



Development of the Latvian Macroeconomic Model in the Context of Competitiveness

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LAIMA 9 - Latvian Inter-industry Model, Annual, with 9 Industries

For Training, Education and Research

Contents

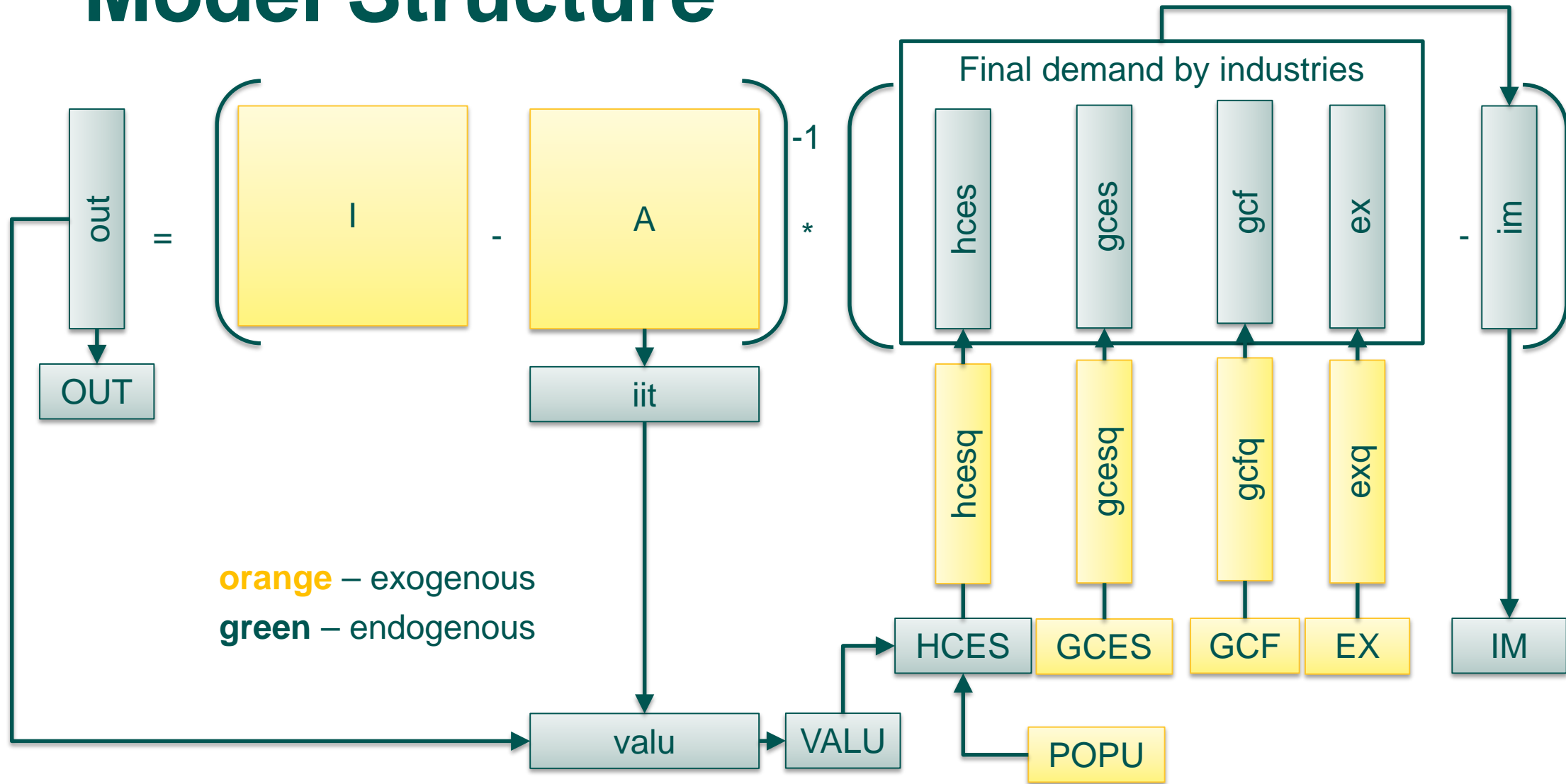
- Model structure and ideas
- Some data issues
- Further tasks

Model Structure

- 9 industries:
 - Agriculture
 - Industry
 - Construction
 - Trade and hospitality
 - Transport
 - Public administration
 - Education
 - Health care
 - Other services

```
ex[i] = exq[i] * EX[t];
im[i] = imq[i] * out[i];
IM[t] = im.sum();
hces[i] = hcesq[i] * HCES[t];
gces[i] = gcesq[i] * GCES[t];
gcf[i] = gcfq[i] * GCF[t];
fd = hces + gces + gcf + ex;
GDP[t] = HCES[t] + GCES[t] + GCF[t] + EX[t] - IM[t];
out = !(I - AT) * (fd-im);
OUT[t] = out.sum();
iit = ebemul(colsum(AT),out);
IIT[t] = iit.sum();
valu = out - iit;
VALU[t] = valu.sum();
```

Model Structure



Modelling Population

Total increase of population

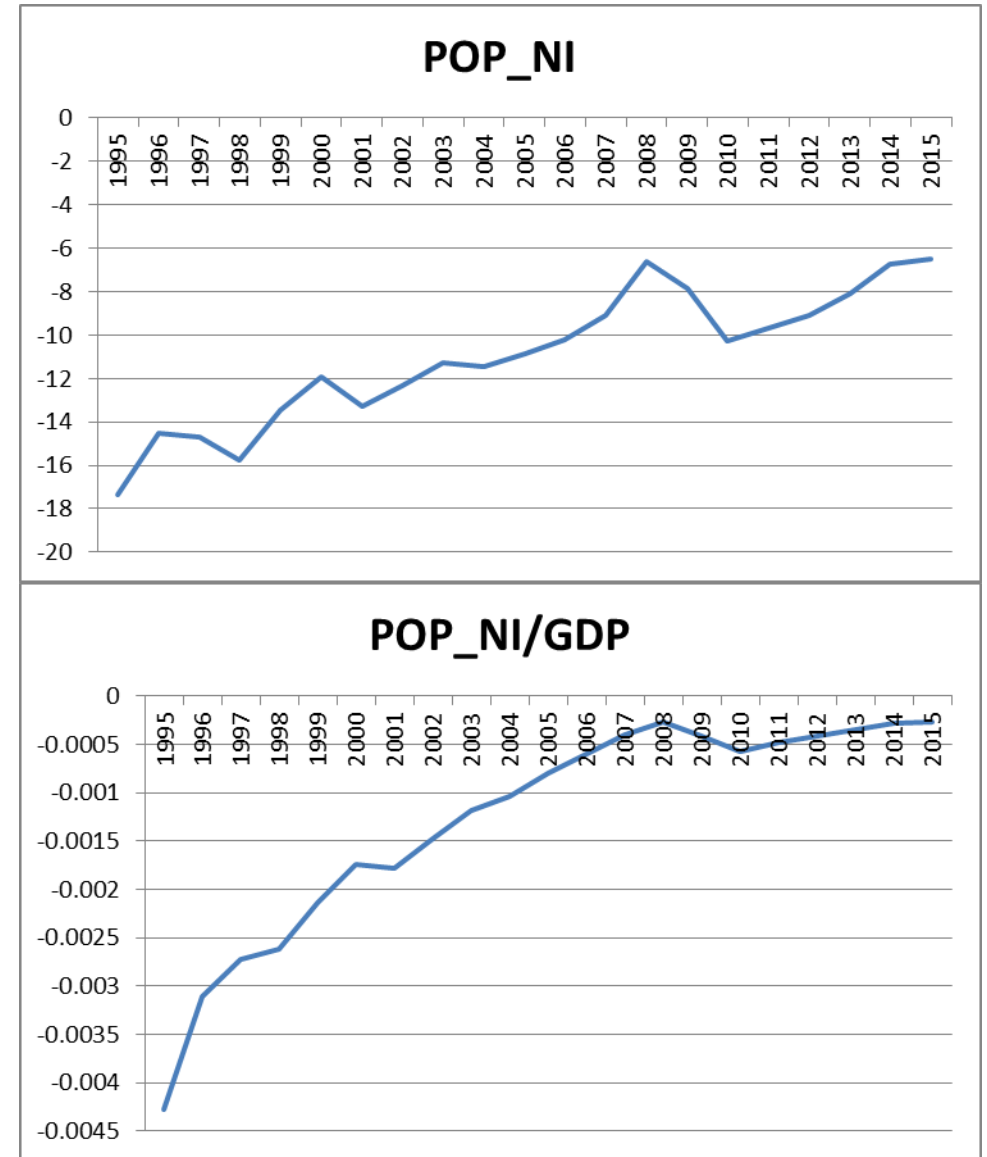
$$\text{POP}_I[t] = \text{POP}_{NI}[t] + \text{POP}_{NM}[t];$$

Number of population at the beginning of the year

$$\text{POP}_{BY}[t] = \text{POP}_{BY}[t-1] + \text{POP}_I[t-1];$$

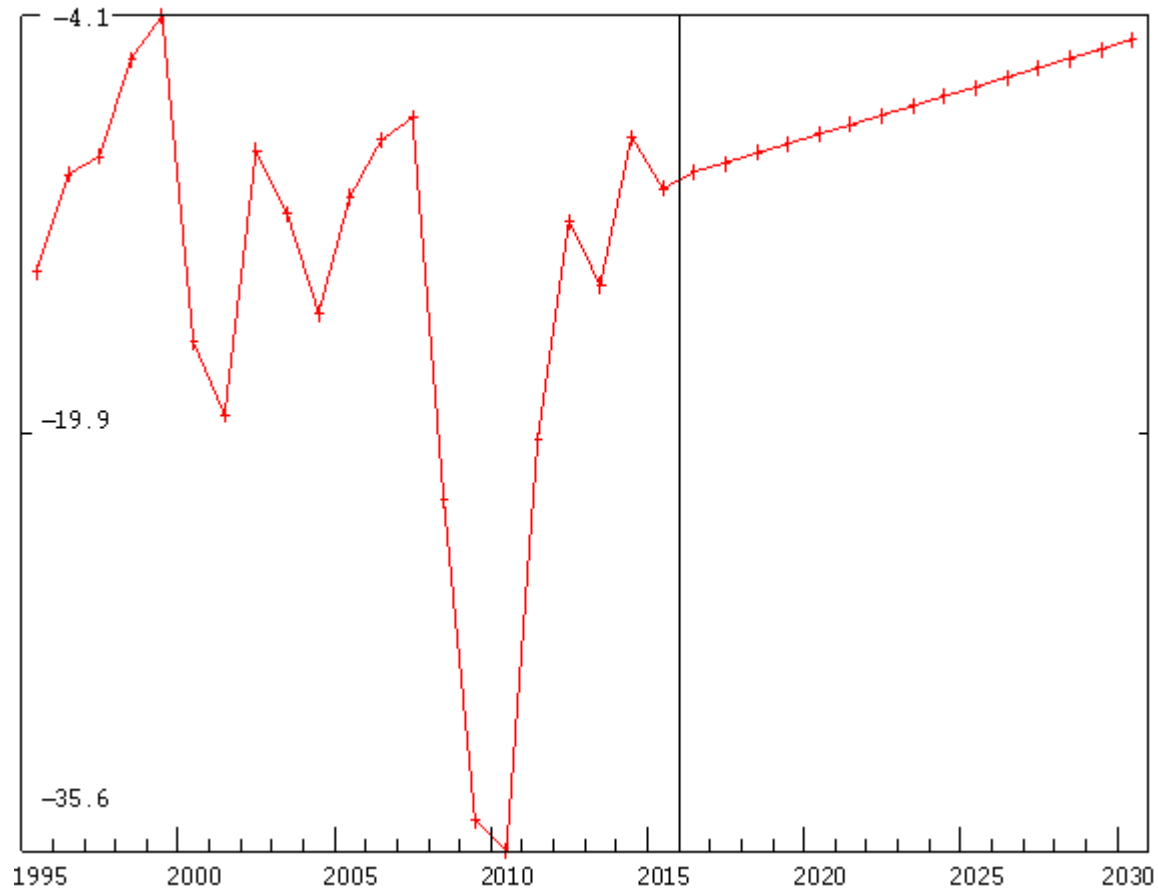
Average number of population

$$\text{POPU}[t] = \text{POP}_{BY}[t] + 0.5 * \text{POP}_I[t]$$



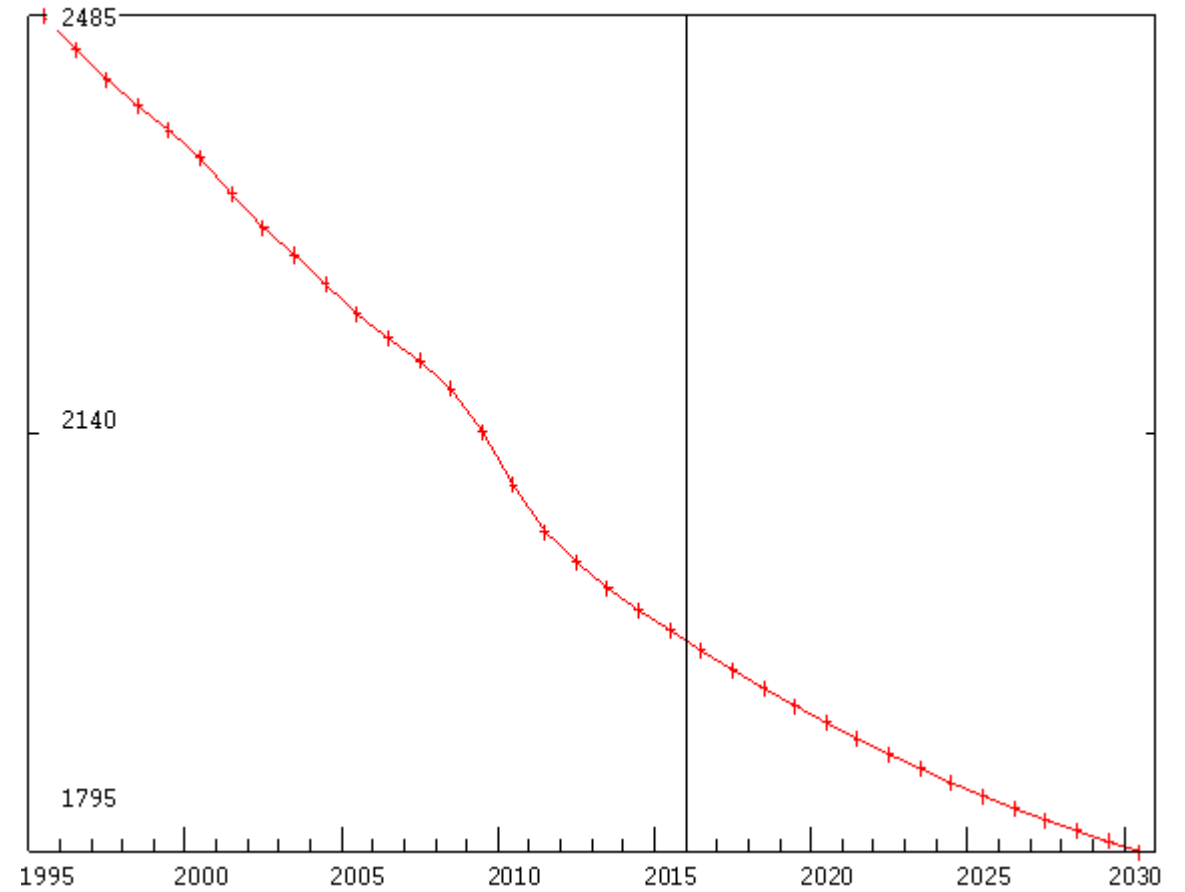
Model Runs

Net Migration



+ POP_NM

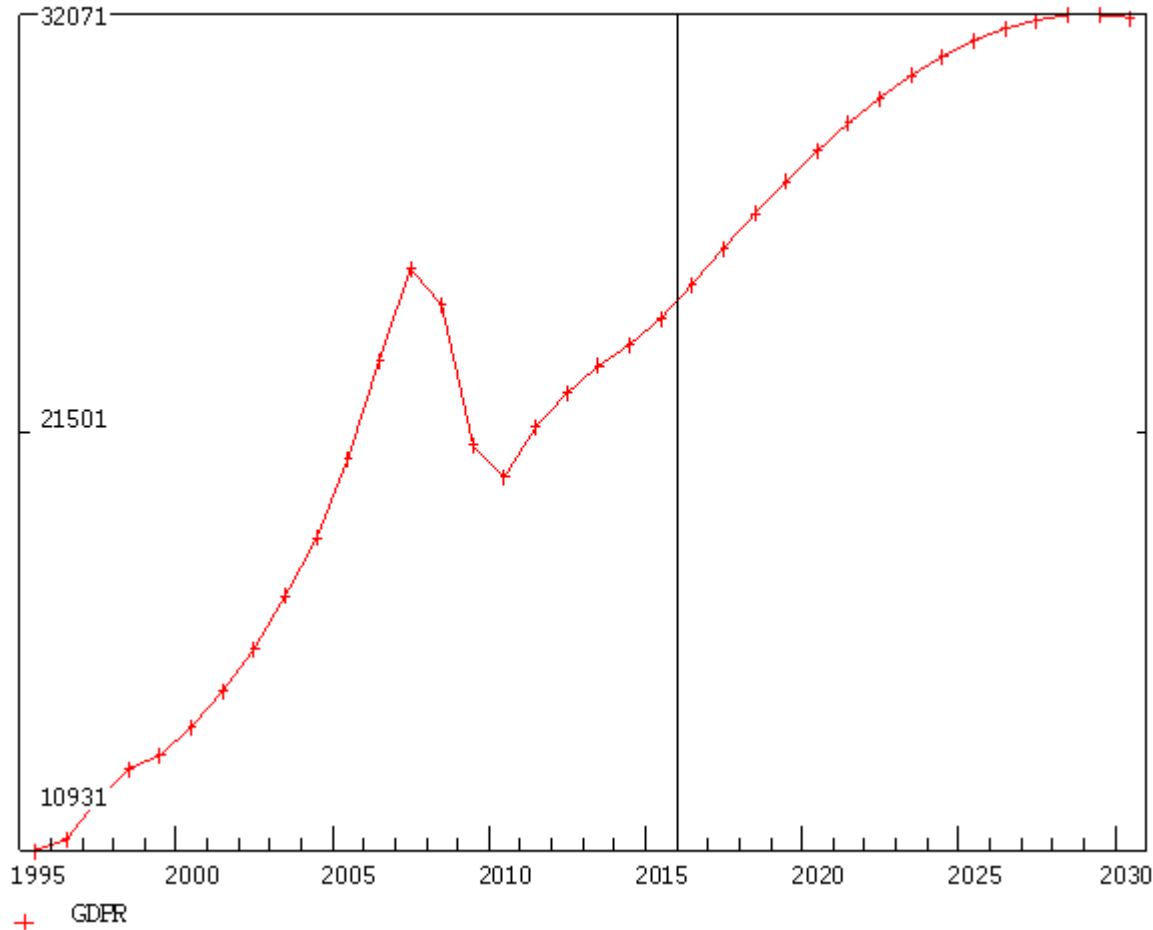
Number of Population



+ POP_U

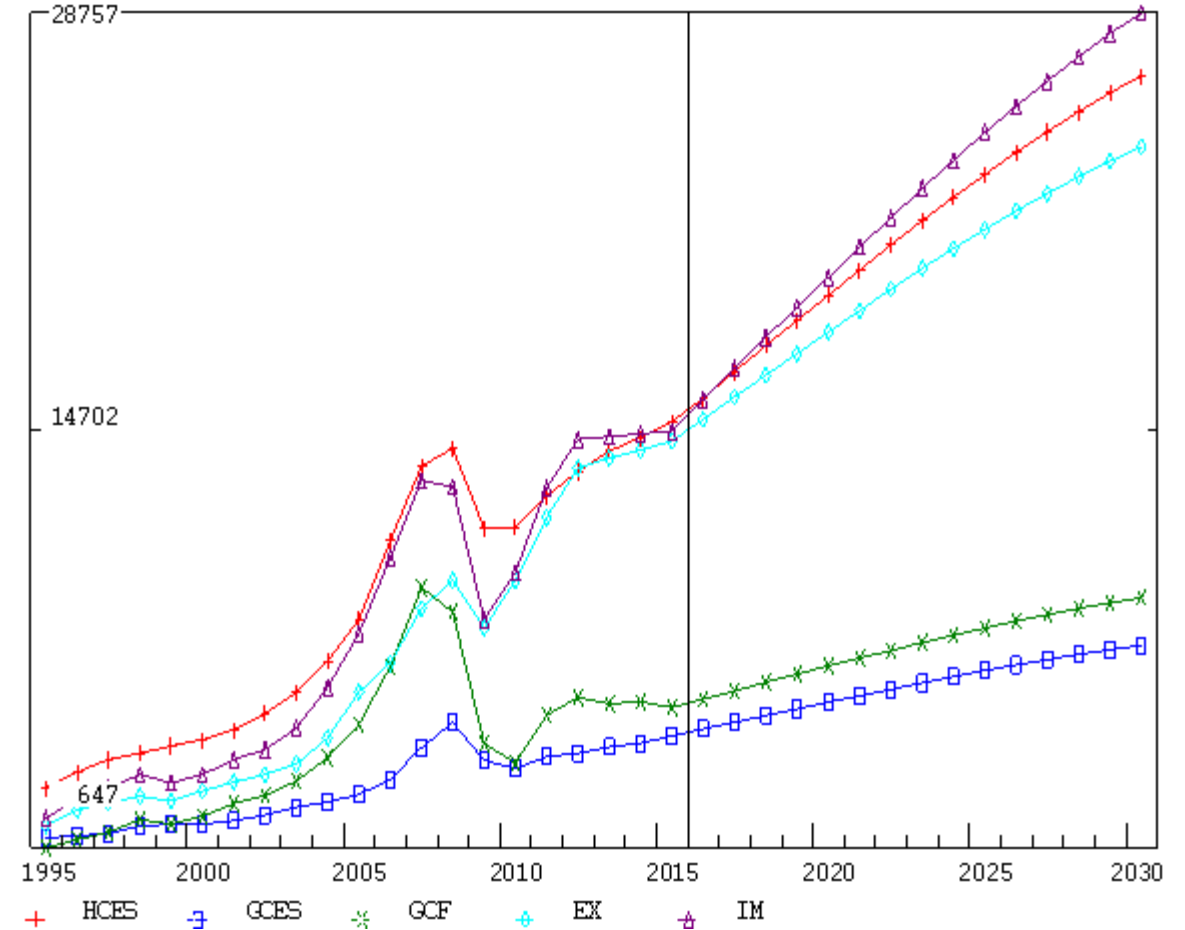
Model Runs

Real GDP



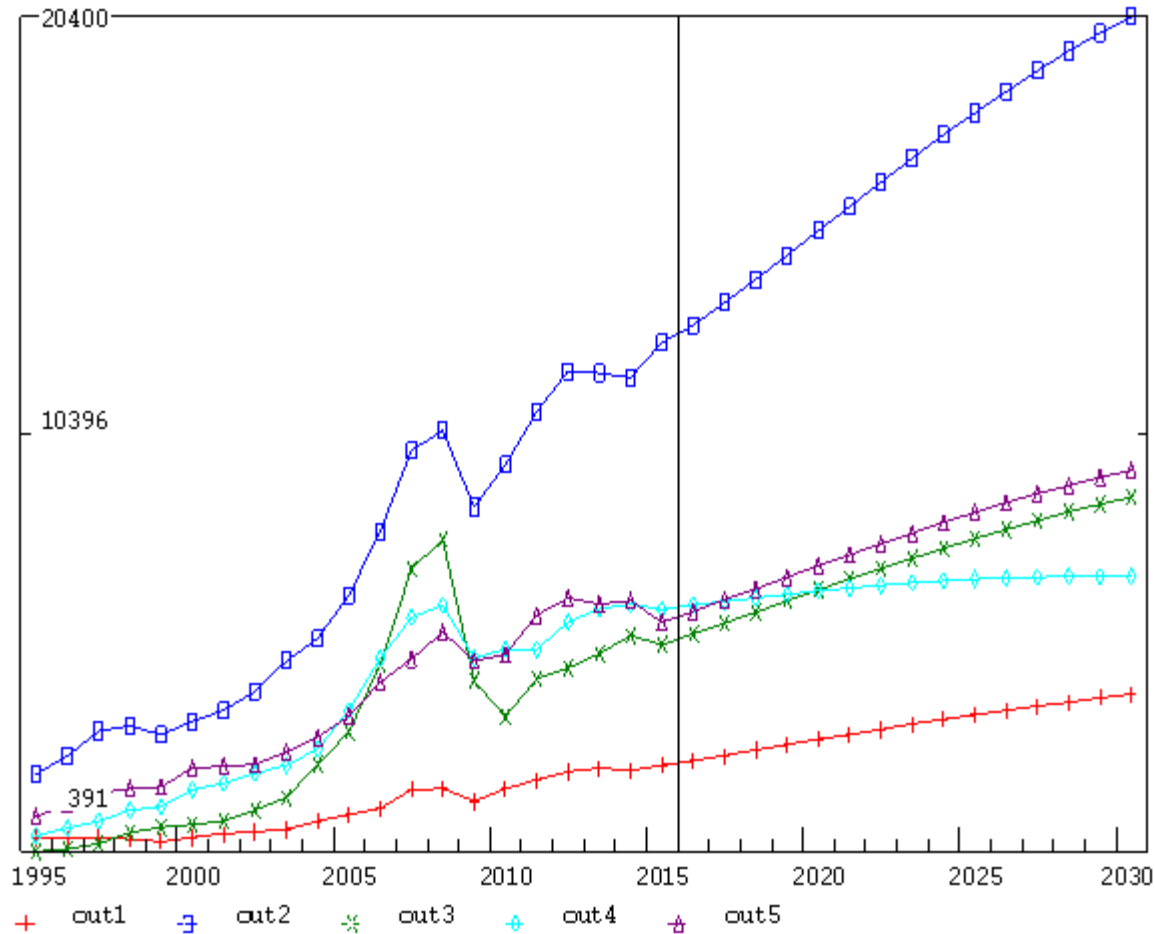
Riga Technical University

GDP use

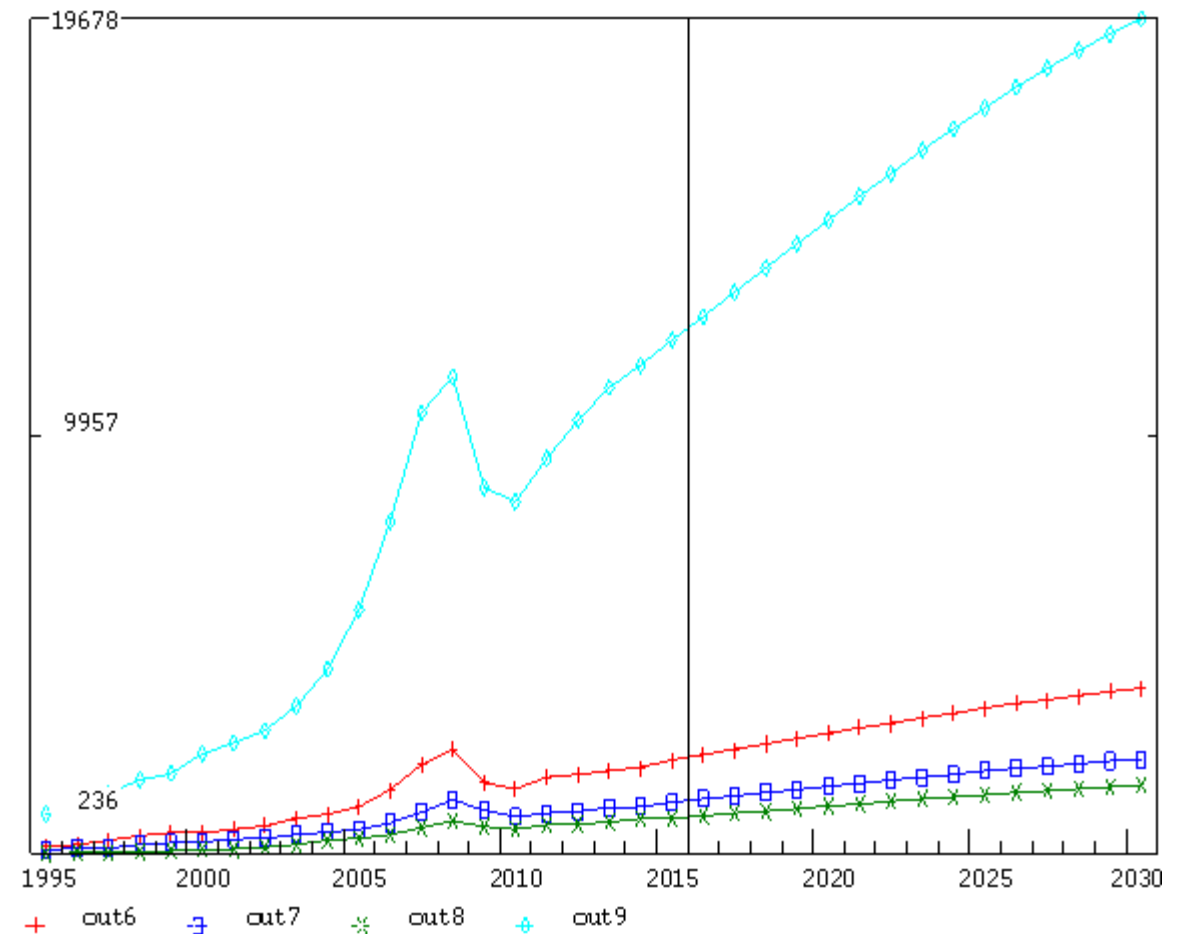


Model Runs

OUTPUT by industries



OUTPUT by industries

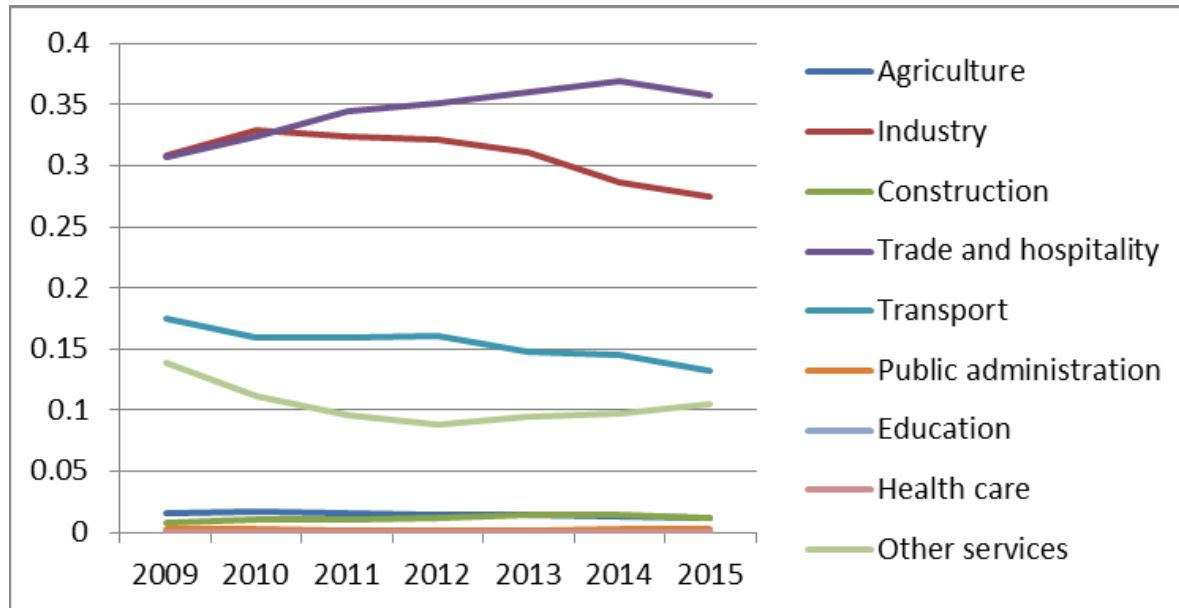


Competitiveness

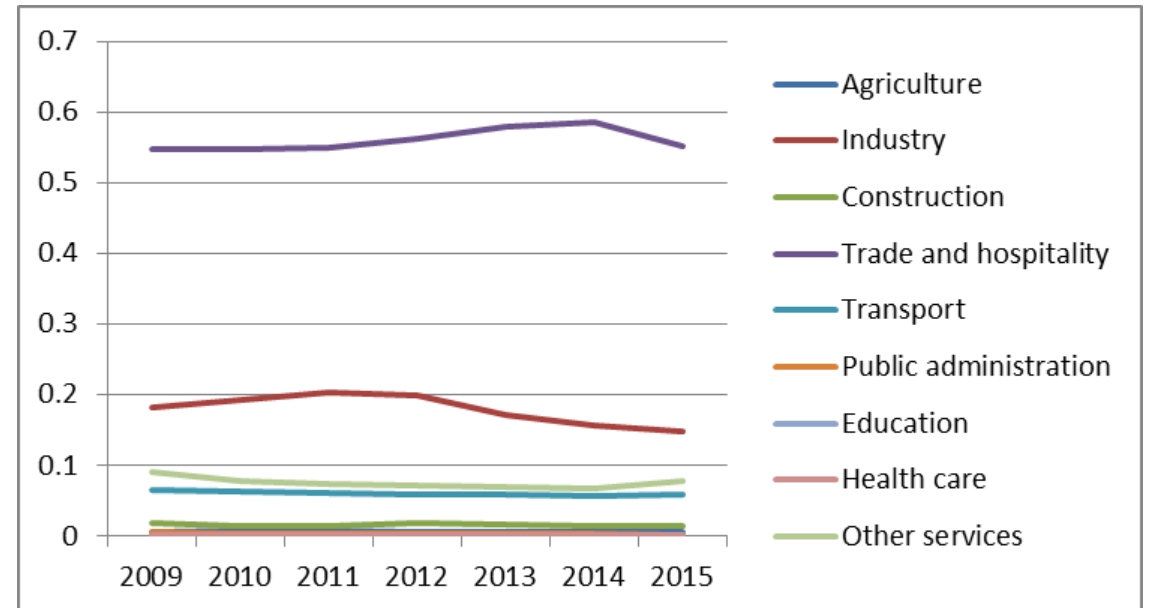
- Exports + Export Structure
 - Increasing shares for more competitive industries
- Input-output coefficients → value added per unit of output
 - Less inputs, more effective production
- Labour productivity
 - Increases for competitive industries
- Unit labour costs
 - Increases less than productivity for competitive industries
-

Some Data Issues

■ Export structure



■ Import structure



Some Data Issues

- «Updating IO»
- RAS?

Further Tasks

- Update IO tables for other years
- Improve the structure of the model
- Get more detailed and recent IO table
- Make another version of LAIMA



Thank you