Figure 2 - Segmented multiple time series regression model

\[ A_{it} = C + \beta X_{it} + \beta_1 U_{Mit} + \beta_2 Post_{it} + \beta_3 Time_i + \beta_4 Time_{posti} + \beta_5 U_{Mit} \times Time_i + \beta_6 U_{Mit} \times Post_{it} + \beta_7 U_{Mit} \times Time_{posti} + \epsilon_{it} \]

where:

- \( A_{it} \) = Adherence of enrollee ‘i’ at time ‘t’; \( i \) = the individual;
- \( t \) = time in quarters; \( C \) = a constant;
- \( X_{it} \) = A vector of control variables (age, gender, etc.);
- \( U_{Mit} \) = An indicator set to 1 if the individual is a UM employee in the intervention group (as opposed to a control);
- \( POST_{it} \) = an indicator set to 1 if the observation is post intervention (to adjust for secular trends);
- \( Time_i \) = Time in quarters from the start of the pre-intervention period (set to 0 for all post-intervention times);
- \( Time_{posti} \) = Time in quarters after the intervention;
- \( \epsilon_{it} \) = a stochastic error term.

The coefficient on the interaction term, \( U_{Mit} \times Time_i \) assesses a difference in slope between the intervention and control groups prior to intervention. The coefficient on the interaction term, \( U_{Mit} \times Post_{it} \) measures a one-time effect of the intervention on adherence. The coefficient on the interaction term, \( U_{Mit} \times Time_{posti} \) measures a change in the slope of adherence due to the intervention that is above and beyond any ecologic changes occurring in adherence. Analyses will be based on individual level data, and a vector of covariates, \( X_{it} \), will be included in the model to ensure that controls are as like to the intervention group as possible.