

# Abstracts

The first part of this work presents a reflection about the Sensitivity Analysis usually performed to the nonstandard Instrumental Variable Regression known as the Additive Linear Constant-Effect Model. We evaluate the classical approach by increasing the number of instruments (Chapter 2). Furthermore, a simple alternative to recover the endogenous parameter is proposed based on a two steps optimization process using a modified version of the Anderson-Rubin test and the variance of the estimated errors.

In addition, a second Sensitivity Analysis approach is proposed when the exclusion restriction assumption is suspected not to hold due to the fact that instruments do not meet the classical definition, i.e., instruments must be uncorrelated with the error term of the structural equation, correlated with the endogenous variable and should not influence directly the response variable (Chapter 3). In addition, it is numerically explored the behaviour of classical tests when violation of exclusion restriction assumption has taken place but instrument is extremely weak.

Finally, in Chapter 4 is briefly touched an idea that is expected to be exploited in next few months.

*Keywords for first part:* Regression Analysis; Instrumental Variables; Sensitivity Analysis; Optimization; Bayesian analysis.