

# HUMAN AND SOCIAL DEVELOPMENT IN THE CONTEXT OF ECONOMIC GROWTH

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# Introduction

- Certain factors determine the optimal way to develop public policies and assess the government efficiency.
- Income inequality is a major factor that may even influence democracy itself. It can be influenced by different taxation policies or optimal revenue redistribution policies (Mirrlees - Fair), possibly by tagging too (Akerlof).
- Economic growth, although an important indicator, does not often provide a complete picture and can not be considered the only factor in poverty reduction.
- ***What are the right levers to combat poverty?***
- The research analyzes a series of specific indicators for a group of states over a period of time in order to provide an appropriate picture that leads to the development of adequate public policies to combat extreme poverty. The study also creates a tool to compare public policies that can lead to best practice.

# Overview

## □ **Project Description**

- The analysis of poverty indicators, corroborated with the Human Development Index, per capita income, and inequality of income distribution

## □ **Quantitative methods used**

- Correlation analysis, Data envelopment analysis with panel data

# Results

## □ Key Results

- Creating a tool to compare the effectiveness of public policies on poverty alleviation by analyzing the dependence between variables
- Building an aggregate indicator to outline the overall public policy effectiveness in combating poverty using the Malmquist indicator
- Creating a tool to compare the effectiveness of public policies to combat poverty

# Dataset

- Dataset used is related to the period 2007 - 2015 obtained from public data sources, extracted from Eurostat, OECD, World Bank
- **Data sources**
- <http://ec.europa.eu/eurostat/data/database> (04.10.2017)
- <https://data.oecd.org/> (accessed on 04.10.2017)
- <https://data.worldbank.org/> (accessed on 04.10.2017)
- **Countries analyzed** : Austria, Belgium, Bulgaria, Cyprus, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Italy, Latvia, Lithuania, Luxembourg, Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Spain, Sweden, Switzerland, United Kingdom

# Output Variable

- For poverty, it was analyzed the indicator ***People at risk of poverty or social exclusion***: refers to the situation of people either at risk of poverty or severely materially deprived or living in a household with a very low work intensity (AROPE)
- The indicator represents the share of the total population which is at risk of poverty or social exclusion. It is the headline indicator to monitor the EU 2020 Strategy poverty target

# Input Variables

- It was analyzed the **Human development index (HDI)**. The indicator emphasizes that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone.
- The indicator is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions.

# Input Variables

- **Income inequality** is generally given by the Gini indicator. The present study is based on another similar indicator: ***Income quintile share ratio (S80/S20)***.
- The income quintile share ratio or the S80/S20 ratio is a measure of the inequality of income distribution. It is calculated as the ratio of total income received by the 20% of the population with the highest income (the top quintile) to that received by the 20% of the population with the lowest income (the bottom quintile).
- All incomes are compiled as equivalised disposable incomes. Economic growth was analyzed using the indicator ***Adjusted net national income*** (annual % of growth).



# Poverty - Human Development Relationship

## Conclusions of AROPE - HDI dependency analysis

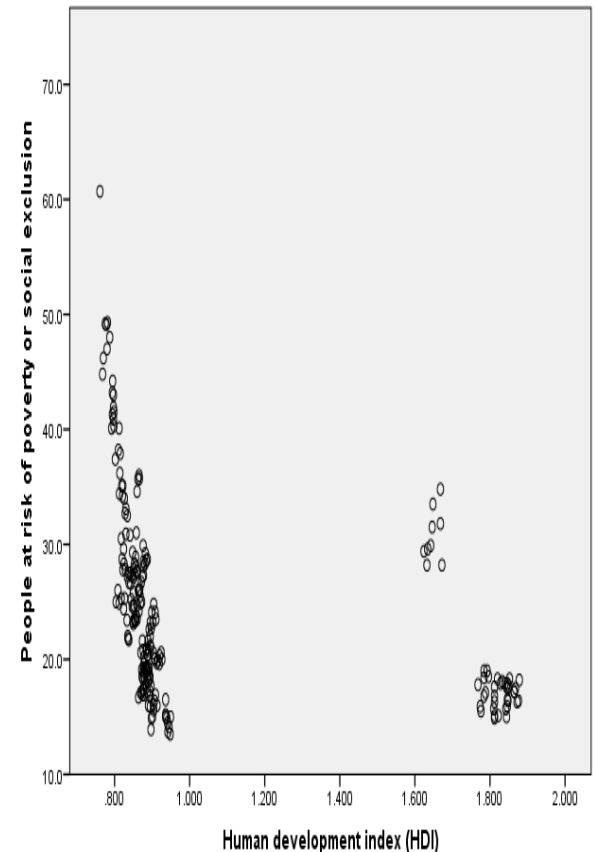
There are **three groups of data clusters** that signify the membership of states to three categories.

**The first cluster is given by Denmark, the Netherlands and Luxembourg**, which have low poverty rates, but with a very high HDI. This actually means that as much as HDI will grow, there remains a residual poverty rate.

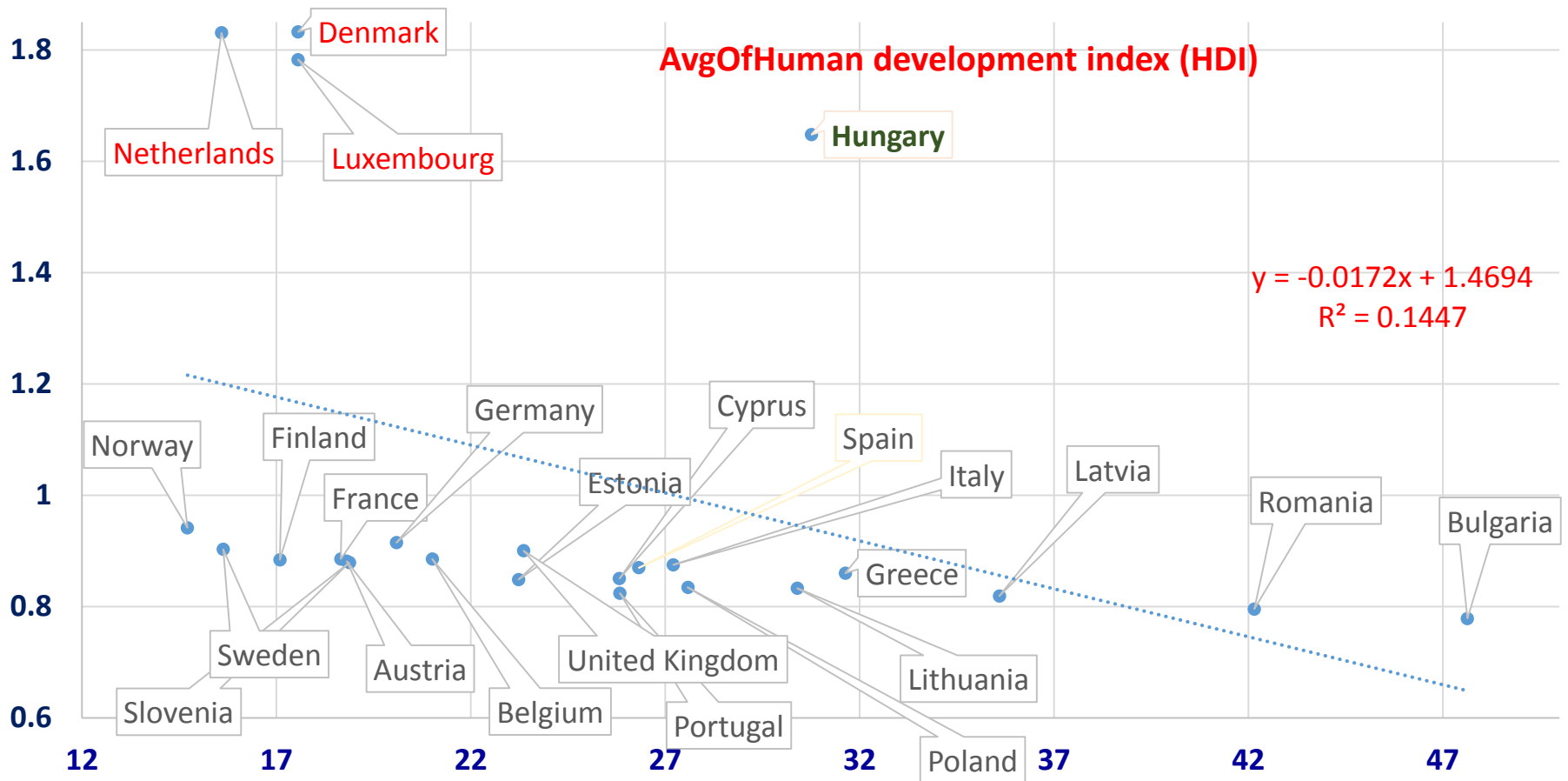
**A second cluster is given by the high HDI rate in Hungary** that contrasts with the poverty rate in the country.

If we exclude these countries from the analysis, we notice that **the third cluster comprises most of the states and a trend of linear growth of poverty with the decrease of HDI**.

## AROE - HDI dependency analysis

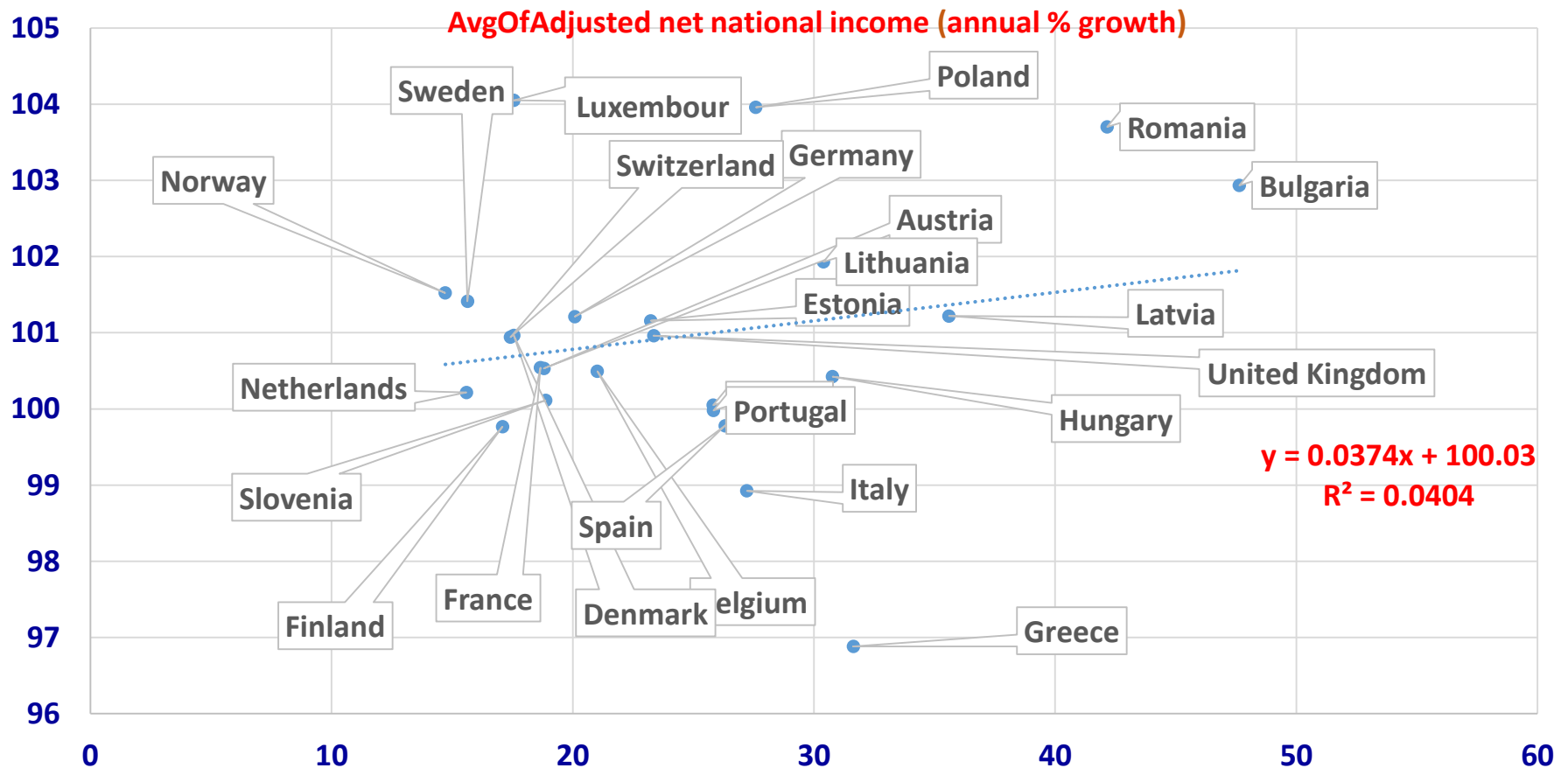


# Poverty - Human Development Relationship



There is a trend of linear increase in poverty rate as HDI declines, although a statistically significant link can not be revealed.

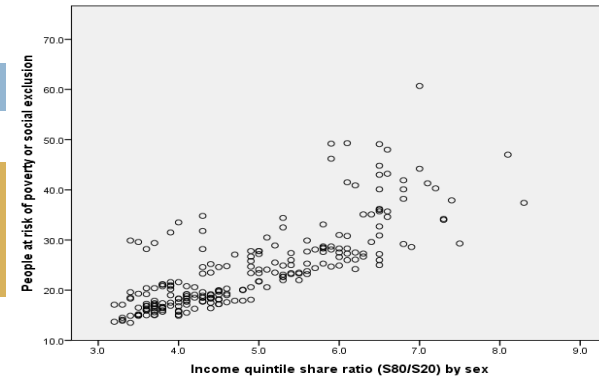
# Poverty – Growth Relationship



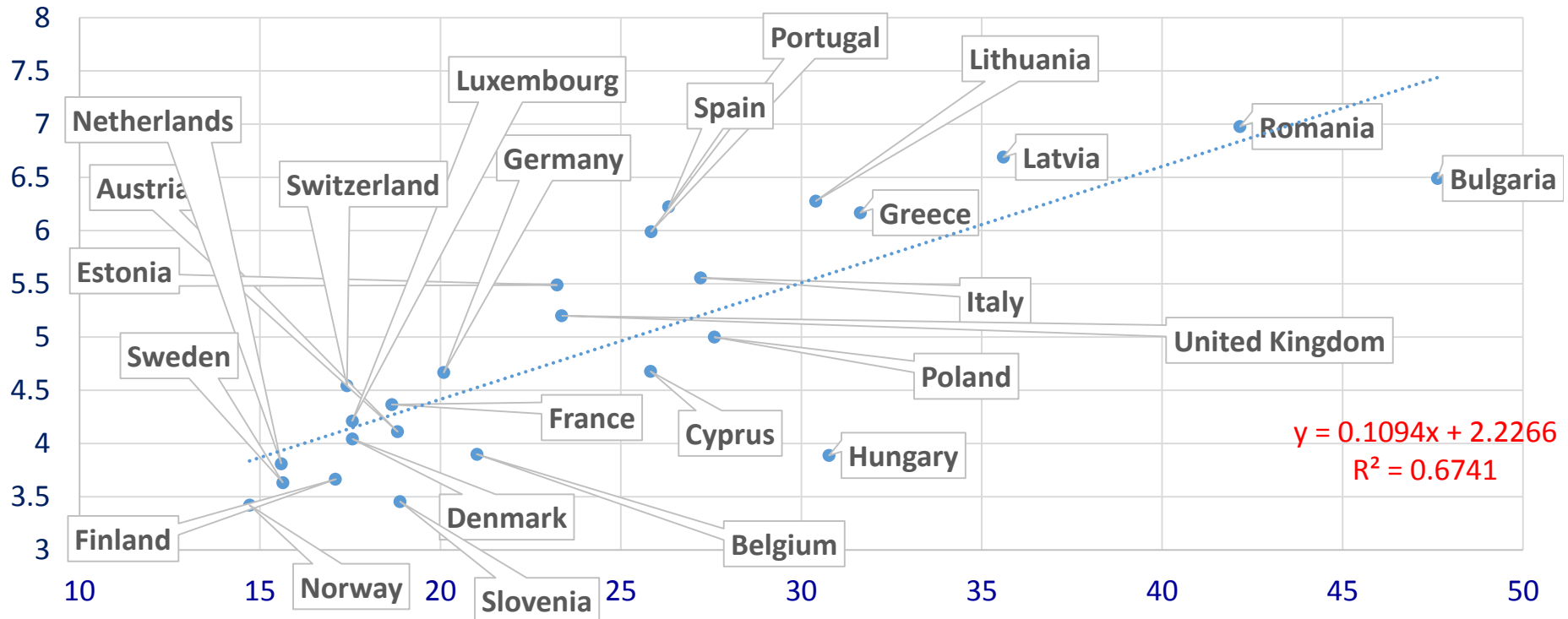
The relationship between **AROPE** and **NIG** does not signify a significant statistical link to be considered.

# Poverty - Income Inequality Relationship

There is a significant and direct correlation between AROPE poverty indicators and income inequality S80/S20

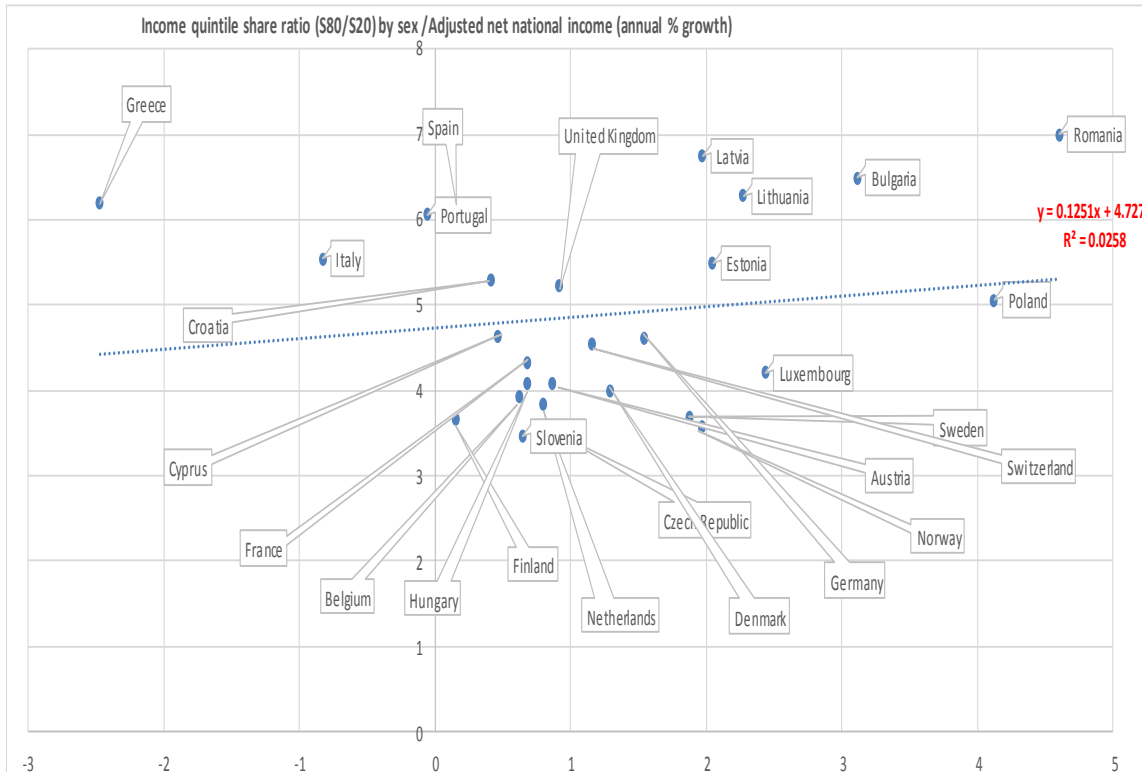
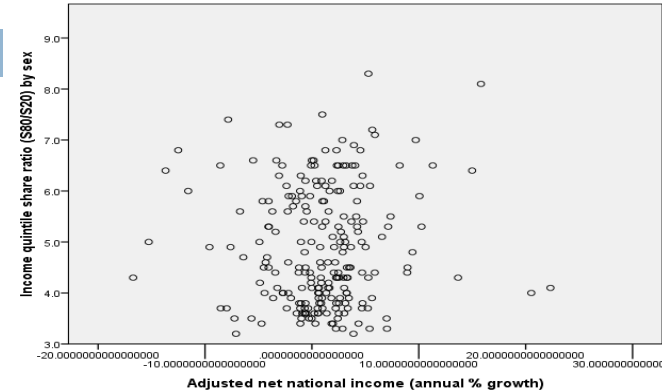


AvgOfIncome quintile share ratio (S80/S20) by sex



# Analysis of Input Indicators

## Economic growth - Income inequality



If we analyze the economic growth against income inequality (S80/S20), we notice **areas with high economic growth but also high income inequality** (ex. Romania).

In these cases, adjustment policies are needed to reduce inequalities such as **CSR**.

There are also cases where **economic growth becomes a priority objective**.

# Correlation Analysis

		People at risk of poverty or social exclusion	Human development index (HDI)	Adjusted net national income (annual % growth)	Income quintile share ratio (S80/S20) by sex
People at risk of poverty or social exclusion	Pearson	1	-.370**	.062	.787**
	Sig. (2-tailed)		.000	.352	.000
Human development index (HDI)	Pearson	-.370**	1	.033	-.404**
	Sig. (2-tailed)	.000		.622	.000
Adjusted net national income (annual % growth)	Pearson	.062	.033	1	.038
	Sig. (2-tailed)	.352	.622		.575
Income quintile share ratio (S80/S20) by sex	Pearson	.787**	-.404**	.038	1
	Sig. (2-tailed)	.000	.000	.575	

\*\* . is significant at the 0.01 level (2-tailed).

There is a **significant and direct correlation (.787)** between **ARPE poverty indicators** and **income inequality S80 / S20**.

Also, there is an **inverse statistical link between HDI and AROPE**.

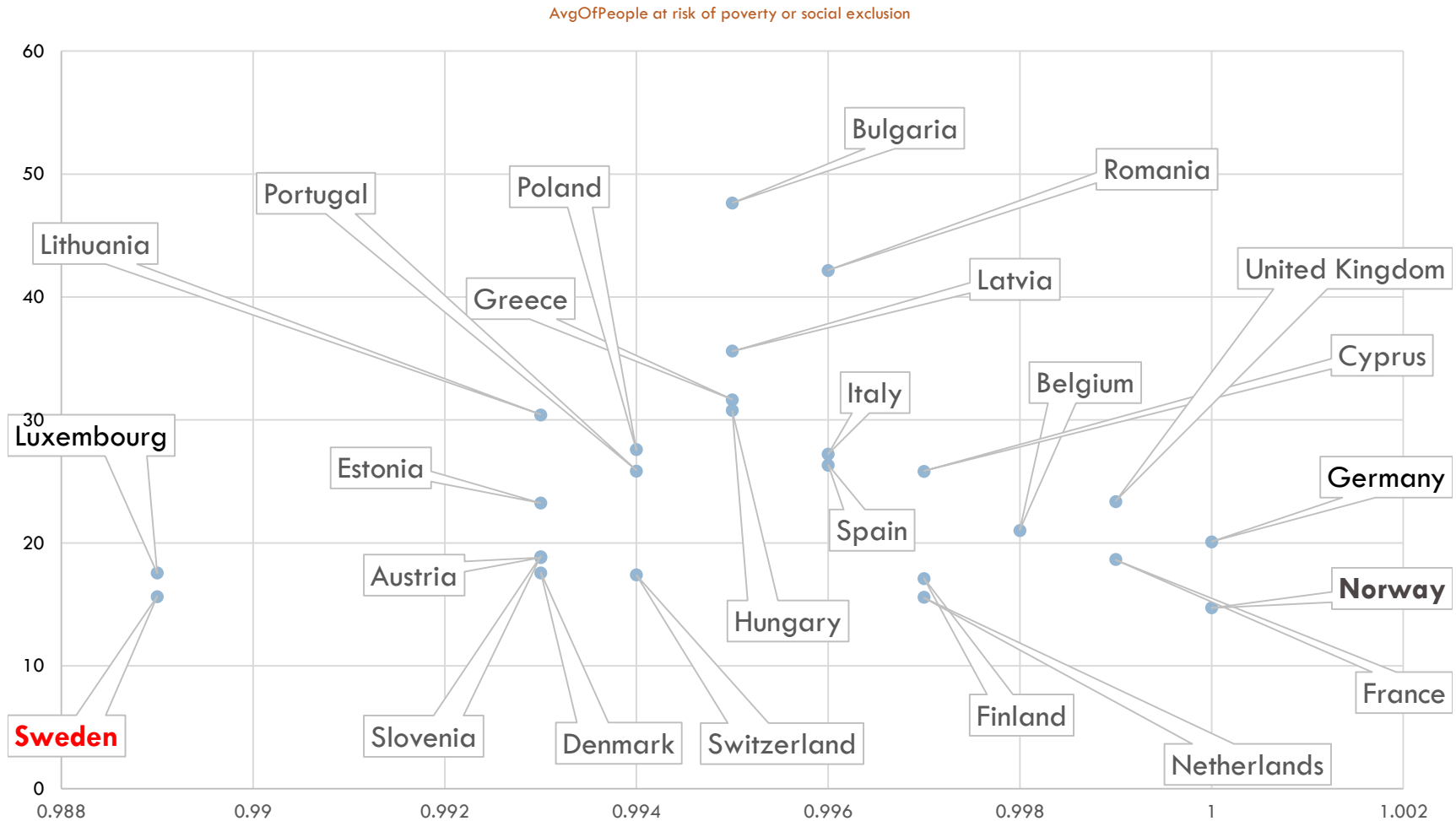
# Data Envelopment Analysis

## General Considerations

- DEA is a nonparametric method used in research and economy for estimating production frontiers and it is easy to apply to panel data.
- For the panel dataset, the Malmquist index is appropriate to compare the overall public policy effectiveness of poverty in a context of income inequality or economic growth.
- The factor of total Malmquist productivity change (TFPC) between two data points is calculated as the ratio between the distances to the border of a particular point for each data analyzed (Fare and Primont, 1997).
- Efficiency measurement is given by Total Multifactorial Productivity.
- A value greater than one ( $>1$ ) using the Malmquist index indicates a positive improvement, while a value of less than one ( $<1$ ) normally indicates a decline in performance. A constant value of 1 means no improvement in performance.

# Malmquist TFPC Index - Poverty

The TFPC indicator can characterize the overall effectiveness of public policies

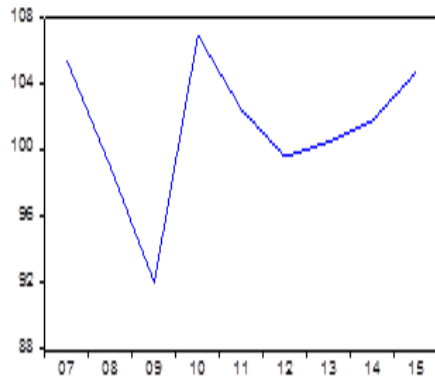




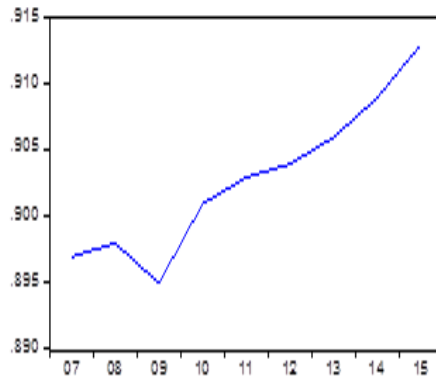
# Significance (TFPC<sub>Norway</sub> > TFPC<sub>Sweden</sub>)

## Sweden

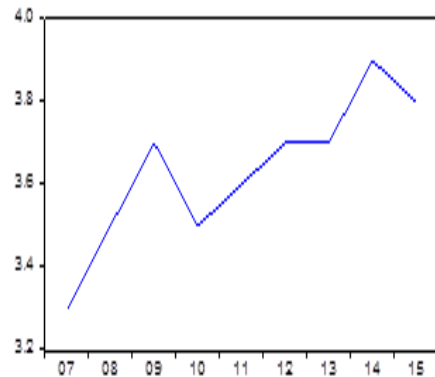
Adjusted net national income (annual % growth)



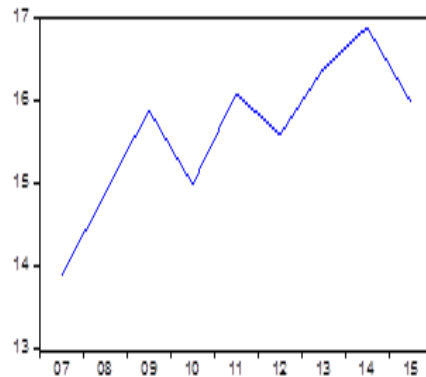
Human development index (HDI)



Income quintile share ratio (S80/S20) by sex



People at risk of poverty or social exclusion

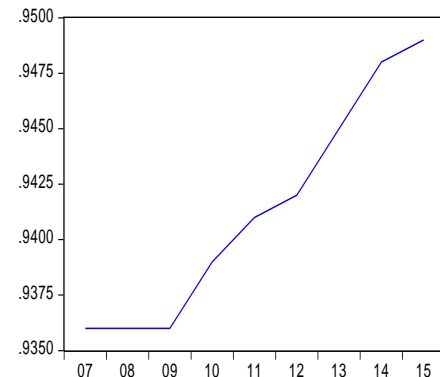


## Norway

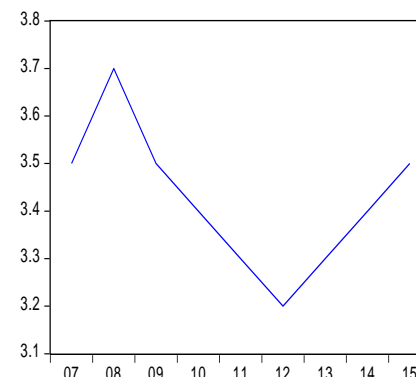
Adjusted net national income (annual % growth)



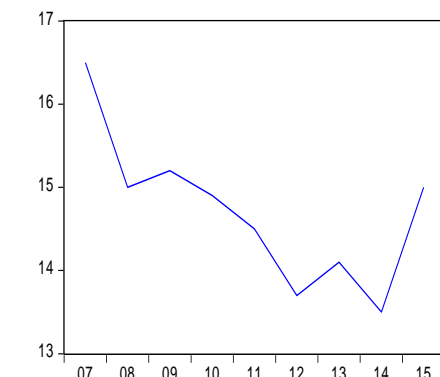
Human development index (HDI)



Income quintile share ratio (S80/S20) by sex



People at risk of poverty or social exclusion



**Decrease in poverty in Norway is due to more effective interventions in reducing income inequality, even if economic growth was slower.**

# Conclusions

- The analysis provides a tool for comparing the effectiveness of public policies on poverty alleviation based on the TFPC indicator, which can be the basis for the construction of a best practice worldwide to be continuously analyzed in benchmarking policies.
- The study reveals that there may be values of HDI growth from which poverty is no longer diminishing and that a policy of combating inequality that does not affect economic growth is convenient.
- One of the active ways of combating long-term poverty is the use of CSR.
- The outcome of the study also confirms T. Piketty's assertions about the direct influence of income inequality on rising poverty, even under conditions of economic growth.
- The limitations of the study are given by the particularity of the data selected (only European countries were analyzed), the reduced number of indicators used, and the limitations of the DEA Malmquist method.
- The next direction of research will be to include in the analysis a larger number of data that will include a larger number of indicators and countries to be analyzed.

# Questions and Open Discussions

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# Thank you!



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