reason unknown.
 - Seems to be 'real' (i.e. not due to changes in registration')[1].
 - o 2009 – 2010:
 - The number of fatalities was greatly reduced.
 - Introduction of higher fees for traffic violations and possibility to punish violations by permanent license withdrawal.
 - Other measures: RS education in schools, awareness raising campaigns, etc..
 - The drop in fatalities goes together with a drop in the RSPI's [1].
- From 1990 to 2010, this amounts to an average reduction of the fatalities of 3% per year.



Road Safety Development - Slovakia

Traffic Volume



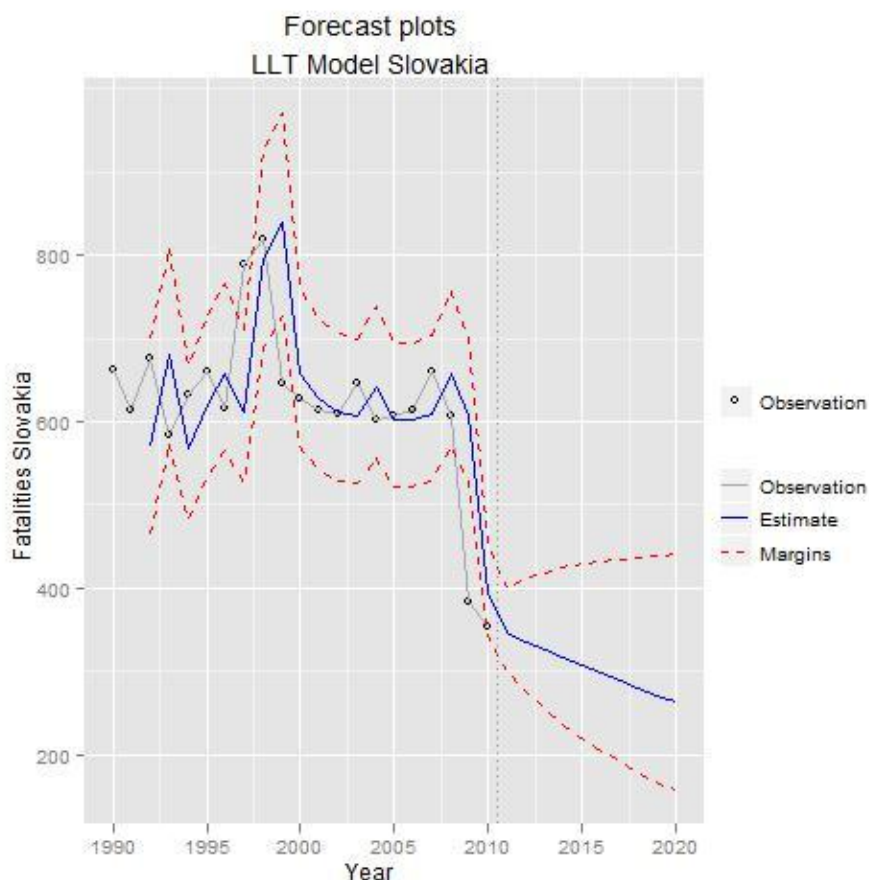
- The number of fatalities normally depends strongly on the amount of traffic.
- The best available estimate for traffic volume is the number of registered passenger cars (passenger car fleet per 1000).
- Development and measurement:
 - o Moderate increase over the years
 - o Strong decrease from 2003 to 2004. joining the EU involved the obligation to acquire a new licence plate for each registered car. Unused cars did not get new plates leading to a cleaning of the database.
- Relation between traffic volume and fatalities:
 - o No relation can be established between the number of fatalities and this mobility estimate.
 - o No mobility scenario can be calculated.
- Forecasting model (technical definition [2]):
 - o Local Linear Trend model.
 - o Variable: yearly number of fatalities.
 - o Fixed components: slope.



Road Safety Development - Slovakia

Forecasts to 2020

- If road safety is improved at the same rate as previously, the following forecasts can be made for the number of fatalities in 2020:



If RS efforts continue at the same level, the expected number of fatalities in 2020 is 263.

Forecast of road-traffic fatalities in Slovakia up to 2020

Year	Prediction	Lower CI	Upper CI
2011	347	261	461
2012	336	226	501
2013	326	199	535
2014	316	177	565
2015	307	159	593
2016	298	143	621
2017	289	129	647
2018	280	116	674
2019	271	105	700
2020	263	95	726

Disclaimer

- Statistical forecasting does not offer a definite prediction of what is *actually* going to happen in the future.
- The estimates are based on the “business as usual” assumption: no *principal* changes between past and future development.
- Even in these conditions future outcomes are uncertain. This uncertainty is represented in the confidence intervals (plotted in the red margins: 68%; printed in table: 95%).



References

- [1] EC National Expert for road accident statistics and road safety performance indicators.
- [2] Dupont & Martensen (Eds.) 2012. Forecasting road traffic fatalities in European countries. Deliverable 4.4 of the EC FP7 project DaCoTA.
- [3] Bijleveld F., Commandeur J., Gould P., Koopman S. J. (2008),. Model-based measurement of latent risk in time series with applications. Journal of the Royal Statistical Society, Series A, 2008.
- [3] Martensen & Dupont (Eds.) 2010. Forecasting road traffic fatalities in European countries: model and first results. Deliverable 4.2 of the EC FP7 project DaCoTA.
- [4] Commandeur, J. & Koopman, S.J. (2007). An Introduction to State Space Time Series Analysis. Oxford University Press.

