

# Swedish NAO experience

with data driven performance audit and model for long term predictions

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# Introduction

- › Increased focus on data driven performance audit and quantitative methods in recent years
- › Focus on:
  - Methods for establishing causality in effect studies
  - Better availability to micro data from public entities
  - Using analysis of quantitative data to achieve more credible audit reports
- › Big data analysis
  - No current ongoing projects or strategies involving “big data”
  - Probable causes:
    - *Uncertain legal status (can we collect data for this purpose?)*
    - *“Audit culture” (can we use big data in performance audit?)*
    - *Current staff has other competences (economists, political scientists, sociologists)*
    - *Data needed may not be structured for big data analysis*

## *Abolition of audit obligation for small limited companies*

- › Objective: impact evaluation of abolition of audit obligation
- › Data sources: Statistics Sweden, Swedish companies registration office, Bisnode AB and Swedish inspectorat of auditors.
- › Coarsened exact matching to identify comparative group
- › Measured growth, errors in annual reports, risk of tax evasion
- › Result: reform did not stimulate growth, errors increased, companies that opted out were mainly in industries/ sectors of high risk of economic crime and tax evasion

## *Effects of the Swedish public employment service's preparatory and orientation training*

- › Objective: impact evaluation of a costly training
- › Data sources: microdata from the Swedish public employment service and Statistics Sweden
- › Propensity score matching and coarsened exact matching to identify comparative groups
- › Measured the participants' labour market outcome from participation in Preparatory and Orientation Training compared with being openly unemployed or participating in the Work Placement programme
- › Result: the program could be more effective if focus on using it for the groups for which it has been most beneficial.



## *Refused sickness and activity compensation*

- › Objective: study the extent to which the Swedish Social Insurance Agency makes correct assessments in reviewing the right to SA
- › Data sources: microdata and appeal decisions from the Swedish Social Insurance Agency, microdata from the National Board of Health and Welfare
- › Natural experiment – birthdate decides which office will handle your appeal. Born early or late in the month is random, so variation in equivalent cases should be due to differences in assessment by the officer handling your case or appeal.
- › Result: No indication of too strict application of the regulation. Instead discrepancy between the requirements for granting SA, and the ability of persons insured to support themselves in the labour market.



## *Efficiency and productivity of district courts*

- › Objective: examine long-term efficiency, scale efficiency and productivity development in district courts as well as factors distinguishing efficient and inefficient courts.
- › Method: Data envelopment analysis (DEA)
- › Data: input variables – staff and costs for facilities  
output variables – settled cases
- › Result: size matters for efficiency whereas other studied factors (staff turnover, education requirements and amendment frequency in superior courts) don't seem to matter. Productivity has decreased over the years.



# SESIM – model for long term prediction

- › SNAO manages a dynamic simulation model called SESIM
- › Developed by government in cooperation with researchers (1997)
- › Forecast horizon up to 100+ years
- › For analysis of: pension system, ageing issues, lifecycle redistribution, generational redistribution
- › **Dynamic ageing:** changes in individual, and household, characteristics over time by simulation of estimated statistical models.
- › [www.sesim.org](http://www.sesim.org) (in English)
  
- › Ongoing projects in performance audit using SESIM:
  - Government interventions for immigrant women outside of the labour force
  - Effects of fees in the premium pension on future payouts for individuals

