Allocating Marginal Income

We are interested in estimating how state income tax and charitable contribution would change accordingly with extra dollar being added to a person's income, or, more specifically, a person's wage/capital gain. The estimates are obtained from some simple regressions on 09 puf data, and will be applied immediately to units in year 2015/2016, with the assumption that people's behavior won't change over time.

Stare&Local Taxes

(1) **Data:**

To investigate the relationship between Stare&Local taxes and wage/capital gain, the 09 puf data were firstly filtered by the following criteria:

(a) e00100 > 0

(b) e18400 > 0

(c) FDED $= 1$

Let $\mathcal{F}$ be the filtered data. After that, $\mathcal{F}$ was further divided into four subgroups, based on four different categories of MARS, namely $\mathcal{F}_1$, $\mathcal{F}_2$, $\mathcal{F}_3$ and $\mathcal{F}_4$.

(2) **Models:**

For each $\mathcal{F}_i$ $(1 \leq i \leq 4)$, we fit

$$\text{e18400} \approx \alpha_i * \text{e00200} + \beta_i * \text{e01000} + \gamma_i,$$

and each pair (α_i, β_i) are used as estimates.

Alternative :

Instead of subsetting and filtering the data, we could also fit the entire data with indicator terms like $\mathbb{1}_{\{\text{MARS = i}\}} * \text{e00200}$ and $\mathbb{1}_{\{\text{MARS = i}\}} * \text{e01000}$ for each i. I'm, however, not sure about whether we should take this approach.

Charitable Contribution:

(1) **Data:**

Similar above, the entire data are filtered under the following criteria:

(a) e00100 > 0

(b) e19700 > 0

(c) FDED $= 1$

(2) **Models:**

For charitable contribution, wage and capital gain are dealt with separately:

$$\text{e19700} \approx \alpha_1 * \text{e00200} + \beta_1,$$

$$\text{e19700} \approx \alpha_2 * \text{e01000} + \beta_2,$$

and α_1 and α_2 are used as estimates.