



The Leading Economic Indicator System of the Philippines

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service statistics to support 2008 SNA implementation

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Outline of Presentation

- I. Background of the Leading Economic Indicators (LEI) in the Philippines
- II. Current LEI
- III. Computation of Composite LEI using the Current and Proposed Method
- IV. Conclusion
- V. Recommendation



Background

- Reviewed and revised three times – 1995, 1997, and 2002
- The compilation of the regular LEI officially started in 1997
- The LEI publication, released every quarter, started also in 1997



- **The publication of the LEI Report was discontinued in 2014**, upon the instructions of the NEDA DG Balisacan, pending the improvements being done on the LEI
- The last LEI publication was released in Q1 2014.
- The Satellite Accounts Division continues to generate the LEI internally while the Statistical Methodology Unit has been tasked together with a consultant to work on the improvement of the LEI.





II. Current LEI System

11 Indicators and a reference series (2000 to date)

INDICATORS	DATA SOURCES
Consumer Price Index	Philippine Statistics Authority
Electric Energy Consumption	Department of Energy
Foreign Exchange Rate	Bangko Sentral ng Pilipinas
Hotel Occupancy Rate	Department of Tourism
Imports	Philippine Statistics Authority
Money Supply	Bangko Sentral ng Pilipinas
Number of New Businesses Incorporations	Security and Exchange Commission
Stock Price Index	Bangko Sentral ng Pilipinas
Visitor Arrivals	Department of Tourism
Terms of Trade Index	Philippine Statistics Authority
Wholesale Price Index	Philippine Statistics Authority
REFERENCE SERIES	
Non-agriculture component of GDP or the GVA of industry and service sectors.	Philippine Statistics Authority



- Composite Leading Economic Indicator

$$CLEI_t = \frac{\sum_{i=1}^{11} w_{i,l_i} z_{i,t}}{11}, \quad t = l_i + 1, \dots, \tau \quad i = 1, 2, \dots, 11 \quad l_i = 1, 2, \dots, 10$$

where

l_i - refers to the lead period of the i th indicator

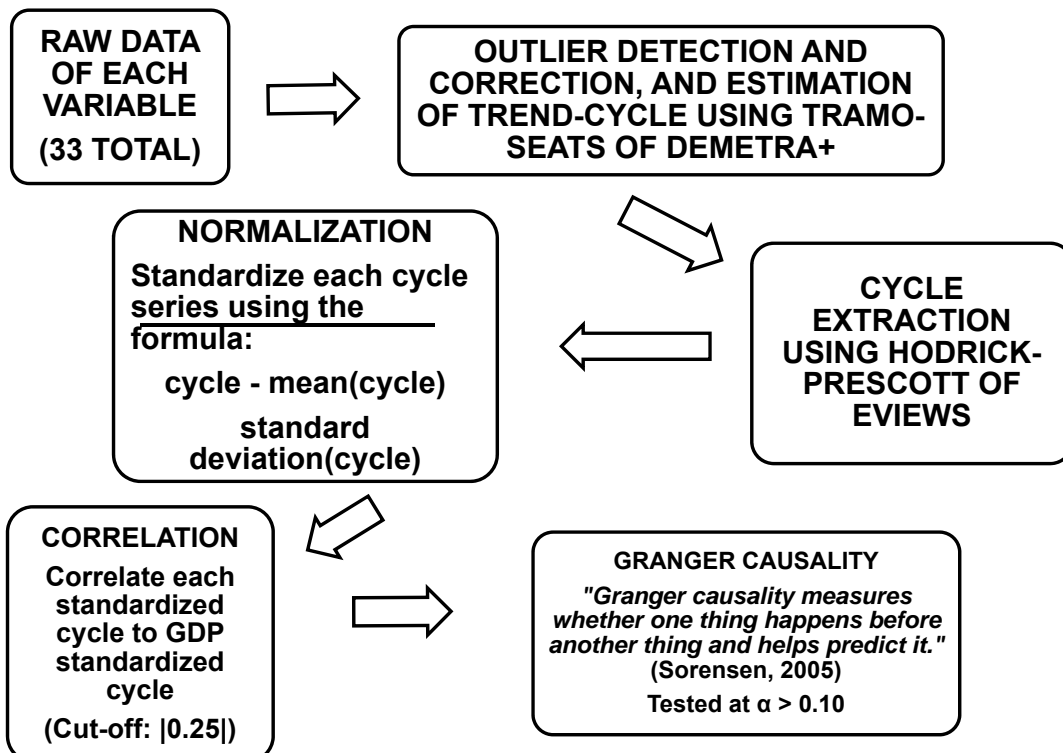
w_{i,l_i} - refers to the weight which is the correlation coefficient of the non-agriculture GVA and the leading economic indicator i at lead period

$z_{i,t}$ - standardized cycle of the leading economic indicator i at time t



Challenges

Timeliness of Data	Only four (4) indicators have available data during the scheduled computation of the quarterly composite LEI (CPI, EEC, P/\$, T/V Arrivals)
Imputation of data that are not available on time	<ul style="list-style-type: none"> • Four (4) indicators imputed using Growth Rate (MS, SPI, Imp, WPI) • Three (3) indicators forecasted using ARIMA Models X-11 DOS based (HotelOR, TTI, New Bus. Inc.)





Extraction of the Proposed Six (6) Indicators

Proposed Indicator	Correlation	Granger Causality	Timeliness
Peso/US Dollar Exchange Rate	-0.5184	0.0181 ⁽²⁾	Every 2 nd workday after the end of the reference month (final data)
Stock Price Index	0.2711	0.0344 ⁽⁴⁾	30 days after the end of the reference month (final data)
Business Expectation Survey (Confidence Index Next Quarter)	0.2858	0.0728 ⁽³⁾	Last Friday of the month before the reference quarter (final data)
Gross International Reserves	-0.3695	0.0008 ⁽¹⁾	Every 19 th day of the month after the end of the reference month (final data)
National Government Revenues	0.2546	0.0826 ⁽⁴⁾	21 days after the end of the reference month (final data)
Universal and Commercial Bank Loan Outstanding	-0.4950	0.0006 ⁽¹⁾ , 0.0035 ⁽³⁾	30 days after the end of the reference month (preliminary data)



III. Computation of Composite LEI using the Current and Proposed Method

Method	Current	Proposed
Seasonal Adjustment (Trend-Cycle Estimation)	DOS-based X-11 ARIMA	TRAMO-SEATS of DEMETRA+ software
Detrending Procedure (Cycle Extraction)	<ol style="list-style-type: none"> Polynomial trend model using MS Excel (w_{i,l_i}) Hodrick-Prescott using EViews ($z_{i,t}$) 	Hodrick-Prescott Filter using Eviews



III. Computation of Composite LEI using the Current and Proposed Method

Method	Current	Proposed
Weights used in the aggregation of the LEIs	Double weighting scheme (w_{i,l_i} and the simple average)	Standardized Partial Correlation
Normalization of Composite LEI	Composite LEI is not standardized	Composite LEI is standardized



IV. Conclusion

- For seasonal adjustment and detrending methods, TRAMO-SEATS of DEMETRA+ and Hodrick-Prescott (HP) of Eviews, respectively, were found better than the current methods.
- The best weights were the standardized partial correlations obtained by regressing the reference series and the indicators series.
- The 6 proposed indicators showed good prediction performance on the movement of GDP especially in recent periods. These also have the advantage of being timely and free from imputations compared to the 11 current indicators.



V. Recommendation

- Parallel run for at least one year of the current and proposed methodology to determine the representation of the indicators leading to the behavior of the economy.



References:

Presentations of:

Poquiz and Moscoso (2017), The Leading Economic Indicator System of the Philippines, An Introduction and the Methodology

Poliquit and Assad (2017), Enhancement of the Leading Economic Indicator System of the Philippines



THANK YOU