SEEMINGLY UNRELATED REGRESSION (SUR) WITH SPATIAL EFFECT FOR MODELLING MAIN SECTOR GDP IN EAST JAVA

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ABSTRACT

Gross Regional Domestic Product (GDP) is one of important indicators to determine the economic development level of an area within a given period. The development of seed sector GDP in East Java which includes Agriculture, Industry sectors, and sectors of Trade, Hotel and Restaurant (PHR), bringing East Java to achieve economic growth of 6.67% in the fourth quarter of 2010. The application of the SUR method, which is part of the science of Econometrics suitable to be applied in modeling of GDP in terms of economic aspects. Application of SUR methods often ignore the spatial effects between one region to another region SUR model contained the effects of spatial lag model called SUR-SUR-SEM SLM whereas if there are dependencies on spatial error components. If there are two effects of spatial dependencies of the resulting model is called SUR-SARMA. This research is focused on spatial SUR modeling of three leading sectors of GDP by the approach method of Maximum Likelihood Estimation (MLE) in the estimation of its parameters. The results of estimation process is not Closed Form. Numerical iteration is applied to get the parameter estimates. The best SUR Spatial model for GDP according in SUR-SLM, SUR-SLM with Customize weight matrix is the best model because of the lowest RMSE.

Keywords: GDP, MLE, SUR Spatial, RMSE