# Betasmartz Research – Confidential - Business Cycle Classification Algorithm

## Objective

The intention of this document is to introduce and outline all the steps that are involved in determination of the business cycle classification algorithm.

This algorithm provides the probability forecasting model for a particular labeling in time.

## Data Needed

Two types of data are needed, one will be the labeling that wants to be identified for the algorithm and the other will be the potential explanatory data for the label variable.

## Modelling framework definition

There are numerous classification algorithms that could provide a classification regarding the business cycle identification. However, not all the methodologies are robust and most of them are prone to overfitting. In this case the algorithm that was used is called a Bayesian Modeling Average. This technique is very robust and is not sensitive to overfitting so it almost assures from its building blocks that the model reflects the actual state of the population distribution.