Upcoming changes to the OECD Composite Leading Indicators to be implemented in the December 2008 MEI

Background

The **OECD system of composite leading indicators (CLIs),** developed in the 1970s, has been the subject of a recent methodological review to ensure that it maintains its position as an effective leading indicator of business cycles and economic activity.

The review has been motivated by two interrelated aspects. The first relates to the need to ensure effectiveness in the software platforms used in the production of the CLIs and the second concerns the statistical transformations and related methodology used to construct CLIs. The primary focus of this latter driver has been an evaluation of the various methods available for de-trending the indicators used in the construction of the CLIs.

To date the approach used in de-trending estimates has been the Phase-Average-Trend (PAT) method. Advances in computing power, however, provided the catalyst to investigate whether other methods could be used in the CLI system, which led to improvements in the predictive aspects of the CLI as well as other aspects of quality, such as the robustness of the estimates themselves. The opportunity was also taken within this review, indeed this was another driver of the review, to investigate whether the new methods could be incorporated in a more efficient, transparent and automated way; as the PAT method requires manual adjustments to be adopted in the context of turning point insertion, which, although based on considerable expertise, is ultimately a subjective, and, so, not particularly transparent for assessment.

Further information on the composite leading indicators system and methodology can be found at: http://stats.oecd.org/mei/default.asp?rev=2.

Information on coverage and the component series used in the CLI construction can be found at: http://www.oecd.org/std/leading-indicators/oecdcompositeleadingindicatorsreferenceturningpointsandcomponentseries.htm

Changes

The main result of the review has been to move towards a different de-trending and smoothing method – the double Hodrick-Prescott (HP)-filter. Some other methodological process changes have also been introduced but this change to the HP filter has the most significant impact on the estimated cyclical components. The key benefits of the move from PAT to HP filtering concern transparency and robustness in the estimates themselves, as they will in future be less prone to revision. (http://www.oecd.org/std/leading-indicators/41520591.pdf).

The methodological process changes relate to the sequence of filters used in constructing the CLIs. To date the following sequence has been applied: de-trending> smoothing> frequency conversion> normalization. The new system, however, for which first results will be presented in the **December 2008 MEI**, follows the new pattern of: frequency conversion> outlier filtering> de-trending and smoothing> normalization. The key advantage of placing the frequency conversion stage (which applies to quarterly leading component indicators only) at the beginning, is mainly operational: it removes the need to maintain two versions of the filters in the sequence.

Another methodological change concerns the aggregation routines, which have been oriented towards calculating average growth rates as opposed to average levels. This will reduce the impact that arises from components being temporarily or permanently unavailable.

Finally, the review will also lead to a change in the operating platform used. The new system (based on standalone software developed in VB.NET) integrates the production and analytical platforms into a single environment, significantly improving the speed with which estimates can be produced within the system; freeing-up valuable resource time that will allow for more in-depth investigations into a number of areas, in particular the continued identification and relevance of the component series.

The changes identified above, **and to be implemented in the December 2008 figures,** will affect a number of series shown in the Main Economic Indicators publication and database. The following tables highlight these series by subject groups, and apply to all countries. Changes will also occur in zone aggregates of the CLIs.

Components

Code	Before changes	After changes
LOCNxx01.ST	The **ratio to trend of the component** series - applied for series de-trended with a multiplicative model.	REPLACED - the series will contain the normalized component, the state of the component immediately prior to aggregation. All components will have this series version regardless of the de-trending model applied (additive/multiplicative)
LOCNxx03.ST	The **difference from trend of the component series** - applied for series de-trended with an additive model.	DELETED
LOCNxx07.*	The **original** component series.	UNCHANGED - some series versions and frequency segments will be deleted. The goal is to have only one series for each original component, with the highest available frequency. (monthly or quarterly)

Reference series

Code	Before changes	After changes
LORExx01.STSA	**Ratio to trend series** - The original reference series were de-trended with PAT using a multiplicative model.	Will be REPLACED by the **normalized series**. The de-trended series will be normalized. Normalization is done by subtracting the mean of the series, and dividing with its mean absolute deviation. Finally the series is relocated to have a mean of 100.
LORExx04.STSA	Did not exist	NEW **amplitude adjusted form** - this is equivalent to the former ratio to trend series, although a different de-trending method will be used. Comparable with the amplitude adjusted CLI.
LORExx06.STSA	The **trend** of the reference series	REVISED - the series still represent the **trend** of the reference series, but will be revised because of the change of the de-trending method from PAT to double HP.
LORExx07.IXOBSA	**The original reference series**	UNCHANGED
LORExx07.GY	Did not exist	NEW - the **year-on-year growth rate** of the original reference series. Comparable with the year-on-year growth rate of the trend restored CLI.

Composite Leading Indicators

Code	Before changes	After changes
LOCSTL01.ST	The raw CLI - aggregated from the de-trended, smoothed and normalized components.	REVISED - the series will refer to the same concept, but data will be revised because of changes in the calculation methodology.
LOCSTL04.ST	The **amplitude adjusted** form of the CLI; the raw CLI is rescaled, so that its long-term cyclical amplitude equals the amplitude of the de-trended reference series.	REVISED - the series will refer to the same concept, but data will be revised because of changes in the calculation methodology.
LOCSTL05.ST	The **trend restored** series of the CLI is calculated by multiplying the amplitude-adjusted CLI by the trend of the reference series.	REVISED - the series will refer to the same concept, but data will be revised because of changes in the calculation methodology. Comparable with the original reference series.
LOCSTL05.GY	Did not exist	NEW - **the year-on-year growth rate**, reflecting the growth rate over the last 12 months calculated on the trend restored series.
LOCSTL09.ST	The **annualized 6-month rate of change** of the trend restored CLI.	DELETED - replaced by the conceptually similar year-on-year growth rate series.