

Disaggregation and Forecast Unobservable Monthly Values of Quarterly Economic Time Series Data

The temporal disaggregation consists of deriving high frequency data from less frequency observations of a time series. The estimate value and the forecast of the high frequency data (say monthly) is useful not only as monitoring tool for policy-makers, but also become valuable input in the analysis and development of models in the fields of both macroeconomic and finance. Hence, making the disaggregated series and forecast its unobservable value might become important in order to observe the economic progress alongside provide more timely data for the users to take crucial decisions. This research proposed a direct solution to disaggregate the historical values of an aggregated quarterly economic series (say Gross Domestic Product/GDP). It is assumed that the preliminary series can be estimated from data on related variables. The Indonesia's GDP is used as an illustrative example. The procedures are derived from the statistical model that links the unobserved data with a preliminary estimated series and with the series of aggregated values. Once the monthly GDP series have been estimated, the model therefore to be incorporated into the forecast process. In addition, the direct disaggregation for each estimates of monthly GDP series was validated by compatibility test and showed that no reason to doubt the compatibility between preliminary and disaggregated series. According to the findings, the estimates series for those monthly GDP (also including manufacturing sector) have the similar upward trend each other and pointing to the positive impulses and expectations of a continuous increase in next year, assumed there are no other shocks considered in the model.

Keywords: temporal disaggregation; ARIMA-model; regression model; forecasting; compatibility testing