

## HOW THE ESTIMATES WERE OBTAINED

The estimates were obtained using STAMP version 8.3 which is part of the OXMETRICS suite.

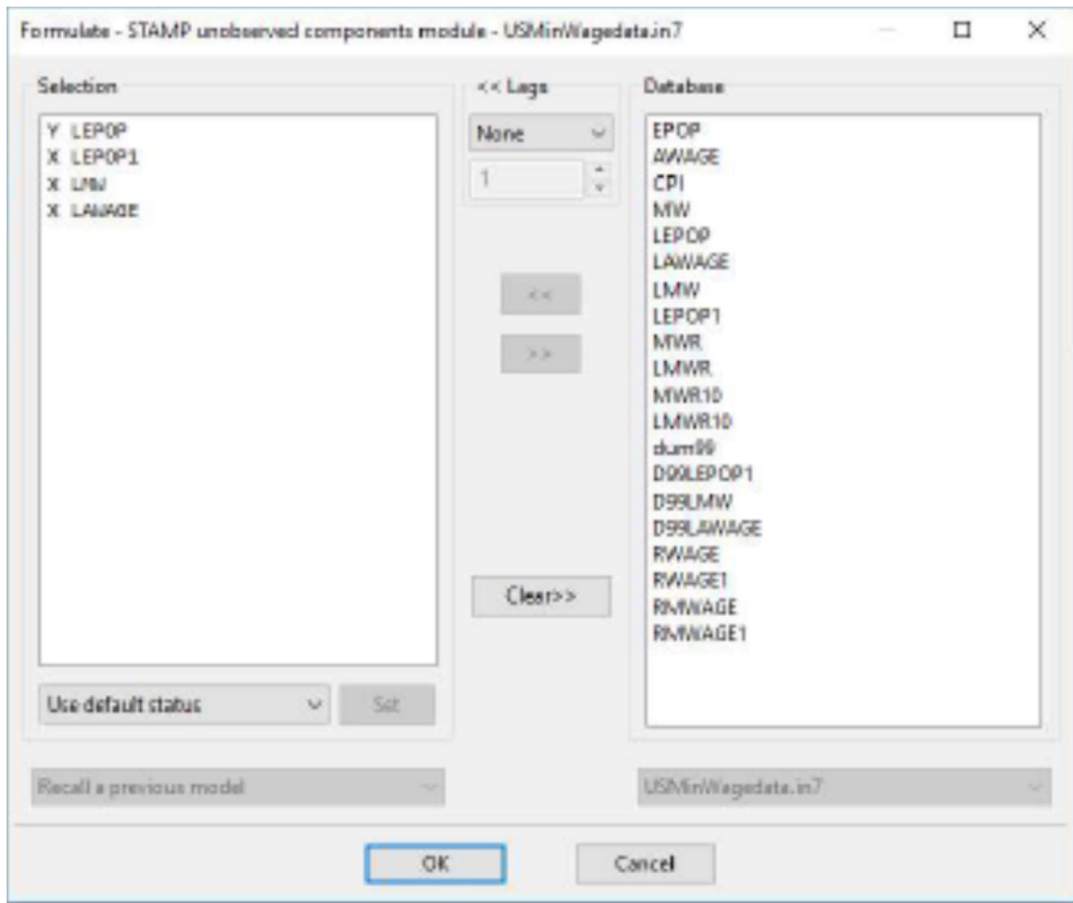
The sample used is from 1954 : 1 to 2015 : 3.

The STAMP module requires the user to specify the form of the model in terms of

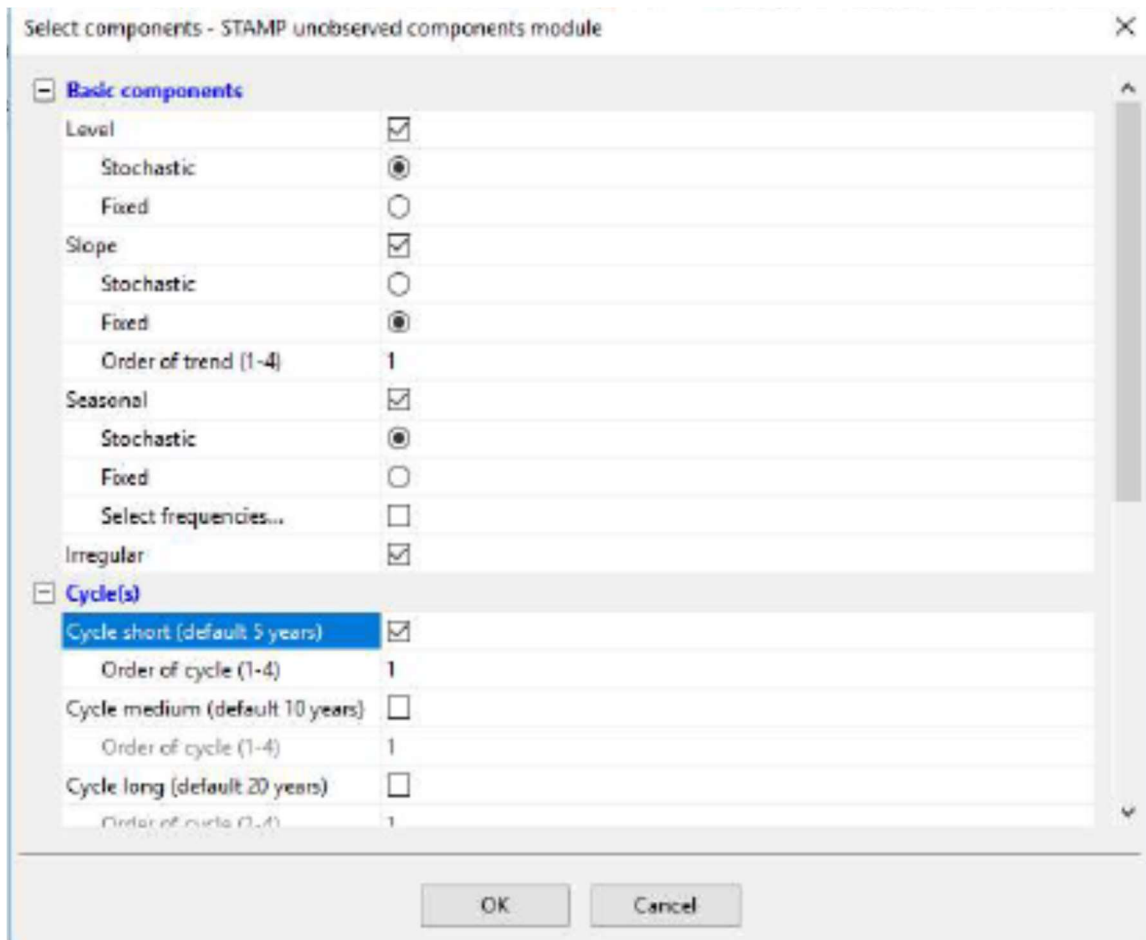
(a) the 'regression' part of the model which is the first part of the right-hand side of equation (1) in the paper (and which is underlined here) :

$$EP_t = \alpha EP_{t-1} + \beta_1 \underline{MW_t} + \beta_2 \underline{AW_t} + \mu_t + \gamma_t + \psi_t + \varepsilon_t$$

This appears in the module as:



(b) the unobserved components to be included are selected from a menu and represent the last four terms in equation (1) :  $\mu_t, \gamma_t, \psi_t$  and  $\varepsilon_t$  which are the trend, seasonal, cycle and irregular components, respectively. These components are stochastic and the choices (stochastic trend or “level” with fixed slope, stochastic seasonal and “short” stochastic cycle plus irregular term) appear in the module as :



The various parameters are then estimated by STAMP’s basic procedure which employs the Kalman filter and maximum likelihood.