ABSTRACT

Indonesia experienced economic crisis in 1998 and caused by various reasons. One of the reasons was the weakened value of rupias to US dollars. Because of this, investors did not believe rupias anymore. This condition also made many private companies in our country collaps caused by highest value of external debt. The fact; however, Indonesia was survived from this crisis.

Economic crisis can cause by many reasons. The causes of the crisis in 1998 may be different if economic crisis happen again in Indonesia. As developing country, Indonesia needs energy for their economic movements. Because of that, energy is important for our country especially our energy production.

This study attempted to predict in order to avoid economic crisis in Indonesia using monetary crisis and energy crisis prediction as earlier warning for economic crisis nowdays. This studied applied a model called System Dynamic Model to develop a model of Indonesian Economic conditions. The data were taken from worldbank and the factors are GDP, External Debt as factors for indicate monetary crisis, and Energy Production and Energy Use as factors to indicate energy crisis. This model was build for 100 years; it is from 1971 until 2070. This study was based on report of "Limit to Growth". Since the system dynamic model applied coefficients called dynamic coefficients, then the method called Adaptive Genetic Algorithm was applied to find the solutions. This adaptive behavior from the genetic algorithm applied fuzzy system.

The experiments show that the MAPE value was ranging from 0.08 - 0.22 and accuracy was ranging from 77% – 95% for creating models from historical data. This result showed that the algorithm was capable to find the solutions.

From developed model shows that the policy in Susilo Bambang Yudhoyono reign succeed to avoid monetary crisis for 10 – 30 years than policy before Susilo Bambang Yudhoyono reign, meanwhile both policies cannot avoid energy crisis. The government or the future president must create policies about utilization of alternative energy.

Keyword (s): Economic Crisis, System Dynamic Model, Adaptive Genetic Algorithm, Fuzzy System, Limit to Growth.