Corporate Income Tax Distribution

Here is a brief description of the Corporate Income Tax Distribution.

In order to distribute the corporate income tax to individual taxpayer, TPC paper introduces a formula as following:

20% falling on labor;
20% falling on normal return to all capital;
60% falling on supernormal return to corporate equity (shareholders).

Accordingly, a new variable is added to current_law_policy.json:

Corporate Income Tax Distribution percentages:
_CIT_Distribution = [0.2, 0.2, 0.6]

Specifically, the PUF variables being used:

Labor = e00200 + e00250 + e07240 + e03150 + e01400 + e01700 + e02400 + e02100 + e00900 + e02000
*Normal = 0.4 * (e00650 + p23250 + p22250 + e02100 + e00900 + e02000) + (e00300 + e00400 + e00600)*
*Supernormal = 0.6 * (e00650 + p23250 + p22250)*

Some variables are omitted because they are missing in PUF. But those variables are insignificant and will not put big impacts on our distributing results.

4 variables are added to records_variables.json:

Aggregated labor income:
*agg_labor = (Labor * s006).sum()*
Aggregated normal income:
agg_normal = (Normal s006).sum()*
Aggregated supernormal income:
*agg_supernormal = (Supernormal * s006).sum()*

Above variables are structured into arrays with identical amounts. In other words, each taxpayer has same agg_labor, agg_normal and agg_supernormal.

Each taxpayer's Corporate Income Tax distribution:
share_corptax_burden = share_from_labor + share_from_normal + share_from_supernormal
Where:
*share_from_labor = CIT_Distribution[0] * revenue_collected * Labor / agg_labor*

*share_from_normal = CIT_Distribution[1] * revenue_collected * Normal / agg_normal*

*share_from_supernormal = CIT_Distribution[2] * revenue_collected * Supernormal / agg_supernormal*

revenue_collected = 100,000,000,000

revenue_collected is the dollar amount of Corporate Income Tax collection. Here it is set to 100,000,000,000 for simplification.

Current Difficulty:

Following above logic, the distribution falls into an extreme case. I create a corporate income tax table based on previous discussion:

	s006	expanded_income	c00100	share_corptax_burden
0	17,004,988	-119,449,251,743	-124,010,604,527	-21,010,701,485
1	17,004,489	152,378,742,352	104,334,599,094	-3,341,672,388
2	17,006,659	273,930,511,045	175,573,308,821	-1,887,380,105
3	17,004,285	400,560,764,101	271,106,279,282	-4,505,952,036
4	17,006,306	558,266,448,736	414,184,451,276	-4,527,702,496
5	17,005,655	754,021,373,929	606,937,232,387	-6,706,744,655
6	17,005,634	1,008,755,132,796	867,768,894,634	-8,918,370,179
7	17,004,128	1,379,302,477,097	1,262,046,738,827	-9,160,920,710
8	17,006,254	2,054,398,833,868	1,913,134,661,073	-8,773,837,161
9	17,006,552	6,272,407,565,288	5,954,268,152,193	168,833,281,214
sums	170,054,950	12,734,572,597,467	11,445,343,713,062	100,000,000,000

As shown above, if we sort the Corporate Income Tax Burden by expanded_income, the top 10% will take more than 168% of corporate income tax burden.

The main reason is the existence of capital gain/loss (variables p23250 and p22250). p23250 has a range from -234 million to 294 million. p22250 has a range from -121 million to 315 million. But the range of expanded_income is -147 million to 295 million.

p23250 and p22250 account for large proportion (they contribute to both normal and supernormal income) in our calculation. They distort whole tax burden distribution as a consequence.

In order to get a more reasonable distribution, I think we ought to modify the formula we get from TPC. Either dropping some extreme negative terms or reducing the weights of capital gain/loss would be feasible.

For example:
If we drop all negative numbers of p23250 and p22250 and replace them with 0.
The tax burden distribution becomes following:

	s006	expanded_income	c00100	share_corptax_burden
0	17,004,988	-119,449,251,743	-124,010,604,527	490,430,670
1	17,004,489	152,378,742,352	104,334,599,094	581,459,979
2	17,006,659	273,930,511,045	175,573,308,821	867,182,127
3	17,004,285	400,560,764,101	271,106,279,282	1,256,845,639
4	17,006,306	558,266,448,736	414,184,451,276	1,649,399,316
5	17,005,655	754,021,373,929	606,937,232,387	2,427,109,116
6	17,005,634	1,008,755,132,796	867,768,894,634	3,310,081,758
7	17,004,128	1,379,302,477,097	1,262,046,738,827	4,783,993,442
8	17,006,254	2,054,398,833,868	1,913,134,661,073	7,556,810,895
9	17,006,552	6,272,407,565,288	5,954,268,152,193	77,076,687,060
sums	170,054,950	12,734,572,597,467	11,445,343,713,062	100,000,000,000