I intend to use Pesaran's (2006) common correlated effects pooled (CCEP) estimator. However, I'm not yet very familiar with advanced econometrics and advanced use of eviews. More specifically I want to estimate this model:

$$y_{it} = \alpha_i + \beta_1 x_{1,it} + \beta_2 x_{2,it} + \gamma_i F_t + \epsilon_{it} \tag{1}$$

in which F_t is an unobserved common factor and γ_i is a country-specific factor loading. We were taught that F_t can be proxied by:

$$F_t = \frac{(\bar{y}_t - \bar{\alpha} - \beta_1 \bar{x}_{1,t} - \beta_2 \bar{x}_{2,t} - \bar{\epsilon}_t)}{\bar{\gamma}}, \tag{2}$$

in which $\bar{y}_t = \frac{1}{N}\sum_{i=1}^{N} y_{it}$, and $\bar{\gamma} = \frac{1}{N}\sum_{i=1}^{N} \gamma_i$, with N the number of cross-sections.

Substituting the second equation into the first yields:

$$y_{it} = \alpha_i - \frac{\gamma_i}{\bar{\gamma}} + \beta_1 x_{1,it} + \beta_2 x_{2,it} + \frac{\gamma_i}{\bar{\gamma}}\bar{y}_t - \beta_1 \frac{\gamma_i}{\bar{\gamma}}\bar{x}_{1,t} - \beta_2 \frac{\gamma_i}{\bar{\gamma}}\bar{x}_{2,t} + \epsilon_{it} - \frac{\gamma_i}{\bar{\gamma}}\bar{\epsilon}_t \tag{3}$$

or with $\alpha_i - \frac{\gamma_i}{\bar{\gamma}} = \alpha_i'$ and $\frac{\gamma_i}{\bar{\gamma}} = \gamma_i'$:

$$y_{it} = \alpha_i' + \beta_1 x_{1,it} + \beta_2 x_{2,it} + \gamma_i' \bar{y}_t - \beta_1 \gamma_i' \bar{x}_{1,t} - \beta_2 \gamma_i' \bar{x}_{2,t} + \epsilon_{it} - \gamma_i' \bar{\epsilon}_t. \tag{4}$$

To estimate this in eviews, I had the following idea.

The cross-sectional averages $\bar{y}_t$, $\bar{x}_{1,t}$, and $\bar{x}_{2,t}$ can be easily calculated from the dataset. I would use cross-sectional fixed effects to estimate all α_i'. Next, I would need N terms to estimate all N γ_i'. To do this, I would include these N terms: $\gamma_A' \bar{y}_t dum_A + \gamma_B' \bar{y}_t dum_B + ... + \gamma_N' \bar{y}_t dum_N$, in which each capital letter denotes one of the N cross-sections and the dummy variable takes the value of 1 once for each cross-section. Then, for each averaged explanatory variable, $\bar{x}_{1t}$ and $\bar{x}_{2t}$, I would include these $2 \times N$ terms: $\beta_1 \gamma_A' \bar{x}_{1,t} + \beta_1 \gamma_B' \bar{x}_{1,t} + ... + \beta_1 \gamma_N' \bar{x}_{1,t}$ and $\beta_2 \gamma_A' \bar{x}_{2,t} + \beta_2 \gamma_B' \bar{x}_{2,t} + ... + \beta_2 \gamma_N' \bar{x}_{2,t}$.

So, to sum up, my suggested input for eviews (to estimate with cross-sectional fixed effects) is the following: '$y = c(1) * x1 + c(2) * x2 + c(3) * y_avg * dumA + c(4) * y_avg * dumB + c(5) * y_avg * dumC + ... + c(1) * c(3) * x1_avg + c(1) * c(4) * x1_avg + c(1) * c(5) * x1_avg + ... + c(2) * c(3) * x2_avg + c(2) * c(4) * x2_avg + c(2) * c(5) * x2_avg + ...$'.

In this equation:

- 'c(1)' $= \beta_1$;
- 'c(2)' $= \beta_2$;
- 'c(3)' $= \gamma_A'$;
- 'c(4)' $= \gamma_B'$;

- ‘c(5)‘ $= \gamma'_C$.

These are my questions regarding this estimation:

- First of all, confirmation of the correctness of my derivation would be welcome;
- Would the estimation in eviews I suggest do the trick?
- If so, should I include an intercept in the fixed-effects estimation?
- If not, is there an alternative procedure to implement the CCEP estimator in eviews?
- The estimated error terms should be $\epsilon - \gamma'_i \bar{\epsilon}$, is this structure automatically obtained? Or should this be imposed one way or another?
- The same question for α'_i: it should equal $\alpha_i - \frac{\gamma_i}{\bar{\gamma}}$. Should this condition be imposed, or is it automatically fulfilled when inputting my suggested input in eviews;
- Other suggestions regarding the use of CCEP estimator in eviews are certainly welcome.

Any help, also partial answers, is appreciated!