



DEVELOPMENT OF THE SAWLOGS SUPPLIES IN THE SLOVAK REPUBLIC

Ján Parobek
Erika Loučanová
Martina Kalamárová



Content

Introduction

- Current situation –Green Report
- Development of sawlogs supplies
- Short term prediction

Methodology

- Quarterly Timber Statistic
- Period 15 years (1998-2013)
- Regression analysis

Results

- Exponential regression
- Linear regression



Methodology

$$y = f(X, \beta) + \varepsilon$$

where:

$f(x, \beta)$ is a regression function,
 β – unknown parameters,
 y – sawlogs supply,
 ε – vector of random errors
 x – time,

Research focuses on analysis of sawlogs supply in Slovakia

- Analysed development of wood assortments of the III class
- 16 years, from 1998 until 2013
- Prediction the future development of logs supply in Slovakia (till 2018)
- Simple model where the dependent variable y (sawlogs supply) only depend on explanatory variables (time)

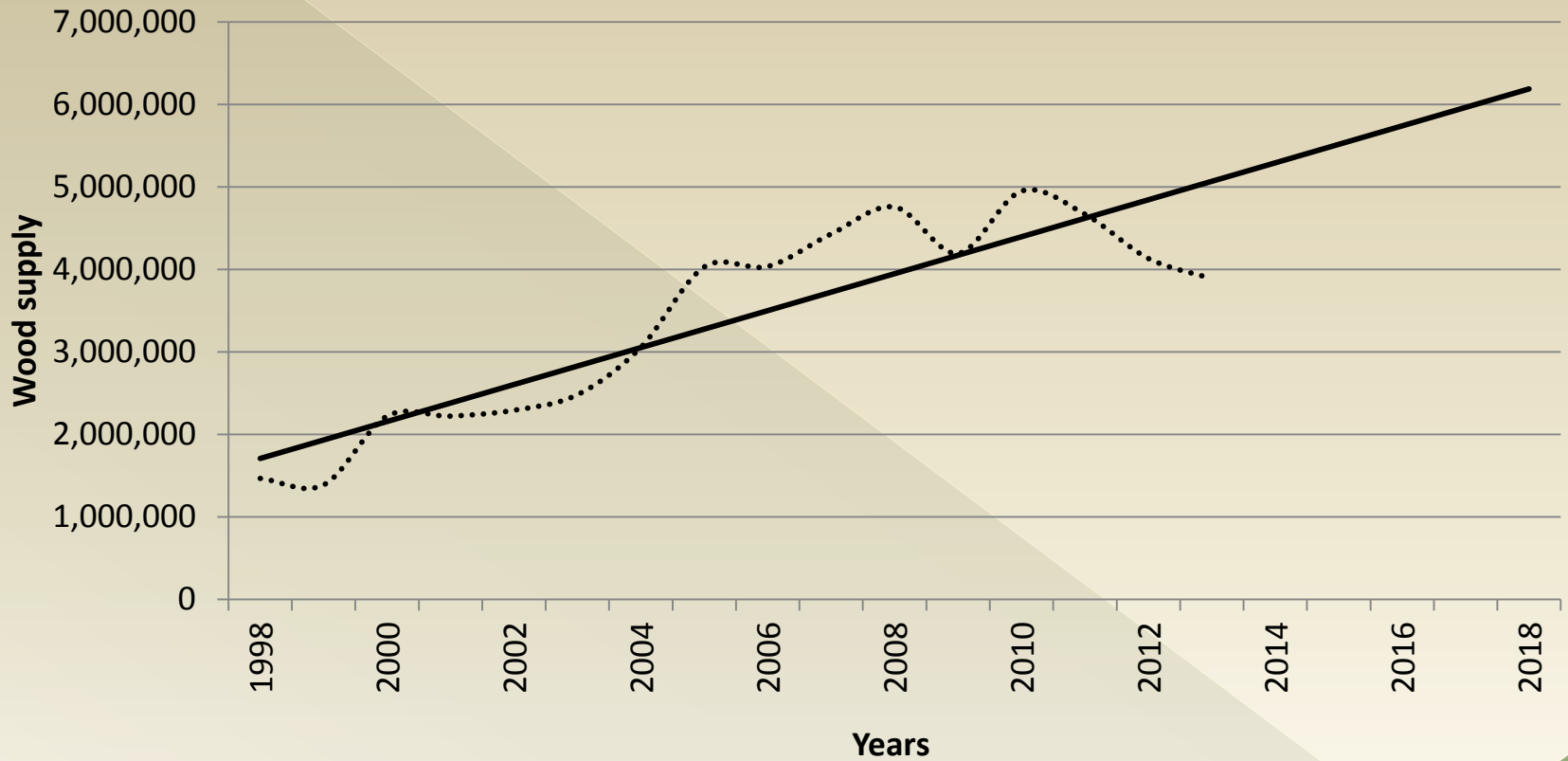


Results

The first approach describes linear regression model to analyze development of logs supply

$$y = 224\,029x + 1\,483\,336$$

- logs supply increased from 1.46 mil m³ in 1998 to 5.29 mil. m³ in 2014
- estimation that supply will be increased for next years and this year reach a value 5.52 mil. m³



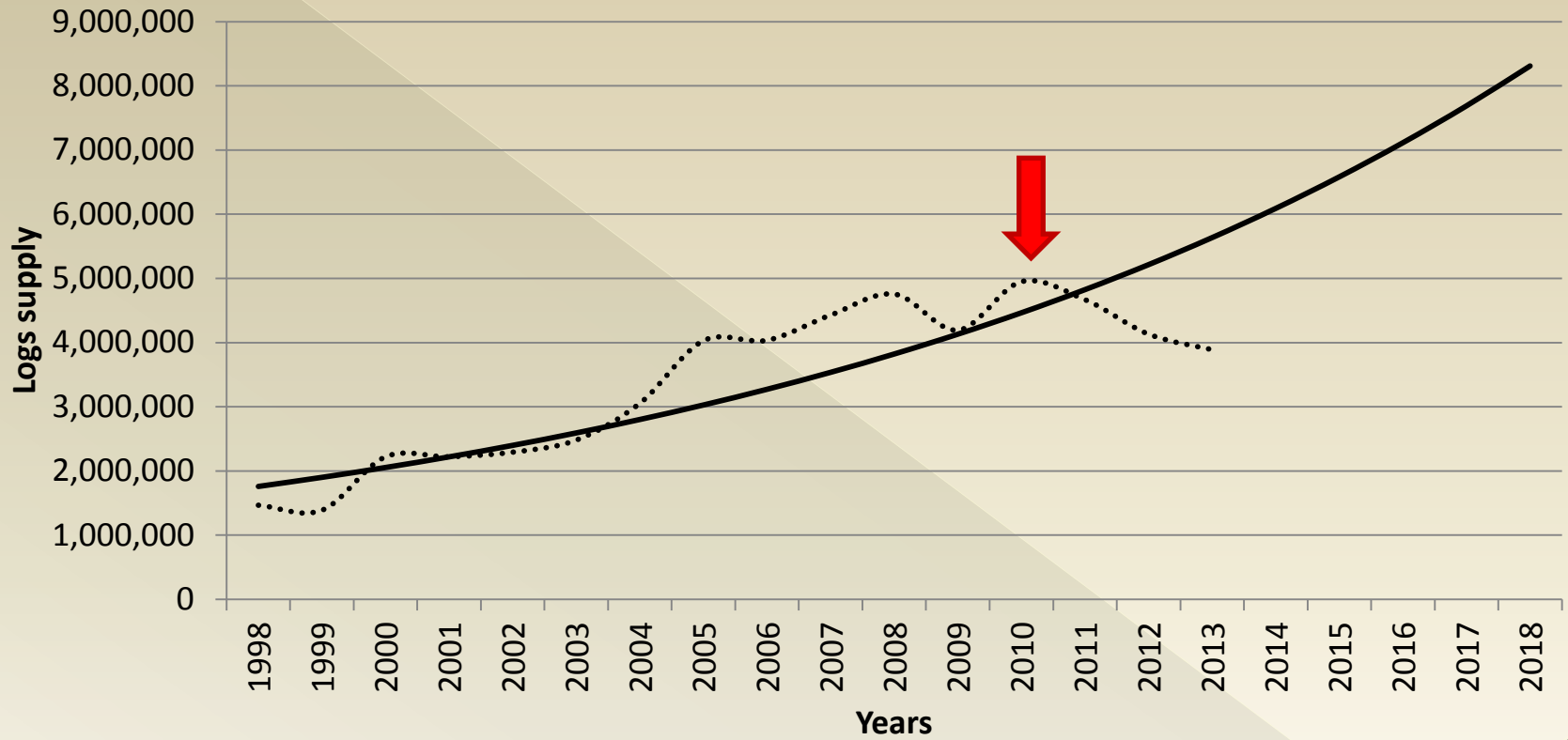


Results

The second model applies exponential regression model to analyse development of logs supply

$$y = 1\,626\,462 * 1,081^x$$

- exponential model assumes 1.47 mil. m³ in 1998 and 6.09 mil. m³ in 2014





Conclusion

- The curve flattening of modelled empirical values is tested by coefficient of determination
- Linear model the value of coefficient of determination is high about 0.78 and standard error is very high (586 320)
- Linear model is a more accurate estimate of the future development
- The analysis confirmed positive development of logs supply
- During the period the volume of supply has increased several times
- 2010 the impact of the crisis caused a drop of the supply (3.89 mil. m³)



Thank you for your attention!

Ing. Ján Parobek, PhD.
Ing. Erika Loučanová, PhD.
Ing. Martina Kalamárová, PhD.
e-mail: parobek@vsld.tuzvo.sk
Department of Marketing, Trade and World Forestry
Technical University in Zvolen
Masarykova 24, 960 53 Zvolen, Slovakia