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A revision analysis plugin for JDemetra+

Topic 2 – Learning more from what we already know

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Introduction

Many macro-economic variables are revised back in time whenever new data are released or when substantial increases of the information set on which they are built up become available. Users of official statistics often consider revisions as an annoying phenomenon to be taken into account in their analysis, while producers look at revisions as a normal phenomenon to increase progressively the quality and the precision of their data.

Therefore, revisions, broadly defined as any change in the value of a statistic released to the public, are unavoidable whenever statistics are produced that report promptly on economic developments. Analysis of revisions is then of paramount relevance in particular when assessing the performance of alternative nowcasting and forecasting models, as shown in several recent studies.

We present a tool for revision analysis offering a wide range of possibilities covering descriptive and parametric revision analysis to be performed on vertical, horizontal or diagonal vintages extracted from a real-time database that is a collection of vintages indexed by the release date.

Methods / Problem statement

The descriptive measures cover a number of summary statistics aiming to assess the size, variance, skewness and bias of revisions| such measures can be useful to analyse the volatility and direction of revisions, the presence of bias in preliminary estimates, the robustness of first released estimates, and to perform a first analysis of reliability of estimates in terms of how often the sign of later releases changes with respect to the sign of earlier ones. In addition, it includes a module on regression-based parametric analysis covering the check of bias based on OLS regression, the efficiency of revisions, and the check if revisions are news or noise.

Several tests are included to measure heteroscedasticity. Furthermore, a module for VAR-based analysis covering a set of unit root tests, some autocorrelation tests and some cointegration and comovement tests is available. We present a tool for revision analysis developed by Eurostat for the European Statistical System as a plug-in of JDemetra+ software, the new standard software for performing seasonal adjustment.

The tool offers a wide range of possibilities covering the measures described in the introduction. The tool was recently ported for JDemetra+ 2.1 and is available online at: <https://github.com/bogosmith/jdemetraplus-revtool>