2019 Full States MPC and Distributional Statistics by Marital, Kids, and Income Groups.

In the file here, we consider marital, kids and income groups, and summarize various statistics for each bin.

Test SNW_EVUVW19_JAEEMK Defaults Dense

VFI and Distribution

Call the function with defaults.

```
clear all;
st_solu_type = 'bisec_vec';
bl_save_csv = false;

% Solve the VFI Problem and get Value Function
% mp_params = snw_mp_param('default_dense');
% mp_params = snw_mp_param('default_docdense');
mp_params = snw_mp_param('default_moredense_a65zh133zs5_e2m2');
mp_controls = snw_mp_control('default_test');

% set Unemployment Related Variables
xi=0.5; % Proportional reduction in income due to unemployment (xi=0 refers to 0 labor income;
b=1; % Unemployment insurance replacement rate (b=0 refers to no UI benefits; b=1 refers to 100
TR=100/58056; % Value of a welfare check (can receive multiple checks). TO DO: Update with alte

mp_params('xi') = xi;
mp_params('b') = b;
mp_params('TR') = TR;

% Solve for Unemployment Values
mp_controls('bl_print_vfi') = false;
mp_controls('bl_print_vfi_verbose') = false;
mp_controls('bl_print_ds') = true;
mp_controls('bl_print_ds_verbose') = true;
mp_controls('bl_print_precompute') = false;
mp_controls('bl_print_precompute_verbose') = false;
mp_controls('bl_print_a4chk') = false;
mp_controls('bl_print_a4chk_verbose') = false;
mp_controls('bl_print_evuvw20_jaeemk') = false;
mp_controls('bl_print_evuvw20_jaeemk_verbose') = false;
mp_controls('bl_print_evuvw19_jaeemk') = false;
mp_controls('bl_print_evuvw19_jaeemk_verbose') = false;

% Solve the Model to get V working and unemployed
[V_ss,ap_ss,cons_ss,mp_valpol_more_ss] = snw_vfi_main_bisec_vec(mp_params, mp_controls);
```

```
Completed SNW_VFI_MAIN_BISEC_VEC;SNW_MP_PARAM=default_moredense_a65zh133zs5_e2m2;SNW_MP_CONTROL=default_test;time=80
```

```
inc_VFI = mp_valpol_more_ss('inc_VFI');
spouse_inc_VFI = mp_valpol_more_ss('spouse_inc_VFI');
total_inc_VFI = inc_VFI + spouse_inc_VFI;
% tax during covid year
```

```
mp_params('a2_covidyr') = mp_params('a2_covidyr_manna_heaven');
% Solve unemployment
[V_unemp,~,cons_unemp,~] = snw_vfi_main_bisec_vec(mp_params, mp_controls, V_ss);
```

```
Completed SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock;SNW_MP_PARAM=default_moredense_a65zh133zs5_e2m2;SNW_MP_CONTROL
```

```
[Phi_true, Phi_adj, A_agg, Y_inc_agg, ~, mp_dsvfi_results] = snw_ds_main_vec(mp_params, mp_cont
```

```
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:1 of 82, time-this-age:1.074
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:2 of 82, time-this-age:20.5148
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:3 of 82, time-this-age:23.4908
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:4 of 82, time-this-age:28.525
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:5 of 82, time-this-age:33.2054
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:6 of 82, time-this-age:35.3197
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:7 of 82, time-this-age:37.5611
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:8 of 82, time-this-age:40.226
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:9 of 82, time-this-age:44.3653
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:10 of 82, time-this-age:48.3751
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:11 of 82, time-this-age:49.4182
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:12 of 82, time-this-age:50.6325
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:13 of 82, time-this-age:51.0802
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:14 of 82, time-this-age:52.1717
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:15 of 82, time-this-age:53.2068
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:16 of 82, time-this-age:53.6567
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:17 of 82, time-this-age:53.8811
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:18 of 82, time-this-age:55.0892
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:19 of 82, time-this-age:55.6717
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:20 of 82, time-this-age:56.2143
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:21 of 82, time-this-age:56.5704
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:22 of 82, time-this-age:57.0081
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:23 of 82, time-this-age:57.1682
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:24 of 82, time-this-age:57.3671
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:25 of 82, time-this-age:57.5453
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:26 of 82, time-this-age:57.8356
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:27 of 82, time-this-age:58.0491
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:28 of 82, time-this-age:57.9265
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:29 of 82, time-this-age:57.6332
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:30 of 82, time-this-age:58.1269
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:31 of 82, time-this-age:57.7606
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:32 of 82, time-this-age:57.5816
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:33 of 82, time-this-age:57.3361
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:34 of 82, time-this-age:57.7288
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:35 of 82, time-this-age:56.9154
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:36 of 82, time-this-age:57.2866
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:37 of 82, time-this-age:57.1634
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:38 of 82, time-this-age:57.0388
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:39 of 82, time-this-age:56.6859
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:40 of 82, time-this-age:56.7277
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:41 of 82, time-this-age:56.9976
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:42 of 82, time-this-age:56.6711
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:43 of 82, time-this-age:56.7355
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:44 of 82, time-this-age:56.6671
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:45 of 82, time-this-age:56.1114
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:46 of 82, time-this-age:55.9357
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:47 of 82, time-this-age:55.9514
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:48 of 82, time-this-age:55.4533
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:49 of 82, time-this-age:58.5505
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:50 of 82, time-this-age:59.402
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:51 of 82, time-this-age:59.5814
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:52 of 82, time-this-age:59.4987
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:53 of 82, time-this-age:59.3449
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:54 of 82, time-this-age:59.6498
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:55 of 82, time-this-age:59.3396
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:56 of 82, time-this-age:59.4903
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SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:57 of 82, time-this-age:59.4659
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:58 of 82, time-this-age:59.2382
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:59 of 82, time-this-age:58.2574
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:60 of 82, time-this-age:58.4884
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:61 of 82, time-this-age:58.2825
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:62 of 82, time-this-age:57.4508
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:63 of 82, time-this-age:56.9986
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:64 of 82, time-this-age:56.5337
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:65 of 82, time-this-age:55.94
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:66 of 82, time-this-age:54.1804
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:67 of 82, time-this-age:53.4807
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:68 of 82, time-this-age:52.222
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:69 of 82, time-this-age:51.6643
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:70 of 82, time-this-age:50.7393
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:71 of 82, time-this-age:49.5324
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:72 of 82, time-this-age:47.7517
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:73 of 82, time-this-age:45.9439
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:74 of 82, time-this-age:44.385
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:75 of 82, time-this-age:42.9
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:76 of 82, time-this-age:41.3804
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:77 of 82, time-this-age:35.089
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:78 of 82, time-this-age:33.9143
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:79 of 82, time-this-age:32.9597
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:80 of 82, time-this-age:26.3587
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:81 of 82, time-this-age:25.2198
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:82 of 82, time-this-age:22.8558
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:1 of 82, time-this-age:0.50074
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:2 of 82, time-this-age:0.078102
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:3 of 82, time-this-age:0.077705
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:4 of 82, time-this-age:0.077939
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:5 of 82, time-this-age:0.07796
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:6 of 82, time-this-age:0.078664
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:7 of 82, time-this-age:0.077012
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:8 of 82, time-this-age:0.077566
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:9 of 82, time-this-age:0.076968
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:10 of 82, time-this-age:0.076874
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:11 of 82, time-this-age:0.07674
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:12 of 82, time-this-age:0.07736
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:13 of 82, time-this-age:0.07804
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:14 of 82, time-this-age:0.077614
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:15 of 82, time-this-age:0.076794
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:16 of 82, time-this-age:0.077524
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:17 of 82, time-this-age:0.077125
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:18 of 82, time-this-age:0.076024
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:19 of 82, time-this-age:0.074863
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:20 of 82, time-this-age:0.07631
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:21 of 82, time-this-age:0.073418
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:22 of 82, time-this-age:0.073802
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:23 of 82, time-this-age:0.073525
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:24 of 82, time-this-age:0.073143
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:25 of 82, time-this-age:0.073793
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:26 of 82, time-this-age:0.073628
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:27 of 82, time-this-age:0.074547
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:28 of 82, time-this-age:0.074412
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:29 of 82, time-this-age:0.074226
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:30 of 82, time-this-age:0.073869
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:31 of 82, time-this-age:0.072886
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:32 of 82, time-this-age:0.074226
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:33 of 82, time-this-age:0.073236
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:34 of 82, time-this-age:0.074885
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:35 of 82, time-this-age:0.073514
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:36 of 82, time-this-age:0.073964
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:37 of 82, time-this-age:0.07539
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:38 of 82, time-this-age:0.073973
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:39 of 82, time-this-age:0.073071
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SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:40 of 82, time-this-age:0.073901
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:41 of 82, time-this-age:0.073413
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:42 of 82, time-this-age:0.074556
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:43 of 82, time-this-age:0.07319
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:44 of 82, time-this-age:0.073482
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:45 of 82, time-this-age:0.073433
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:46 of 82, time-this-age:0.073574
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:47 of 82, time-this-age:0.073129
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:48 of 82, time-this-age:0.073958
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:49 of 82, time-this-age:0.07419
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:50 of 82, time-this-age:0.07333
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:51 of 82, time-this-age:0.073146
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:52 of 82, time-this-age:0.07345
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:53 of 82, time-this-age:0.073098
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:54 of 82, time-this-age:0.073673
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:55 of 82, time-this-age:0.072706
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:56 of 82, time-this-age:0.073966
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:57 of 82, time-this-age:0.073423
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:58 of 82, time-this-age:0.073912
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:59 of 82, time-this-age:0.073841
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:60 of 82, time-this-age:0.073261
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:61 of 82, time-this-age:0.073155
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:62 of 82, time-this-age:0.074912
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:63 of 82, time-this-age:0.076206
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:64 of 82, time-this-age:0.073746
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:65 of 82, time-this-age:0.072696
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:66 of 82, time-this-age:0.073178
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:67 of 82, time-this-age:0.073645
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:68 of 82, time-this-age:0.073697
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:69 of 82, time-this-age:0.073477
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:70 of 82, time-this-age:0.075493
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:71 of 82, time-this-age:0.073607
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:72 of 82, time-this-age:0.073559
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:73 of 82, time-this-age:0.073002
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:74 of 82, time-this-age:0.073612
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:75 of 82, time-this-age:0.073039
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:76 of 82, time-this-age:0.073474
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:77 of 82, time-this-age:0.073582
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:78 of 82, time-this-age:0.076234
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:79 of 82, time-this-age:0.073668
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:80 of 82, time-this-age:0.073745
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:81 of 82, time-this-age:0.073108
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:82 of 82, time-this-age:0.072892
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:83 of 82, time-this-age:0.073316
SNW_DS_MAIN: Share of population with assets equal to upper bound on asset grid:6.0111e-06
SNW_DS_MAIN: Accidental bequests are thrown in the ocean
SNW_DS_MAIN_VEC tax and spend;it=1;err=0.0010205
SNW_DS_MAIN_VEC tax and spend;it=2;err=0.0008547
SNW_DS_MAIN_VEC tax and spend;it=3;err=0.0007159
SNW_DS_MAIN_VEC tax and spend;it=4;err=0.00059969
SNW_DS_MAIN_VEC tax and spend;it=5;err=0.00050237
SNW_DS_MAIN_VEC tax and spend;it=6;err=0.00042087
SNW_DS_MAIN_VEC tax and spend;it=7;err=0.00035261
SNW_DS_MAIN_VEC tax and spend;it=8;err=0.00029542
SNW_DS_MAIN_VEC tax and spend;it=9;err=0.00024752
SNW_DS_MAIN_VEC tax and spend;it=10;err=0.0002074
SNW_DS_MAIN_VEC tax and spend;it=11;err=0.00017378
SNW_DS_MAIN_VEC tax and spend;it=12;err=0.00014561
SNW_DS_MAIN_VEC tax and spend;it=13;err=0.00012201
SNW_DS_MAIN_VEC tax and spend;it=14;err=0.00010224
SNW_DS_MAIN_VEC tax and spend;it=15;err=8.567e-05
SNW_DS_MAIN_VEC: Number of a2-adjustments (for taxation) used to balance the government budget= 15
SNW_DS_MAIN_VEC: Old and updated value of a2=1.5286      1.5353
SNW_DS_MAIN_VEC: Aggregates: Cons., Gov. cons., Save, Assets, Income, Bequests 48.78871      11.35864      193.3932
SNW_DS_MAIN_VEC: Resource constraint: C_t+A_{t+1}+G_t=A_t+Y_t 258.0346      258.0206
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Completed SNW_DS_MAIN_VEC;SNW_MP_PARAM=default_moredense_a65zh133zs5_e2m2;SNW_MP_CONTROL=default_test;time=4738.1988
pos = 19 ; key = mp_controls
  Map with properties:

       Count: 37
     KeyType: char
   ValueType: any

pos = 20 ; key = mp_params
  Map with properties:

       Count: 52
     KeyType: char
   ValueType: any

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xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
CONTAINER NAME: mp_dsvfi_results ND Array (Matrix etc)
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
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	i	idx	ndim	numel	rowN	colN	sum	mean	std
SS_ss	1	11	6	7.1754e+07	83	8.645e+05	8.3556e+06	0.11645	0.134
a_ss	2	16	6	7.1754e+07	83	8.645e+05	2.4595e+09	34.277	39.128
ap_ss	3	17	6	7.1754e+07	83	8.645e+05	2.3245e+09	32.395	36.796
cons_ss	4	18	6	7.1754e+07	83	8.645e+05	3.5119e+08	4.8943	8.3291
n_ss	5	21	6	7.1754e+07	83	8.645e+05	2.5114e+08	3.5	1.5
tax_ss	6	22	6	7.1754e+07	83	8.645e+05	6.6049e+07	0.9205	1.1421
y_all_ss	7	23	6	7.1754e+07	83	8.645e+05	2.8219e+08	3.9327	4.5134
y_head_earn_ss	8	24	6	7.1754e+07	83	8.645e+05	1.078e+08	1.5024	3.0473
y_head_inc_ss	9	25	6	7.1754e+07	83	8.645e+05	2.1454e+08	2.99	3.3769
y_spouse_inc_ss	10	26	6	7.1754e+07	83	8.645e+05	6.7646e+07	0.94276	2.632
yshr_SS_ss	11	27	6	7.1754e+07	83	8.645e+05	1.0586e+07	0.14753	0.26985
yshr_interest_ss	12	28	6	7.1754e+07	83	8.645e+05	3.0079e+07	0.4192	0.34983
yshr_nttxss_ss	13	29	6	7.1754e+07	83	8.645e+05	3.7387e+06	0.052104	0.30148
yshr_tax_ss	14	30	6	7.1754e+07	83	8.645e+05	1.4324e+07	0.19963	0.045124
yshr_wage_ss	15	31	6	7.1754e+07	83	8.645e+05	3.1088e+07	0.43327	0.39448

```
----------------------------------------
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
CONTAINER NAME: mp_dsvfi_results Scalars
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
```

	i	idx	value
A_agg	1	1	193.39
A_agg_perhh	2	2	4.2232
Aprime_agg	3	3	197.89
Aprime_agg_perhh	4	4	4.3213
Bequests_aux	5	5	2.5593
Bequests_aux_perhh	6	6	0.055887
C_agg	7	7	48.789
C_agg_perhh	8	8	1.0654
SS_spend	9	9	2.3908
SS_spend_perhh	10	10	0.052208
Tax_revenues	11	12	13.735
Tax_revenues_perhh	12	13	0.29994
Y_inc_agg	13	14	64.627
Y_inc_agg_perhh	14	15	1.4113

```
xxx tb_outcomes: all stats xxx
```

OriginalVariableNames	a_ss	ap_ss	cons_ss	n_ss	y_all	y_head_inc	y
{'mean' }	4.2232	4.3213	1.0654	2.3554	1.4635	1.105	

{'unweighted_sum' }	2228	8.7064e+08	8.2948e+07	21	1.3652e+08	3.1435e+06
{'sd' }	6.7417	6.779	0.6899	1.4375	1.4563	0.99938
{'coefofvar' }	1.5964	1.5687	0.64754	0.61029	0.99508	0.90439
{'gini' }	0.68027	0.68124	0.33738	0.3128	0.44246	0.41709
{'min' }	0	0	0.036717	1	0.038108	0.038108
{'max' }	135	163.7	141.66	6	50.873	24.357
{'pYis0' }	0.12293	0.10299	0	0	0	0
{'pYls0' }	0	0	0	0	0	0
{'pYgr0' }	0.87707	0.89701	1	1	1	1
{'pYisMINY' }	0.12293	0.10299	6.7731e-07	0.36005	6.7731e-07	9.6433e-07
{'pYisMAXY' }	6.0111e-06	1.6708e-12	0	0.041101	1.6708e-12	1.2498e-09
{'p0_01' }	0	0	0.067181	1	0.07102	0.067406
{'p0_1' }	0	0	0.10544	1	0.11346	0.10438
{'p1' }	0	0	0.18623	1	0.20359	0.18135
{'p5' }	0	0	0.27747	1	0.28173	0.25935
{'p10' }	0	0	0.36103	1	0.35688	0.31385
{'p20' }	0.064373	0.068222	0.49773	1	0.50299	0.41607
{'p25' }	0.11124	0.17983	0.56413	1	0.57911	0.47199
{'p30' }	0.26367	0.37542	0.63091	1	0.65753	0.5291
{'p40' }	0.68544	0.84816	0.77012	2	0.83048	0.65468
{'p50' }	1.4131	1.5883	0.91942	2	1.0325	0.80051
{'p60' }	2.5301	2.7569	1.0845	2	1.2817	0.98461
{'p70' }	4.1199	4.4885	1.2781	3	1.613	1.2238
{'p75' }	5.4836	5.7144	1.3935	3	1.8306	1.3805
{'p80' }	7.1191	7.2197	1.5293	4	2.1079	1.5773
{'p90' }	12.56	12.096	1.9344	5	3.0419	2.2348
{'p95' }	16.875	17.457	2.3404	5	4.0251	2.9655
{'p99' }	30.548	31.377	3.384	6	6.8588	4.9807
{'p99_9' }	56.953	56.953	5.2437	6	14.778	8.7476
{'p99_99' }	90.439	88.534	7.4817	6	20.971	13.514
{'fl_cov_a_ss' }	45.451	45.439	3.3942	-1.4049	4.4679	3.8282
{'fl_cor_a_ss' }	1	0.99423	0.72975	-0.14496	0.45507	0.56819
{'fl_cov_ap_ss' }	45.439	45.955	3.4956	-1.3685	5.3067	4.1045
{'fl_cor_ap_ss' }	0.99423	1	0.74743	-0.14043	0.53754	0.60585
{'fl_cov_cons_ss' }	3.3942	3.4956	0.47596	0.23909	0.76142	0.55948
{'fl_cor_cons_ss' }	0.72975	0.74743	1	0.24109	0.75787	0.81146
{'fl_cov_n_ss' }	-1.4049	-1.3685	0.23909	2.0664	0.35987	0.092667
{'fl_cor_n_ss' }	-0.14496	-0.14043	0.24109	1	0.17191	0.064504
{'fl_cov_y_all' }	4.4679	5.3067	0.76142	0.35987	2.1208	1.1039
{'fl_cor_y_all' }	0.45507	0.53754	0.75787	0.17191	1	0.75851
{'fl_cov_y_head_inc' }	3.8282	4.1045	0.55948	0.092667	1.1039	0.99877
{'fl_cor_y_head_inc' }	0.56819	0.60585	0.81146	0.064504	0.75851	1
{'fl_cov_y_head_earn' }	1.8477	2.1508	0.42576	0.19287	0.96246	0.87439
{'fl_cor_y_head_earn' }	0.29785	0.34482	0.67071	0.14582	0.71827	0.95088
{'fl_cov_y_spouse_inc' }	0.63967	1.2022	0.20194	0.2672	1.0169	0.10516
{'fl_cor_y_spouse_inc' }	0.09937	0.18573	0.30656	0.19467	0.73129	0.11021
{'fl_cov_yshr_interest'}	0.76424	0.71927	0.037996	-0.066731	-0.0094215	0.0066643
{'fl_cor_yshr_interest'}	0.67572	0.63246	0.3283	-0.27671	-0.038564	0.039749
{'fl_cov_yshr_wage' }	-0.77528	-0.68855	-0.0042957	0.17055	0.10767	0.062645
{'fl_cor_yshr_wage' }	-0.34062	-0.30085	-0.018443	0.35142	0.21899	0.18567
{'fl_cov_yshr_SS' }	0.011037	-0.030725	-0.033701	-0.10382	-0.09825	-0.06931
{'fl_cor_yshr_SS' }	0.0069239	-0.019169	-0.2066	-0.30546	-0.28534	-0.29332
{'fl_cov_yshr_tax' }	0.098159	0.10896	0.018583	0.01337	0.038535	0.024519
{'fl_cor_yshr_tax' }	0.41485	0.45797	0.76748	0.26501	0.75395	0.69903
{'fl_cov_yshr_nttxss' }	0.087122	0.13969	0.052284	0.11719	0.13679	0.093828
{'fl_cor_yshr_nttxss' }	0.050539	0.080586	0.29639	0.31882	0.36733	0.36717
{'fracByP0_01' }	0	0	5.5188e-06	0.15286	4.2239e-06	5.3477e-06
{'fracByP0_1' }	0	0	8.2593e-05	0.15286	6.444e-05	7.874e-05
{'fracByP1' }	0	0	0.0013857	0.15286	0.0010994	0.0013164
{'fracByP5' }	0	0	0.010292	0.15286	0.0079949	0.0098702
{'fracByP10' }	0	0	0.025341	0.15286	0.018888	0.023823
{'fracByP20' }	0.00074832	0.00060951	0.065753	0.15286	0.048269	0.055932
{'fracByP25' }	0.0014123	0.0020285	0.090679	0.15286	0.066791	0.076089
{'fracByP30' }	0.0041719	0.0051595	0.11872	0.15286	0.087944	0.099825
{'fracByP40' }	0.016751	0.01877	0.1844	0.40183	0.13867	0.15374

```
    {'fracByP50'          }      0.045326      0.046338       0.26358       0.40183       0.20207        0.2193
    {'fracByP60'          }      0.095502      0.095716        0.3575       0.40183       0.28072       0.30011
    {'fracByP70'          }       0.17466       0.17847       0.46813       0.56321       0.37901        0.3977
    {'fracByP75'          }       0.24517       0.23715       0.53078       0.56321       0.43771       0.45649
    {'fracByP80'          }       0.32852       0.31134       0.59927       0.75407       0.50477       0.52324
    {'fracByP90'          }       0.56651       0.52814       0.75975        0.8953       0.67658       0.69187
    {'fracByP95'          }       0.70071        0.6954       0.85893        0.8953       0.79526       0.80738
    {'fracByP99'          }       0.90524       0.90259       0.96084             1       0.93132       0.94047
    {'fracByP99_9'        }       0.98567       0.98372       0.99419             1       0.98801       0.99026
    {'fracByP99_99'       }       0.99808        0.9976       0.99922             1       0.99841       0.99858
```

```
% Get Matrixes
cl_st_precompute_list = {'a', 'ar_z_ctr_amz', ...
    'inc', 'inc_unemp', 'spouse_inc', 'spouse_inc_unemp', 'ref_earn_wageind_grid',...
    'ap_idx_lower_ss', 'ap_idx_higher_ss', 'ap_idx_lower_weight_ss'};
mp_controls('bl_print_precompute_verbose') = false;
[mp_precompute_res] = snw_hh_precompute(mp_params, mp_controls, cl_st_precompute_list, ap_ss, P
```

```
Wage quintile cutoffs=0.47017     0.71433      1.0293      1.5654
Completed SNW_HH_PRECOMPUTE;SNW_MP_PARAM=default_moredense_a65zh133zs5_e2m2;SNW_MP_CONTROL=default_test;time cost=71
```

Solve for 2019 Evuvw With 0 and 1 Checks

```
% Call Function
welf_checks = 0;
[ev19_jaeemk_check0, ec19_jaeemk_check0, ev20_jaeemk_check0, ec20_jaeemk_check0] = snw_evuvw19_
    welf_checks, st_solu_type, mp_params, mp_controls, ...
    V_ss, ap_ss, cons_ss, V_unemp, cons_unemp, mp_precompute_res);
```

```
Completed SNW_A4CHK_WRK_BISEC_VEC;welf_checks=0;TR=0.0017225;SNW_MP_PARAM=default_moredense_a65zh133zs5_e2m2;SNW_MP_
Completed SNW_A4CHK_UNEMP_BISEC_VEC;welf_checks=0;TR=0.0017225;xi=0.5;b=1;SNW_MP_PARAM=default_moredense_a65zh133zs5
Completed SNW_EVUVW20_JAEEMK;SNW_MP_PARAM=default_moredense_a65zh133zs5_e2m2;SNW_MP_CONTROL=default_test;timeEUEC=14
Completed SNW_EVUVW19_JAEEMK_FOC;SNW_MP_PARAM=default_moredense_a65zh133zs5_e2m2;SNW_MP_CONTROL=default_test;time=23
```

```
% Call Function
welf_checks = 1;
[ev19_jaeemk_check2, ec19_jaeemk_check2, ev20_jaeemk_check2, ec20_jaeemk_check2] = snw_evuvw19_
    welf_checks, st_solu_type, mp_params, mp_controls, ...
    V_ss, ap_ss, cons_ss, V_unemp, cons_unemp, mp_precompute_res);
```

```
Completed SNW_A4CHK_WRK_BISEC_VEC;welf_checks=1;TR=0.0017225;SNW_MP_PARAM=default_moredense_a65zh133zs5_e2m2;SNW_MP_
Completed SNW_A4CHK_UNEMP_BISEC_VEC;welf_checks=1;TR=0.0017225;xi=0.5;b=1;SNW_MP_PARAM=default_moredense_a65zh133zs5
Completed SNW_EVUVW20_JAEEMK;SNW_MP_PARAM=default_moredense_a65zh133zs5_e2m2;SNW_MP_CONTROL=default_test;timeEUEC=14
Completed SNW_EVUVW19_JAEEMK_FOC;SNW_MP_PARAM=default_moredense_a65zh133zs5_e2m2;SNW_MP_CONTROL=default_test;time=23
```

Differences between Checks in Expected Value and Expected Consumption

```
mn_V_U_gain_check = ev19_jaeemk_check2 - ev19_jaeemk_check0;
mn_MPC_C_gain_share_check = (ec19_jaeemk_check2 - ec19_jaeemk_check0)./(welf_checks*mp_params('
```

Additional Variables

Create additional Staet-Spac Arrays

```
% (n_jgrid,n_agrid,n_etagrid,n_educgrid,n_marriedgrid,n_kidsgrid);
% Children Array
```

```
ar_kids = (1:mp_params('n_kidsgrid')) - 1;
mn_kids = zeros(1,1,1,1,1,length(ar_kids));
mn_kids(1,1,1,1,1,:) = ar_kids;
kids_ss = repmat(mn_kids, [mp_params('n_jgrid'), mp_params('n_agrid'), mp_params('n_etagrid'),
    mp_params('n_educgrid'), mp_params('n_marriedgrid'), 1]);
% Marital Status Arrays
ar_marital = (1:mp_params('n_marriedgrid')) - 1;
mn_marital = zeros(1,1,1,1,length(ar_marital),1);
mn_marital(1,1,1,1,:,1) = ar_marital;
marital_ss = repmat(mn_marital, [mp_params('n_jgrid'), mp_params('n_agrid'), mp_params('n_etagr
    mp_params('n_educgrid'), 1, mp_params('n_kidsgrid')]);
% Educational Status Arrays
ar_educ = (1:mp_params('n_educgrid')) - 1;
mn_educ = zeros(1,1,1,length(ar_educ),1,1);
mn_educ(1,1,1,:,1,1) = ar_educ;
educ_ss = repmat(mn_educ, [mp_params('n_jgrid'), mp_params('n_agrid'), mp_params('n_etagrid'),
    1, mp_params('n_marriedgrid'), mp_params('n_kidsgrid')]);
% Age Array
ar_age = (1:mp_params('n_jgrid')) + 18;
mn_age = zeros(length(ar_age),1,1,1,1,1);
mn_age(:,1,1,1,1,1) = ar_age;
age_ss = repmat(mn_age, [1, mp_params('n_agrid'), mp_params('n_etagrid'), ...
    mp_params('n_educgrid'), mp_params('n_marriedgrid'), mp_params('n_kidsgrid')]);
```

Adjust to Probability Mass Function

```
Phi_true_1 = Phi_true./sum(Phi_true,'all');
```

Age Bounds

```
% 1 = 18
min_age = 1
```

```
min_age = 1
```

```
% retirement, 46+18=64, the year prior to retirement year.
max_age = 46;
```

Scale Statistics to Thousands of Dollars

```
a_ss = mp_dsvfi_results('a_ss')*58.056;
ap_ss = mp_dsvfi_results('ap_ss')*58.056;
c_ss = mp_dsvfi_results('cons_ss')*58.056;
n_ss = mp_dsvfi_results('n_ss');
% household head + spousal (realized) income
y_all = mp_dsvfi_results('y_all_ss')*58.056;
y_head_inc = mp_dsvfi_results('y_head_inc_ss')*58.056;
y_spouse_inc = mp_dsvfi_results('y_spouse_inc_ss')*58.056;

yshr_wage = mp_dsvfi_results('yshr_wage_ss');
yshr_SS = mp_dsvfi_results('yshr_SS_ss');
yshr_nttxss = mp_dsvfi_results('yshr_nttxss_ss');
```

Distributional Statistics Overall All Ages

```
% construct input data
marital_grp = marital_ss(min_age:82, :, :, : ,: ,:);
y_all_grp = y_all(min_age:82, :, :, : ,: ,:);
age_ss_grp = age_ss(min_age:82, :, :, : ,: ,:);
educ_ss_grp = educ_ss(min_age:82, :, :, : ,: ,:);
a_ss_grp = a_ss(min_age:82, :, :, : ,: ,:);
ap_ss_grp = ap_ss(min_age:82, :, :, : ,: ,:);
mn_MPC_C_gain_share_check_grp = mn_MPC_C_gain_share_check(min_age:82, :, :, :, :, :);
Phi_true_grp = Phi_true_1(min_age:82, :, :, : ,: ,:);
c_ss_grp = c_ss(min_age:82, :, :, : ,: ,:);
y_head_inc_grp = y_head_inc(min_age:82, :, :, : ,: ,:);
y_spouse_inc_grp = y_spouse_inc(min_age:82, :, :, : ,: ,:);
yshr_nttxss_grp = yshr_nttxss(min_age:82, :, :, : ,: ,:);

mp_cl_ar_xyz_of_s = containers.Map('KeyType','char', 'ValueType','any');
mp_cl_ar_xyz_of_s('married') = {marital_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('y_all') = {y_all_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('age_ss') = {age_ss_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('educ_ss') = {educ_ss_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('a_ss') = {a_ss_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('ap_ss') = {ap_ss_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('MPC') = {mn_MPC_C_gain_share_check_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('Mass') = {Phi_true_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('c_ss') = {c_ss_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('y_head_inc') = {y_head_inc_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('y_spouse') = {y_spouse_inc_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('yshr_nttxss') = {yshr_nttxss_grp(:), zeros(1)};

mp_cl_ar_xyz_of_s('ar_st_y_name') = ["married", "y_all", "age_ss", "educ_ss", "a_ss", "ap_ss",

% controls
mp_support = containers.Map('KeyType','char', 'ValueType','any');
mp_support('ar_fl_percentiles') = [0.01 10 25 50 75 90 99.99];
mp_support('bl_display_final') = true;
mp_support('bl_display_detail') = false;
mp_support('bl_display_drvm2outcomes') = false;
mp_support('bl_display_drvstats') = false;
mp_support('bl_display_drvm2covcor') = false;

% Call Function
mp_cl_mt_xyz_of_s = ff_simu_stats(Phi_true_grp(:)/sum(Phi_true_grp,'all'), mp_cl_ar_xyz_of_s, m
```

```
xxx tb_outcomes: all stats xxx
    OriginalVariableNames       married        y_all        age_ss       educ_ss        a_ss          ap_ss
    _____________________    _____________    _________    _________    _________    _________    _________

    {'mean'              }        0.47501         84.974       47.129        0.303       245.22       250.91
    {'unweighted_sum'    }              1     7.9255e+09         4879            1    1.2935e+05    5.0546e+10
    {'sd'                }        0.49938         84.549       19.231      0.45956       391.42       393.58
    {'coefofvar'         }         1.0513          0.995      0.40805       1.5167       1.5962       1.5686
    {'gini'              }        0.36718        0.44243      0.23101      0.61588      0.68023      0.68119
    {'min'               }              0         2.2124           19            0            0            0
    {'max'               }              1         2953.5          100            1       7837.6       9503.9
```

{'pYis0' }	0.52499	0	0	0.697	0.12285	0.10286
{'pYls0' }	0	0	0	0	0	0
{'pYgr0' }	0.47501	1	1	0.303	0.87715	0.89714
{'pYisMINY' }	0.52499	6.774e-07	0.02184	0.697	0.12285	0.10286
{'pYisMAXY' }	0.47501	1.671e-12	0.00020326	0.303	6.0119e-06	1.671e-12
{'p0_01' }	0	4.1232	19	0	0	0
{'p10' }	0	20.726	23	0	0	0
{'p25' }	0	33.631	31	0	6.458	10.46
{'p50' }	0	59.948	45	0	82.04	92.227
{'p75' }	1	106.28	62	1	318.35	331.8
{'p90' }	1	176.61	75	1	729.18	702.23
{'p99_99' }	1	1217.5	100	1	5250.6	5140.2
{'fl_cov_married' }	0.24938	12.618	2.9987e-13	0.026842	31.201	31.93
{'fl_cor_married' }	1	0.29884	3.1225e-14	0.11697	0.15962	0.16246
{'fl_cov_y_all' }	12.618	7148.6	-105.85	6.7259	15059	17886
{'fl_cor_y_all' }	0.29884	1	-0.065099	0.1731	0.45504	0.53751
{'fl_cov_age_ss' }	2.9987e-13	-105.85	369.84	5.7371e-13	2902	2762.7
{'fl_cor_age_ss' }	3.1225e-14	-0.065099	1	6.4916e-14	0.38553	0.36501
{'fl_cov_educ_ss' }	0.026842	6.7259	5.7371e-13	0.21119	20.13	20.615
{'fl_cor_educ_ss' }	0.11697	0.1731	6.4916e-14	1	0.11191	0.11398
{'fl_cov_a_ss' }	31.201	15059	2902	20.13	1.5321e+05	1.5316e+05
{'fl_cor_a_ss' }	0.15962	0.45504	0.38553	0.11191	1	0.99423
{'fl_cov_ap_ss' }	31.93	17886	2762.7	20.615	1.5316e+05	1.549e+05
{'fl_cor_ap_ss' }	0.16246	0.53751	0.36501	0.11398	0.99423	1
{'fl_cov_MPC' }	-0.016733	-6.6507	-1.2778	0.0049583	-30.154	-31.209
{'fl_cor_MPC' }	-0.13011	-0.30544	-0.258	0.041894	-0.29913	-0.3079
{'fl_cov_Mass' }	-5.1035e-07	-7.3196e-05	-2.691e-05	-2.0525e-07	-0.00031586	-0.00032246
{'fl_cor_Mass' }	-0.19258	-0.16313	-0.26368	-0.084158	-0.15206	-0.15438
{'fl_cov_c_ss' }	8.8909	2566.3	57.161	4.6211	11440	11782
{'fl_cor_c_ss' }	0.44452	0.75784	0.074211	0.25106	0.72974	0.74742
{'fl_cov_y_head_inc' }	1.6909	3720.9	-73.542	4.2898	12903	13834
{'fl_cor_y_head_inc' }	0.058359	0.75849	-0.065909	0.16088	0.56816	0.60582
{'fl_cov_y_spouse' }	10.927	3427.7	-32.308	2.436	2155.8	4052.1
{'fl_cor_y_spouse' }	0.3947	0.73129	-0.030304	0.095619	0.09935	0.18572
{'fl_cov_yshr_nttxss'}	0.022689	7.935	-3.2573	0.0058708	5.0323	8.0835
{'fl_cor_yshr_nttxss'}	0.1778	0.36727	-0.66283	0.049993	0.050313	0.080376
{'fracByP0_01' }	0	4.224e-06	0.0088049	0	0	0
{'fracByP10' }	0	0.018881	0.047593	0	0	0
{'fracByP25' }	0	0.066793	0.14054	0	0.0014119	0.0020335
{'fracByP50' }	0	0.20209	0.34194	0	0.045325	0.046345
{'fracByP75' }	1	0.43774	0.62344	1	0.24517	0.2372
{'fracByP90' }	1	0.6766	0.82958	1	0.56651	0.52814
{'fracByP99_99' }	1	0.99841	1	1	0.99808	0.9976

```
tb_dist_stats_all = mp_cl_mt_xyz_of_s('tb_outcomes');
```

Distributional Statistics Overall 18 to 64

Statistics overall distributionally for 18 to 64 year olds.

```
% construct input data
marital_grp = marital_ss(min_age:max_age, :, :, : ,: ,:);
y_all_grp = y_all(min_age:max_age, :, :, : ,: ,:);
age_ss_grp = age_ss(min_age:max_age, :, :, : ,: ,:);
educ_ss_grp = educ_ss(min_age:max_age, :, :, : ,: ,:);
a_ss_grp = a_ss(min_age:max_age, :, :, : ,: ,:);
ap_ss_grp = ap_ss(min_age:max_age, :, :, : ,: ,:);
mn_MPC_C_gain_share_check_grp = mn_MPC_C_gain_share_check(min_age:max_age, :, :, :, :, :);
Phi_true_grp = Phi_true_1(min_age:max_age, :, :, : ,: ,:);
c_ss_grp = c_ss(min_age:max_age, :, :, : ,: ,:);
y_head_inc_grp = y_head_inc(min_age:max_age, :, :, : ,: ,:);
```

```
y_spouse_inc_grp = y_spouse_inc(min_age:max_age, :, :, : ,: ,:);
yshr_nttxss_grp = yshr_nttxss(min_age:max_age, :, :, : ,: ,:);

mp_cl_ar_xyz_of_s = containers.Map('KeyType','char', 'ValueType','any');
mp_cl_ar_xyz_of_s('married') = {marital_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('y_all') = {y_all_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('age_ss') = {age_ss_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('educ_ss') = {educ_ss_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('a_ss') = {a_ss_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('ap_ss') = {ap_ss_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('MPC') = {mn_MPC_C_gain_share_check_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('Mass') = {Phi_true_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('c_ss') = {c_ss_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('y_head_inc') = {y_head_inc_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('y_spouse') = {y_spouse_inc_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('yshr_nttxss') = {yshr_nttxss_grp(:), zeros(1)};

mp_cl_ar_xyz_of_s('ar_st_y_name') = ["married", "y_all", "age_ss", "educ_ss", "a_ss", "ap_ss",

% controls
mp_support = containers.Map('KeyType','char', 'ValueType','any');
mp_support('ar_fl_percentiles') = [0.01 10 25 50 75 90 99.99];
mp_support('bl_display_final') = true;
mp_support('bl_display_detail') = false;
mp_support('bl_display_drvm2outcomes') = false;
mp_support('bl_display_drvstats') = false;
mp_support('bl_display_drvm2covcor') = false;

% Call Function
mp_cl_mt_xyz_of_s = ff_simu_stats(Phi_true_grp(:)/sum(Phi_true_grp,'all'), mp_cl_ar_xyz_of_s, m
```

```
xxx tb_outcomes: all stats xxx
    OriginalVariableNames       married        y_all        age_ss       educ_ss        a_ss          ap_ss
    _____________________       _______    _________    _________    _________    _________    _________

    {'mean'              }       0.47501        95.246        39.372        0.303        194.5        207.36
    {'unweighted_sum'    }             1    7.7487e+09          1909            1    1.2935e+05    4.9246e+10
    {'sd'                }       0.49938        89.631        13.105      0.45956        344.5        357.54
    {'coefofvar'         }        1.0513       0.94104       0.33285       1.5167       1.7712       1.7243
    {'gini'              }       0.36718       0.42428       0.18859      0.61588      0.71579      0.71299
    {'min'               }             0        2.2124            19            0            0            0
    {'max'               }             1        2953.5            64            1       7837.6       9503.9
    {'pYis0'             }       0.52499             0             0        0.697      0.14627      0.11928
    {'pYls0'             }             0             0             0            0            0            0
    {'pYgr0'             }       0.47501             1             1        0.303      0.85373      0.88072
    {'pYisMINY'          }       0.52499    8.6135e-07      0.027771        0.697      0.14627      0.11928
    {'pYisMAXY'          }       0.47501    2.1248e-12      0.015675        0.303    5.4766e-06    2.1248e-12
    {'p0_01'             }             0        3.9581            19            0            0            0
    {'p10'               }             0        25.069            22            0            0            0
    {'p25'               }             0        40.654            28            0       3.7372       5.3737
    {'p50'               }             0         69.57            38            0       51.664       62.312
    {'p75'               }             1        119.76            50            1       239.18       253.34
    {'p90'               }             1         192.9            58            1       588.48       599.34
    {'p99_99'            }             1        1249.3            64            1       4707.8       4953.6
    {'fl_cov_married'    }       0.24938        13.756     2.335e-13      0.026842        25.27        26.783
    {'fl_cor_married'    }             1       0.30733     3.5679e-14       0.11697      0.14689      0.15001
    {'fl_cov_y_all'      }        13.756        8033.6        270.03       7.5617        17852        20993
    {'fl_cor_y_all'      }       0.30733             1       0.22988      0.18358      0.57814      0.65507
    {'fl_cov_age_ss'     }     2.335e-13        270.03        171.75    4.3386e-15       2241.5       2328.9
```

```
    {'fl_cor_age_ss'     }     3.5679e-14        0.22988             1      7.204e-16        0.49648        0.49704
    {'fl_cov_educ_ss'    }       0.026842         7.5617     4.3386e-15        0.21119         15.478         16.562
    {'fl_cor_educ_ss'    }        0.11697        0.18358      7.204e-16              1       0.097766         0.1008
    {'fl_cov_a_ss'       }          25.27          17852         2241.5         15.478      1.1868e+05      1.2238e+05
    {'fl_cor_a_ss'       }        0.14689        0.57814        0.49648       0.097766              1        0.99355
    {'fl_cov_ap_ss'      }         26.783          20993         2328.9         16.562      1.2238e+05      1.2783e+05
    {'fl_cor_ap_ss'      }        0.15001        0.65507        0.49704         0.1008         0.99355              1
    {'fl_cov_MPC'        }      -0.017248        -8.3845        -1.4685      0.0073384         -27.859        -29.823
    {'fl_cor_MPC'        }       -0.12735        -0.34491        -0.41317       0.058877        -0.29817        -0.30755
    {'fl_cov_Mass'       }    -6.2681e-07    -0.00010581    -2.2759e-05    -2.2235e-07    -0.00031658    -0.00033582
    {'fl_cor_Mass'       }       -0.21171        -0.19912        -0.29292       -0.081609         -0.155        -0.15843
    {'fl_cov_c_ss'       }         8.9405          2911.4           117.7          4.6429          9782.9           10380
    {'fl_cor_c_ss'       }        0.44676        0.81058        0.22412        0.25211        0.70862        0.72447
    {'fl_cov_y_head_inc' }         1.5449          4083.5         215.29          4.8213           15132           16080
    {'fl_cor_y_head_inc' }       0.050457        0.74307        0.26794        0.17111        0.71641        0.73352
    {'fl_cov_y_spouse'   }         12.211          3950.1         54.733          2.7405          2719.5          4912.7
    {'fl_cor_y_spouse'   }        0.40608          0.7319       0.069359       0.099033          0.1311        0.22819
    {'fl_cov_yshr_nttxss'}      0.0064334          2.2345        0.12412      0.0029398          5.7039          6.3243
    {'fl_cor_yshr_nttxss'}        0.38567        0.74633        0.28352         0.1915        0.49565        0.52953
    {'fracByP0_01'       }              0     3.6432e-06       0.013402              0              0              0
    {'fracByP10'         }              0       0.018969       0.056893              0              0              0
    {'fracByP25'         }              0       0.070975        0.15748              0      0.0011356      0.0011893
    {'fracByP50'         }              0        0.21374        0.35932              0       0.034043       0.035591
    {'fracByP75'         }              1        0.45357        0.64274              1        0.21343        0.20217
    {'fracByP90'         }              1        0.69054        0.84608              1        0.51495        0.48843
    {'fracByP99_99'      }              1        0.99855              1              1        0.99716        0.99719
```

```
tb_dist_stats_all_18to64 = mp_cl_mt_xyz_of_s('tb_outcomes');
```

Distributional Statistics By Kids Count

Various statistics, including MPC (of the first check) by Children Count

```
it_row_ctr = 0;
for it_ctr=1:mp_params('n_kidsgrid')
    display(['xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx']);
    display(['kids =' num2str(ar_kids(it_ctr))]);
    display(['xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx']);

    % construct input data
    marital_grp = marital_ss(min_age:max_age, :, :, : ,: ,it_ctr);
    y_all_grp = y_all(min_age:max_age, :, :, : ,: ,it_ctr);
    age_ss_grp = age_ss(min_age:max_age, :, :, : ,: ,it_ctr);
    educ_ss_grp = educ_ss(min_age:max_age, :, :, : ,: ,it_ctr);
    a_ss_grp = a_ss(min_age:max_age, :, :, : ,: ,it_ctr);
    ap_ss_grp = ap_ss(min_age:max_age, :, :, : ,: ,it_ctr);
    mn_MPC_C_gain_share_check_grp = mn_MPC_C_gain_share_check(min_age:max_age, :, :, :, :, it_c
    Phi_true_grp = Phi_true_1(min_age:max_age, :, :, : ,: ,it_ctr);
    c_ss_grp = c_ss(min_age:max_age, :, :, : ,: ,it_ctr);
    y_head_inc_grp = y_head_inc(min_age:max_age, :, :, : ,: ,it_ctr);
    y_spouse_inc_grp = y_spouse_inc(min_age:max_age, :, :, : ,: ,it_ctr);
    yshr_nttxss_grp = yshr_nttxss(min_age:max_age, :, :, : ,: ,it_ctr);

    mp_cl_ar_xyz_of_s = containers.Map('KeyType','char', 'ValueType','any');
    mp_cl_ar_xyz_of_s('married') = {marital_grp(:), zeros(1)};
    mp_cl_ar_xyz_of_s('y_all') = {y_all_grp(:), zeros(1)};
    mp_cl_ar_xyz_of_s('age_ss') = {age_ss_grp(:), zeros(1)};
    mp_cl_ar_xyz_of_s('educ_ss') = {educ_ss_grp(:), zeros(1)};
```

```
mp_cl_ar_xyz_of_s('a_ss') = {a_ss_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('ap_ss') = {ap_ss_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('MPC') = {mn_MPC_C_gain_share_check_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('Mass') = {Phi_true_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('c_ss') = {c_ss_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('y_head_inc') = {y_head_inc_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('y_spouse') = {y_spouse_inc_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('yshr_nttxss') = {yshr_nttxss_grp(:), zeros(1)};

mp_cl_ar_xyz_of_s('ar_st_y_name') = ["married", "y_all", "age_ss", "educ_ss", "a_ss", "ap_s

% controls
mp_support = containers.Map('KeyType','char', 'ValueType','any');
mp_support('ar_fl_percentiles') = [0.01 10 25 50 75 90 99.99];
mp_support('bl_display_final') = true;
mp_support('bl_display_detail') = false;
mp_support('bl_display_drvm2outcomes') = false;
mp_support('bl_display_drvstats') = false;
mp_support('bl_display_drvm2covcor') = false;

% Call Function
mp_cl_mt_xyz_of_s = ff_simu_stats(Phi_true_grp(:)/sum(Phi_true_grp,'all'), mp_cl_ar_xyz_of_

it_kids = ar_kids(it_ctr);

tb_dist_stats = mp_cl_mt_xyz_of_s('tb_outcomes');

fl_married_mean = tb_dist_stats{"married", "mean"};

fl_age_mean = tb_dist_stats{"age_ss", "mean"};
fl_age_p50 = tb_dist_stats{"age_ss", "p50"};

fl_educ_mean = tb_dist_stats{"educ_ss", "mean"};

fl_a_mean = tb_dist_stats{"a_ss", "mean"};
fl_a_p50 = tb_dist_stats{"a_ss", "p50"};

fl_ap_mean = tb_dist_stats{"ap_ss", "mean"};
fl_ap_p50 = tb_dist_stats{"ap_ss", "p50"};

fl_y_all_mean = tb_dist_stats{"y_all", "mean"};
fl_y_all_p50 = tb_dist_stats{"y_all", "p50"};

fl_mpc_mean = tb_dist_stats{"MPC", "mean"};
fl_mpc_p50 = tb_dist_stats{"MPC", "p50"};

fl_mass = tb_dist_stats{"Mass", "unweighted_sum"};

fl_c_ss_mean = tb_dist_stats{"c_ss", "mean"};
fl_c_ss_p50 = tb_dist_stats{"c_ss", "p50"};

fl_y_head_inc_mean = tb_dist_stats{"y_head_inc", "mean"};
fl_y_spouse_mean = tb_dist_stats{"y_spouse", "mean"};
```

```
    ar_store_stats = [it_kids, fl_married_mean, ...
        fl_age_mean, fl_age_p50, fl_educ_mean, ...
        fl_a_mean, fl_a_p50, fl_ap_mean, fl_ap_p50, ...
        fl_y_all_mean, fl_y_all_p50, ...
        fl_mpc_mean, fl_mpc_p50, ...
        fl_mass, ...
        fl_c_ss_mean, fl_c_ss_p50, ...
        fl_y_head_inc_mean, fl_y_spouse_mean];

    it_row_ctr = it_row_ctr + 1;

    if (it_row_ctr>1)
        mt_store_stats_by_k = [mt_store_stats_by_k;ar_store_stats];
    else
        mt_store_stats_by_k = [ar_store_stats];
    end
end
```

```
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
kids =0
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxx tb_outcomes: all stats xxx
```

OriginalVariableNames	married	y_all	age_ss	educ_ss	a_ss	ap_ss
{'mean' }	0.34092	95.696	42.81	0.29837	267.84	285.19
{'unweighted_sum' }	1	1.9045e+09	1909	1	1.2935e+05	1.0082e+10
{'sd' }	0.47402	93.188	14.55	0.45754	413.66	428.33
{'coefofvar' }	1.3904	0.97379	0.33987	1.5335	1.5444	1.5019
{'gini' }	0.56028	0.43559	0.18997	0.62263	0.66933	0.66565
{'min' }	0	2.2124	19	0	0	0
{'max' }	1	2953.5	64	1	7837.6	9503.9
{'pYis0' }	0.65908	0	0	0.70163	0.10437	0.066435
{'pYls0' }	0	0	0	0	0	0
{'pYgr0' }	0.34092	1	1	0.29837	0.89563	0.93356
{'pYisMINY' }	0.65908	1.2783e-06	0.038791	0.70163	0.10437	0.066435
{'pYisMAXY' }	0.34092	4.4127e-12	0.029551	0.29837	1.0023e-05	4.4127e-12
{'p0_01' }	0	3.8399	19	0	0	0
{'p10' }	0	23.75	21	0	0	0.66421
{'p25' }	0	39.249	29	0	10.255	14.184
{'p50' }	0	68.775	45	0	100.91	114.52
{'p75' }	1	119.82	56	1	363.77	384.75
{'p90' }	1	198.36	61	1	729.18	796.6
{'p99_99' }	1	1317.3	64	1	5250.6	5453.7
{'fl_cov_married' }	0.22469	15.781	0.41952	0.027901	47.935	50.8
{'fl_cor_married' }	1	0.35725	0.060827	0.12864	0.24447	0.25021
{'fl_cov_y_all' }	15.781	8684	314.15	6.9889	24515	28037
{'fl_cor_y_all' }	0.35725	1	0.23169	0.16391	0.63596	0.70243
{'fl_cov_age_ss' }	0.41952	314.15	211.7	-0.40705	2895.3	2996.5
{'fl_cor_age_ss' }	0.060827	0.23169	1	-0.061144	0.48104	0.48082
{'fl_cov_educ_ss' }	0.027901	6.9889	-0.40705	0.20934	17.081	18.304
{'fl_cor_educ_ss' }	0.12864	0.16391	-0.061144	1	0.090246	0.093396
{'fl_cov_a_ss' }	47.935	24515	2895.3	17.081	1.7111e+05	1.7633e+05
{'fl_cor_a_ss' }	0.24447	0.63596	0.48104	0.090246	1	0.9952
{'fl_cov_ap_ss' }	50.8	28037	2996.5	18.304	1.7633e+05	1.8346e+05
{'fl_cor_ap_ss' }	0.25021	0.70243	0.48082	0.093396	0.9952	1
{'fl_cov_MPC' }	-0.0040817	-5.3961	-1.3578	0.016362	-22.104	-23.578
{'fl_cor_MPC' }	-0.040228	-0.27052	-0.43598	0.16707	-0.24964	-0.25716
{'fl_cov_Mass' }	-6.3926e-07	-0.00016151	-4.6365e-05	-2.596e-07	-0.00069632	-0.00073734
{'fl_cor_Mass' }	-0.16893	-0.2171	-0.39918	-0.071073	-0.21087	-0.21564
{'fl_cov_c_ss' }	9.1002	3017.9	137.75	4.0645	13300	14030

{'fl_cor_c_ss' }	0.48715	0.82178	0.24023	0.22541	0.81588	0.83116
{'fl_cov_y_head_inc' }	2.4027	4493.9	256.65	4.356	20579	21776
{'fl_cor_y_head_inc' }	0.078733	0.74906	0.27398	0.14788	0.77274	0.78968
{'fl_cov_y_spouse' }	13.378	4190.1	57.502	2.6329	3936	6261.5
{'fl_cor_y_spouse' }	0.45539	0.72551	0.063767	0.092849	0.15353	0.23588
{'fl_cov_yshr_nttxss'}	0.0065704	2.3727	0.15463	0.0025679	8.1118	8.8272
{'fl_cor_yshr_nttxss'}	0.40207	0.73855	0.30827	0.1628	0.56882	0.59779
{'fracByP0_01' }	0	3.5026e-06	0.017216	0	0	0
{'fracByP10' }	0	0.017915	0.047317	0	0	2.9992e-05
{'fracByP25' }	0	0.067497	0.14043	0	0.002351	0.0026933
{'fracByP50' }	0	0.20658	0.35779	0	0.050647	0.051049
{'fracByP75' }	1	0.44409	0.66951	1	0.26381	0.25241
{'fracByP90' }	1	0.6831	0.86922	1	0.54208	0.54513
{'fracByP99_99' }	1	0.99848	1	1	0.99785	0.99777

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
kids =1
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxx tb_outcomes: all stats xxx

OriginalVariableNames	married	y_all	age_ss	educ_ss	a_ss	ap_ss
{'mean' }	0.48303	94.687	37.46	0.31392	163.05	174.75
{'unweighted_sum' }	1	1.7814e+09	1909	1	1.2935e+05	9.9369e+09
{'sd' }	0.49971	90.675	12.413	0.46408	298.89	310.3
{'coefofvar' }	1.0345	0.95763	0.33137	1.4784	1.8331	1.7757
{'gini' }	0.35621	0.42949	0.18779	0.59992	0.72885	0.72411
{'min' }	0	2.2124	19	0	0	0
{'max' }	1	2715.2	64	1	7837.6	9272
{'pYis0' }	0.51697	0	0	0.68608	0.16638	0.13409
{'pYls0' }	0	0	0	0	0	0
{'pYgr0' }	0.48303	1	1	0.31392	0.83362	0.86591
{'pYisMINY' }	0.51697	8.7082e-07	0.032554	0.68608	0.16638	0.13409
{'pYisMAXY' }	0.48303	2.5175e-12	0.0061116	0.31392	2.7005e-06	2.5175e-12
{'p0_01' }	0	3.9202	19	0	0	0
{'p10' }	0	24.541	21	0	0	0
{'p25' }	0	39.852	26	0	1.9135	3.0553
{'p50' }	0	68.409	37	0	39.794	49.861
{'p75' }	1	118.73	47	1	205.07	209.06
{'p90' }	1	193.79	55	1	467.15	512.18
{'p99_99' }	1	1212.2	64	1	4203.9	4443
{'fl_cov_married' }	0.24971	14.899	0.69339	0.029149	35.5	38.015
{'fl_cor_married' }	1	0.32882	0.11178	0.12569	0.23769	0.24516
{'fl_cov_y_all' }	14.899	8221.9	296.2	7.6969	15691	18932
{'fl_cor_y_all' }	0.32882	1	0.26316	0.18291	0.57898	0.67285
{'fl_cov_age_ss' }	0.69339	296.2	154.09	0.15644	1774.9	1842.5
{'fl_cor_age_ss' }	0.11178	0.26316	1	0.027156	0.47838	0.47835
{'fl_cov_educ_ss' }	0.029149	7.6969	0.15644	0.21537	16.186	17.321
{'fl_cor_educ_ss' }	0.12569	0.18291	0.027156	1	0.11669	0.12028
{'fl_cov_a_ss' }	35.5	15691	1774.9	16.186	89333	91902
{'fl_cor_a_ss' }	0.23769	0.57898	0.47838	0.11669	1	0.9909
{'fl_cov_ap_ss' }	38.015	18932	1842.5	17.321	91902	96289
{'fl_cor_ap_ss' }	0.24516	0.67285	0.47835	0.12028	0.9909	1
{'fl_cov_MPC' }	-0.029849	-9.6826	-1.3781	0.0095259	-25.746	-27.675
{'fl_cor_MPC' }	-0.21465	-0.38374	-0.39896	0.073764	-0.30956	-0.32051
{'fl_cov_Mass' }	-1.9886e-07	-6.1897e-05	-1.3655e-05	-1.6868e-07	-0.00018023	-0.000192
{'fl_cor_Mass' }	-0.14586	-0.25019	-0.40317	-0.13322	-0.22101	-0.22678
{'fl_cov_c_ss' }	8.8069	2953.1	157.35	4.6956	9278.1	9891.8
{'fl_cor_c_ss' }	0.43769	0.80882	0.31481	0.25128	0.77093	0.79169
{'fl_cov_y_head_inc' }	2.065	3941	206.32	4.8059	12771	13612
{'fl_cor_y_head_inc' }	0.069081	0.72657	0.27785	0.17312	0.71427	0.73329
{'fl_cov_y_spouse' }	12.834	4280.8	89.888	2.891	2920.6	5320.2
{'fl_cor_y_spouse' }	0.4103	0.75422	0.11568	0.099519	0.1561	0.2739
{'fl_cov_yshr_nttxss'}	0.0069685	2.2798	0.13506	0.0030572	5.0207	5.6443
{'fl_cor_yshr_nttxss'}	0.41262	0.74395	0.32195	0.19492	0.49704	0.53821

{'fracByP0_01' }	0	3.7241e-06	0.016512	0	0	0
{'fracByP10' }	0	0.018692	0.055462	0	0	0
{'fracByP25' }	0	0.069801	0.1535	0	0.00069906	0.00081116
{'fracByP50' }	0	0.21065	0.37529	0	0.028068	0.030359
{'fracByP75' }	1	0.4485	0.6393	1	0.21188	0.19187
{'fracByP90' }	1	0.68715	0.85347	1	0.47478	0.47724
{'fracByP99_99' }	1	0.99858	1	1	0.99686	0.99698

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kids =2
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxx tb_outcomes: all stats xxx

OriginalVariableNames	**married**	**y_all**	**age_ss**	**educ_ss**	**a_ss**	**ap_ss**
{'mean' }	0.58436	95.419	35.807	0.30789	124.28	132.94
{'unweighted_sum' }	1	1.6966e+09	1909	1	1.2935e+05	9.8386e+09
{'sd' }	0.49283	87.576	10.518	0.46162	238.29	247.97
{'coefofvar' }	0.84337	0.91781	0.29375	1.4993	1.9174	1.8652
{'gini' }	0.22818	0.41656	0.16465	0.60873	0.73697	0.73747
{'min' }	0	2.2124	19	0	0	0
{'max' }	1	2551.1	64	1	7837.6	9108.8
{'pYis0' }	0.41564	0	0	0.69211	0.1963	0.18544
{'pYls0' }	0	0	0	0	0	0
{'pYgr0' }	0.58436	1	1	0.30789	0.8037	0.81456
{'pYisMINY' }	0.41564	4.0938e-07	0.014906	0.69211	0.1963	0.18544
{'pYisMAXY' }	0.58436	1.0736e-12	0.0019534	0.30789	9.1954e-07	1.0736e-12
{'p0_01' }	0	4.1232	19	0	0	0
{'p10' }	0	26.204	23	0	0	0
{'p25' }	0	41.871	27	0	0.80724	1.6539
{'p50' }	1	70.257	35	0	29.898	39.175
{'p75' }	1	120.84	43	1	146.89	150.28
{'p90' }	1	190.32	51	1	363.77	387.37
{'p99_99' }	1	1122.5	64	1	3737.2	3800.9
{'fl_cov_married' }	0.24288	12.863	0.51579	0.025827	25.491	27.147
{'fl_cor_married' }	1	0.29802	0.099501	0.11352	0.21706	0.22214
{'fl_cov_y_all' }	12.863	7669.6	228.36	8.3133	11413	14327
{'fl_cor_y_all' }	0.29802	1	0.2479	0.20564	0.54689	0.65975
{'fl_cov_age_ss' }	0.51579	228.36	110.63	0.45675	1116.6	1160.8
{'fl_cor_age_ss' }	0.099501	0.2479	1	0.094068	0.44549	0.44505
{'fl_cov_educ_ss' }	0.025827	8.3133	0.45675	0.21309	15.009	16.023
{'fl_cor_educ_ss' }	0.11352	0.20564	0.094068	1	0.13644	0.13997
{'fl_cov_a_ss' }	25.491	11413	1116.6	15.009	56783	58304
{'fl_cor_a_ss' }	0.21706	0.54689	0.44549	0.13644	1	0.9867
{'fl_cov_ap_ss' }	27.147	14327	1160.8	16.023	58304	61490
{'fl_cor_ap_ss' }	0.22214	0.65975	0.44505	0.13997	0.9867	1
{'fl_cov_MPC' }	-0.055633	-12.184	-1.1929	-0.0029873	-25.836	-27.838
{'fl_cor_MPC' }	-0.35573	-0.43842	-0.3574	-0.020393	-0.34167	-0.35377
{'fl_cov_Mass' }	-4.6541e-07	-7.3755e-05	-9.0248e-06	-2.4395e-07	-0.0001563	-0.00016809
{'fl_cor_Mass' }	-0.32688	-0.29151	-0.29699	-0.18292	-0.22704	-0.23464
{'fl_cov_c_ss' }	8.1321	2864.5	129.17	5.2868	7092.7	7613.6
{'fl_cor_c_ss' }	0.40653	0.80585	0.30257	0.28216	0.73333	0.75645
{'fl_cov_y_head_inc' }	1.6658	3681.5	154.09	5.3399	9372.8	10048
{'fl_cor_y_head_inc' }	0.058412	0.72644	0.25315	0.1999	0.67972	0.70025
{'fl_cov_y_spouse' }	11.197	3988.2	74.272	2.9734	2040.1	4279.2
{'fl_cor_y_spouse' }	0.37578	0.75322	0.11679	0.10654	0.1416	0.28543
{'fl_cov_yshr_nttxss'}	0.0064177	2.1485	0.10113	0.0033688	3.5399	4.0928
{'fl_cor_yshr_nttxss'}	0.39977	0.75315	0.29517	0.22404	0.45606	0.50671
{'fracByP0_01' }	0	3.7828e-06	0.0079094	0	0	0
{'fracByP10' }	0	0.019866	0.075143	0	0	0
{'fracByP25' }	0	0.073594	0.17417	0	0.00024523	0.00032928
{'fracByP50' }	1	0.21851	0.40471	0	0.027182	0.029001
{'fracByP75' }	1	0.4596	0.65078	1	0.20572	0.1836
{'fracByP90' }	1	0.69638	0.85987	1	0.47333	0.45943
{'fracByP99_99' }	1	0.99869	1	1	0.99695	0.99655

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kids =3
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxx tb_outcomes: all stats xxx

OriginalVariableNames	married	y_all	age_ss	educ_ss	a_ss	ap_ss
{'mean' }	0.69032	96.012	35.356	0.30365	101.3	108.26
{'unweighted_sum' }	1	1.6091e+09	1909	1	1.2935e+05	9.7565e+09
{'sd' }	0.46236	83.53	9.1314	0.45983	196.58	204.96
{'coefofvar' }	0.66978	0.86999	0.25827	1.5143	1.9407	1.8933
{'gini' }	0.12198	0.40117	0.14344	0.61493	0.7291	0.73174
{'min' }	0	2.2124	19	0	0	0
{'max' }	1	2381.6	64	1	7837.6	8950.9
{'pYis0' }	0.30968	0	0	0.69635	0.19175	0.18156
{'pYls0' }	0	0	0	0	0	0
{'pYgr0' }	0.69032	1	1	0.30365	0.80825	0.81844
{'pYisMINY' }	0.30968	2.133e-07	0.007718	0.69635	0.19175	0.18156
{'pYisMAXY' }	0.69032	3.4711e-13	0.00070368	0.30365	3.1947e-07	3.4711e-13
{'p0_01' }	0	4.4187	19	0	0	0
{'p10' }	0	28.136	24	0	0	0
{'p25' }	0	44.054	28	0	0.80724	1.9135
{'p50' }	1	72.443	34	0	29.898	33.491
{'p75' }	1	122.12	42	1	100.91	119.1
{'p90' }	1	185.9	48	1	276.88	306.3
{'p99_99' }	1	1027.1	64	1	3306.5	3355.1
{'fl_cov_married' }	0.21378	9.9452	0.39867	0.02286	16.463	17.437
{'fl_cor_married' }	1	0.25751	0.094427	0.10752	0.18113	0.184
{'fl_cov_y_all' }	9.9452	6977.2	176.66	8.4101	8663.4	11197
{'fl_cor_y_all' }	0.25751	1	0.23161	0.21896	0.5276	0.65402
{'fl_cov_age_ss' }	0.39867	176.66	83.382	0.55101	713.9	743.03
{'fl_cor_age_ss' }	0.094427	0.23161	1	0.13123	0.3977	0.397
{'fl_cov_educ_ss' }	0.02286	8.4101	0.55101	0.21145	12.958	13.851
{'fl_cor_educ_ss' }	0.10752	0.21896	0.13123	1	0.14334	0.14696
{'fl_cov_a_ss' }	16.463	8663.4	713.9	12.958	38644	39601
{'fl_cor_a_ss' }	0.18113	0.5276	0.3977	0.14334	1	0.98286
{'fl_cov_ap_ss' }	17.437	11197	743.03	13.851	39601	42010
{'fl_cor_ap_ss' }	0.184	0.65402	0.397	0.14696	0.98286	1
{'fl_cov_MPC' }	-0.061242	-11.95	-0.93092	-0.0093462	-21.838	-23.617
{'fl_cor_MPC' }	-0.42463	-0.45863	-0.32683	-0.065159	-0.35613	-0.36939
{'fl_cov_Mass' }	-2.6557e-07	-3.5455e-05	-3.3149e-06	-1.3715e-07	-6.3012e-05	-6.8528e-05
{'fl_cor_Mass' }	-0.38696	-0.28596	-0.24457	-0.20093	-0.21595	-0.22525
{'fl_cov_c_ss' }	6.6057	2725.3	105	5.4818	5577.8	6028.1
{'fl_cor_c_ss' }	0.35578	0.81251	0.28636	0.29687	0.7066	0.73241
{'fl_cov_y_head_inc' }	1.3302	3539.8	118.35	5.592	7371.5	7956.3
{'fl_cor_y_head_inc' }	0.05051	0.744	0.22755	0.2135	0.65833	0.68151
{'fl_cov_y_spouse' }	8.6149	3437.4	58.307	2.8181	1291.9	3240.9
{'fl_cor_y_spouse' }	0.3324	0.73415	0.11391	0.10933	0.11724	0.28209
{'fl_cov_yshr_nttxss'}	0.0052966	1.9936	0.078236	0.0034153	2.5823	3.0807
{'fl_cor_yshr_nttxss'}	0.36767	0.76604	0.27499	0.23838	0.42161	0.48242
{'fracByP0_01' }	0	4.0037e-06	0.0041476	0	0	0
{'fracByP10' }	0	0.021316	0.072166	0	0	0
{'fracByP25' }	0	0.078153	0.18337	0	0.00031224	0.00051709
{'fracByP50' }	1	0.22773	0.39789	0	0.038052	0.034485
{'fracByP75' }	1	0.47322	0.69228	1	0.18766	0.19112
{'fracByP90' }	1	0.7065	0.86	1	0.45944	0.45862
{'fracByP99_99' }	1	0.9988	1	1	0.99675	0.99624

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kids =4
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxx tb_outcomes: all stats xxx

OriginalVariableNames	married	y_all	age_ss	educ_ss	a_ss	ap_ss

{'mean' }	0.78724	91.676	35.383	0.29511	81.617	85.611
{'unweighted_sum' }	1	1.4702e+09	1909	1	1.2935e+05	9.6506e+09
{'sd' }	0.40926	74.133	7.9178	0.45609	164.3	170.7
{'coefofvar' }	0.51987	0.80864	0.22378	1.5455	2.0131	1.9939
{'gini' }	0.054374	0.38168	0.12297	0.62738	0.72749	0.73583
{'min' }	0	2.2124	19	0	0	0
{'max' }	1	2113.2	64	1	7837.6	8726.8
{'pYis0' }	0.21276	0	0	0.70489	0.18917	0.18302
{'pYls0' }	0	0	0	0	0	0
{'pYgr0' }	0.78724	1	1	0.29511	0.81083	0.81698
{'pYisMINY' }	0.21276	9.2536e-08	0.0035072	0.70489	0.18917	0.18302
{'pYisMAXY' }	0.78724	2.0254e-13	0.00027556	0.29511	1.1672e-07	7.7513e-14
{'p0_01' }	0	4.7807	19	0	0	0
{'p10' }	0	29.13	26	0	0	0
{'p25' }	1	44.24	29	0	0.80724	1.854
{'p50' }	1	71.8	35	0	29.898	29.435
{'p75' }	1	115.49	41	1	82.04	87.298
{'p90' }	1	172.56	46	1	239.18	238.99
{'p99_99' }	1	888.01	64	1	2910.1	3021.1
{'fl_cov_married' }	0.16749	5.9174	0.25239	0.018555	8.6206	8.7102
{'fl_cor_married' }	1	0.19504	0.077888	0.099404	0.1282	0.12468
{'fl_cov_y_all' }	5.9174	5495.7	126.24	7.9495	6630.3	8295.7
{'fl_cor_y_all' }	0.19504	1	0.21507	0.23511	0.54435	0.65556
{'fl_cov_age_ss' }	0.25239	126.24	62.692	0.61699	463.7	479.98
{'fl_cor_age_ss' }	0.077888	0.21507	1	0.17085	0.35644	0.35513
{'fl_cov_educ_ss' }	0.018555	7.9495	0.61699	0.20802	10.809	11.425
{'fl_cor_educ_ss' }	0.099404	0.23511	0.17085	1	0.14424	0.14675
{'fl_cov_a_ss' }	8.6206	6630.3	463.7	10.809	26996	27613
{'fl_cor_a_ss' }	0.1282	0.54435	0.35644	0.14424	1	0.98455
{'fl_cov_ap_ss' }	8.7102	8295.7	479.98	11.425	27613	29138
{'fl_cor_ap_ss' }	0.12468	0.65556	0.35513	0.14675	0.98455	1
{'fl_cov_MPC' }	-0.04739	-10.199	-0.82379	-0.011367	-17.743	-18.962
{'fl_cor_MPC' }	-0.39132	-0.46494	-0.3516	-0.084227	-0.36495	-0.37541
{'fl_cov_Mass' }	-1.0116e-07	-1.7179e-05	-1.6822e-06	-8.6576e-08	-3.0647e-05	-3.3262e-05
{'fl_cor_Mass' }	-0.30657	-0.28741	-0.26349	-0.23543	-0.23134	-0.24167
{'fl_cov_c_ss' }	4.4325	2483.7	79.686	5.416	4382.5	4727
{'fl_cor_c_ss' }	0.27632	0.85476	0.25676	0.30296	0.6805	0.7065
{'fl_cov_y_head_inc' }	0.92362	3408.6	90.849	5.7717	5998.5	6501.5
{'fl_cor_y_head_inc' }	0.03994	0.81373	0.20306	0.22396	0.64611	0.67406
{'fl_cov_y_spouse' }	4.9938	2087.1	35.394	2.1778	631.84	1794.1
{'fl_cor_y_spouse' }	0.28208	0.65082	0.10334	0.11038	0.088899	0.24298
{'fl_cov_yshr_nttxss'}	0.0035289	1.7418	0.059073	0.0033945	1.9291	2.3048
{'fl_cor_yshr_nttxss'}	0.29013	0.79058	0.25104	0.25043	0.39506	0.45431
{'fracByP0_01' }	0	4.5191e-06	0.0018833	0	0	0
{'fracByP10' }	0	0.023539	0.08684	0	0	0
{'fracByP25' }	1	0.083914	0.18322	0	0.00038004	0.00052367
{'fracByP50' }	1	0.24018	0.44948	0	0.059094	0.038166
{'fracByP75' }	1	0.48959	0.71178	1	0.20094	0.18709
{'fracByP90' }	1	0.71753	0.86506	1	0.48753	0.44498
{'fracByP99_99' }	1	0.9989	1	1	0.99603	0.99569

Distributional Statistics By Marital Status and Kids Count

Various statistics, including MPC (of the first check) by Marital Status and Kids COunt

```
it_row_ctr = 0;
for it_marry_ctr=1:mp_params('n_marriedgrid')

    display(['']);
    display(['']);
    display(['------------------------------']);
```

```
    display(['------------------------------']);
    display(['------------------------------']);
    display(['------------------------------']);
    display(['xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx']);
    display(['Marital =' num2str(ar_marital(it_marry_ctr))]);
    display(['xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx']);
    display(['------------------------------']);
    display(['------------------------------']);

    for it_kids_ctr=1:mp_params('n_kidsgrid')
        display(['xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx']);
        display(['Marital =' num2str(ar_marital(it_marry_ctr)) ' and kids =' num2str(ar_kids(it
        display(['xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx']);

        % construct input data
        y_all_grp = y_all(min_age:max_age, :, :, : ,it_marry_ctr ,it_ctr);
        age_ss_grp = age_ss(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);
        educ_ss_grp = educ_ss(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);
        a_ss_grp = a_ss(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);
        ap_ss_grp = ap_ss(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);
        mn_MPC_C_gain_share_check_grp = mn_MPC_C_gain_share_check(min_age:max_age, :, :, :, it_
        Phi_true_grp = Phi_true_1(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);
        c_ss_grp = c_ss(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);
        y_head_inc_grp = y_head_inc(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);
        y_spouse_inc_grp = y_spouse_inc(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);
        yshr_nttxss_grp = yshr_nttxss(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);

        mp_cl_ar_xyz_of_s = containers.Map('KeyType','char', 'ValueType','any');
        mp_cl_ar_xyz_of_s('y_all') = {y_all_grp(:), zeros(1)};
        mp_cl_ar_xyz_of_s('age_ss') = {age_ss_grp(:), zeros(1)};
        mp_cl_ar_xyz_of_s('educ_ss') = {educ_ss_grp(:), zeros(1)};
        mp_cl_ar_xyz_of_s('a_ss') = {a_ss_grp(:), zeros(1)};
        mp_cl_ar_xyz_of_s('ap_ss') = {ap_ss_grp(:), zeros(1)};
        mp_cl_ar_xyz_of_s('MPC') = {mn_MPC_C_gain_share_check_grp(:), zeros(1)};
        mp_cl_ar_xyz_of_s('Mass') = {Phi_true_grp(:), zeros(1)};
        mp_cl_ar_xyz_of_s('c_ss') = {c_ss_grp(:), zeros(1)};
        mp_cl_ar_xyz_of_s('y_head_inc') = {y_head_inc_grp(:), zeros(1)};
        mp_cl_ar_xyz_of_s('y_spouse') = {y_spouse_inc_grp(:), zeros(1)};
        mp_cl_ar_xyz_of_s('yshr_nttxss') = {yshr_nttxss_grp(:), zeros(1)};

        mp_cl_ar_xyz_of_s('ar_st_y_name') = ["y_all", "age_ss", "educ_ss", "a_ss", "ap_ss", "MP

        % controls
        mp_support = containers.Map('KeyType','char', 'ValueType','any');
        mp_support('ar_fl_percentiles') = [0.01 10 25 50 75 90 99.99];
        mp_support('bl_display_final') = true;
        mp_support('bl_display_detail') = false;
        mp_support('bl_display_drvm2outcomes') = false;
        mp_support('bl_display_drvstats') = false;
        mp_support('bl_display_drvm2covcor') = false;

        % Call Function
        mp_cl_mt_xyz_of_s = ff_simu_stats(Phi_true_grp(:)/sum(Phi_true_grp,'all'), mp_cl_ar_xyz
```

```
        it_marital = ar_marital(it_marry_ctr);
        it_kids = ar_kids(it_kids_ctr);

        tb_dist_stats = mp_cl_mt_xyz_of_s('tb_outcomes');
        fl_age_mean = tb_dist_stats{"age_ss", "mean"};
        fl_age_p50 = tb_dist_stats{"age_ss", "p50"};

        fl_educ_mean = tb_dist_stats{"educ_ss", "mean"};

        fl_a_mean = tb_dist_stats{"a_ss", "mean"};
        fl_a_p50 = tb_dist_stats{"a_ss", "p50"};

        fl_ap_mean = tb_dist_stats{"ap_ss", "mean"};
        fl_ap_p50 = tb_dist_stats{"ap_ss", "p50"};

        fl_y_all_mean = tb_dist_stats{"y_all", "mean"};
        fl_y_all_p50 = tb_dist_stats{"y_all", "p50"};

        fl_mpc_mean = tb_dist_stats{"MPC", "mean"};
        fl_mpc_p50 = tb_dist_stats{"MPC", "p50"};

        fl_mass = tb_dist_stats{"Mass", "unweighted_sum"};

        fl_c_ss_mean = tb_dist_stats{"c_ss", "mean"};
        fl_c_ss_p50 = tb_dist_stats{"c_ss", "p50"};

        fl_y_head_inc_mean = tb_dist_stats{"y_head_inc", "mean"};
        fl_y_spouse_mean = tb_dist_stats{"y_spouse", "mean"};

        ar_store_stats = [it_marital, it_kids, ...
            fl_age_mean, fl_age_p50, fl_educ_mean, ...
            fl_a_mean, fl_a_p50, fl_ap_mean, fl_ap_p50, ...
            fl_y_all_mean, fl_y_all_p50, ...
            fl_mpc_mean, fl_mpc_p50, ...
            fl_mass, ...
            fl_c_ss_mean, fl_c_ss_p50, ...
            fl_y_head_inc_mean, fl_y_spouse_mean];

        it_row_ctr = it_row_ctr + 1;

        if (it_row_ctr>1)
            mt_store_stats_by_mk = [mt_store_stats_by_mk;ar_store_stats];
        else
            mt_store_stats_by_mk = [ar_store_stats];
        end
    end
end
```

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  0×0 empty char array

  0×0 empty char array

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xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Marital =0
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
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xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Marital =0 and kids =0
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxx tb_outcomes: all stats xxx
```

OriginalVariableNames	y_all	age_ss	educ_ss	a_ss	ap_ss	MPC
{'mean' }	71.752	42.174	0.25604	195.11	208.11	0.14002
{'unweighted_sum' }	1.7831e+08	1909	1	1.2935e+05	1.6068e+09	44908
{'sd' }	62.288	14.196	0.43644	339.77	352.46	0.23811
{'coefofvar' }	0.8681	0.33661	1.7046	1.7414	1.6936	1.7005
{'gini' }	0.40852	0.1892	0.68372	0.7026	0.69895	0.58852
{'min' }	2.2124	19	0	0	0	-1.6475e-08
{'max' }	1414.1	64	1	7837.6	8386.2	1
{'pYis0' }	0	0	0.74396	0.11911	0.081859	0
{'pYls0' }	0	0	0	0	0	4.5509e-07
{'pYgr0' }	1	1	0.25604	0.88089	0.91814	1
{'pYisMINY' }	1.9394e-06	0.036566	0.74396	0.11911	0.081859	5.3209e-09
{'pYisMAXY' }	1.1947e-09	0.024953	0.25604	5.4117e-06	5.9148e-10	2.52e-05
{'p0_01' }	3.6063	19	0	0	0	0.033823
{'p10' }	20.129	22	0	0	0.20085	0.041649
{'p25' }	31.931	29	0	3.7372	6.5636	0.045737
{'p50' }	53.79	44	0	65.686	70.536	0.051999
{'p75' }	90.494	55	1	239.18	258.98	0.064984
{'p90' }	143.31	61	1	525.49	583.89	0.4252
{'p99_99' }	816.36	64	1	4974.3	5033.7	1
{'fl_cov_y_all' }	3879.8	217.85	3.8458	17148	18233	-4.5809
{'fl_cor_y_all' }	1	0.24637	0.14147	0.81024	0.83049	-0.30887
{'fl_cov_age_ss' }	217.85	201.53	-0.25515	2124.1	2205.5	-1.3124
{'fl_cor_age_ss' }	0.24637	1	-0.041181	0.44036	0.44078	-0.38826
{'fl_cov_educ_ss' }	3.8458	-0.25515	0.19048	8.5838	9.2793	0.020725
{'fl_cor_educ_ss' }	0.14147	-0.041181	1	0.057885	0.060323	0.19943
{'fl_cov_a_ss' }	17148	2124.1	8.5838	1.1544e+05	1.1966e+05	-17.446
{'fl_cor_a_ss' }	0.81024	0.44036	0.057885	1	0.99922	-0.21564
{'fl_cov_ap_ss' }	18233	2205.5	9.2793	1.1966e+05	1.2423e+05	-18.642
{'fl_cor_ap_ss' }	0.83049	0.44078	0.060323	0.99922	1	-0.22213
{'fl_cov_MPC' }	-4.5809	-1.3124	0.020725	-17.446	-18.642	0.056696
{'fl_cor_MPC' }	-0.30887	-0.38826	0.19943	-0.21564	-0.22213	1
{'fl_cov_Mass' }	-0.00012497	-5.6686e-05	-3.0201e-07	-0.00063245	-0.00066786	4.4306e-07
{'fl_cor_Mass' }	-0.21994	-0.43773	-0.075858	-0.20405	-0.20772	0.20398
{'fl_cov_c_ss' }	1859.9	85.521	2.2319	8778.5	9253.9	-2.3581
{'fl_cor_c_ss' }	0.97519	0.19675	0.16702	0.84382	0.8575	-0.32345
{'fl_cov_y_head_inc' }	3879.8	217.85	3.8458	17148	18233	-4.5809
{'fl_cor_y_head_inc' }	1	0.24637	0.14147	0.81024	0.83049	-0.30887
{'fl_cov_y_spouse' }	0	0	0	0	0	0
{'fl_cor_y_spouse' }	NaN	NaN	NaN	NaN	NaN	NaN
{'fl_cov_yshr_nttxss'}	1.7036	0.14382	0.0019345	6.9206	7.3705	-0.0045549
{'fl_cor_yshr_nttxss'}	0.79998	0.29631	0.12964	0.59576	0.61165	-0.55952
{'fracByP0_01' }	4.4303e-06	0.016474	0	0	0	2.2103e-05
{'fracByP10' }	0.020773	0.059565	0	0	5.8512e-06	0.027886
{'fracByP25' }	0.075454	0.14379	0	0.0011338	0.0016584	0.074873
{'fracByP50' }	0.22298	0.3659	0	0.043403	0.039292	0.16185
{'fracByP75' }	0.46643	0.67037	1	0.22326	0.21886	0.26365
{'fracByP90' }	0.70129	0.88673	1	0.49372	0.50105	0.41472
{'fracByP99_99' }	0.99869	1	1	0.99759	0.99716	0.99932

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Marital =0 and kids =1
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
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xxx tb_outcomes: all stats xxx

OriginalVariableNames	y_all	age_ss	educ_ss	a_ss	ap_ss	MPC
{'mean' }	65.867	36.118	0.25753	94.382	101.22	0.27035
{'unweighted_sum' }	1.7831e+08	1909	1	1.2935e+05	1.5913e+09	51229
{'sd' }	56.932	11.182	0.43728	214.92	223.55	0.34398
{'coefofvar' }	0.86435	0.3096	1.6979	2.2771	2.2087	1.2724
{'gini' }	0.40364	0.17438	0.68158	0.79318	0.79099	0.60214
{'min' }	2.2124	19	0	0	0	-1.0027e-08
{'max' }	1414.1	64	1	7837.6	8291.1	1
{'pYis0' }	0	0	0.74247	0.23563	0.21309	0
{'pYls0' }	0	0	0	0	0	4.6508e-09
{'pYgr0' }	1	1	0.25753	0.76437	0.78691	1
{'pYisMINY' }	1.6845e-06	0.020845	0.74247	0.23563	0.21309	1.5329e-13
{'pYisMAXY' }	3.4305e-10	0.0031122	0.25753	8.262e-07	1.6379e-10	2.981e-05
{'p0_01' }	3.5188	19	0	0	0	0.038534
{'p10' }	19.292	22	0	0	0	0.046864
{'p25' }	30.023	26	0	0.029898	0.23918	0.05028
{'p50' }	49.454	35	0	10.255	14.159	0.059088
{'p75' }	82.311	45	1	82.04	100.97	0.41883
{'p90' }	130.49	52	1	276.88	293.79	0.92925
{'p99_99' }	764.17	64	1	3737.2	3751.1	1
{'fl_cov_y_all' }	3241.3	152.53	4.1103	9427.3	10125	-8.9788
{'fl_cor_y_all' }	1	0.23959	0.16511	0.77047	0.79555	-0.45848
{'fl_cov_age_ss' }	152.53	125.05	0.19904	967.92	1008	-1.3659
{'fl_cor_age_ss' }	0.23959	1	0.040704	0.40274	0.40323	-0.35509
{'fl_cov_educ_ss' }	4.1103	0.19904	0.19121	5.7853	6.3576	0.021532
{'fl_cor_educ_ss' }	0.16511	0.040704	1	0.061559	0.065037	0.14315
{'fl_cov_a_ss' }	9427.3	967.92	5.7853	46190	47995	-20.591
{'fl_cor_a_ss' }	0.77047	0.40274	0.061559	1	0.99895	-0.27853
{'fl_cov_ap_ss' }	10125	1008	6.3576	47995	49975	-22.11
{'fl_cor_ap_ss' }	0.79555	0.40323	0.065037	0.99895	1	-0.28753
{'fl_cov_MPC' }	-8.9788	-1.3659	0.021532	-20.591	-22.11	0.11833
{'fl_cor_MPC' }	-0.45848	-0.35509	0.14315	-0.27853	-0.28753	1
{'fl_cov_Mass' }	-4.8054e-05	-1.3242e-05	-1.409e-07	-0.00013616	-0.0001451	4.0203e-07
{'fl_cor_Mass' }	-0.33303	-0.46722	-0.12714	-0.24996	-0.25609	0.46114
{'fl_cov_c_ss' }	1766.6	76.831	2.5674	5341.5	5695.3	-5.4378
{'fl_cor_c_ss' }	0.98556	0.21823	0.18649	0.7894	0.80918	-0.5021
{'fl_cov_y_head_inc' }	3241.3	152.53	4.1103	9427.3	10125	-8.9788
{'fl_cor_y_head_inc' }	1	0.23959	0.16511	0.77047	0.79555	-0.45848
{'fl_cov_y_spouse' }	0	0	0	0	0	0
{'fl_cor_y_spouse' }	NaN	NaN	NaN	NaN	NaN	NaN
{'fl_cov_yshr_nttxss'}	1.5555	0.10317	0.0024166	3.8467	4.1371	-0.0084909
{'fl_cor_yshr_nttxss'}	0.80522	0.2719	0.16288	0.5275	0.54542	-0.72749
{'fracByP0_01' }	4.7258e-06	0.010966	0	0	0	1.3978e-05
{'fracByP10' }	0.021712	0.068419	0	0	0	0.016512
{'fracByP25' }	0.078097	0.15825	0	6.9352e-06	3.5474e-05	0.043505
{'fracByP50' }	0.22713	0.37923	0	0.0099825	0.010737	0.093156
{'fracByP75' }	0.46939	0.67298	1	0.11689	0.12619	0.22384
{'fracByP90' }	0.70221	0.85638	1	0.39992	0.38891	0.63843
{'fracByP99_99' }	0.99866	1	1	0.99622	0.99554	0.99967

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Marital =0 and kids =2
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xxx tb_outcomes: all stats xxx

OriginalVariableNames	y_all	age_ss	educ_ss	a_ss	ap_ss	MPC
{'mean' }	64.473	34.566	0.24576	62.952	67.629	0.40193
{'unweighted_sum' }	1.7831e+08	1909	1	1.2935e+05	1.5826e+09	56327
{'sd' }	54.982	9.1574	0.43053	161.65	168.99	0.41343
{'coefofvar' }	0.85279	0.26492	1.7519	2.5678	2.4988	1.0286
{'gini' }	0.39845	0.14726	0.69833	0.83755	0.84059	0.53533

{'min'}	2.2124	19	0	0	0	-7.549e-10
{'max'}	1414.1	64	1	7837.6	8229	1
{'pYis0'}	0	0	0.75424	0.36638	0.36654	0
{'pYls0'}	0	0	0	0	0	0
{'pYgr0'}	1	1	0.24576	0.63362	0.63346	1
{'pYisMINY'}	9.8494e-07	0.01156	0.75424	0.36638	0.36654	0
{'pYisMAXY'}	6.7773e-11	0.00057855	0.24576	1.4e-07	9.363e-12	1.4549e-05
{'p0_01'}	3.5915	19	0	0	0	0.040756
{'p10'}	19.324	23	0	0	0	0.049871
{'p25'}	29.888	27	0	0	0	0.054254
{'p50'}	48.811	34	0	1.9135	3.2844	0.088137
{'p75'}	80.448	41	0	51.664	56.749	0.94713
{'p90'}	126.75	47	1	174.36	199.54	0.99668
{'p99_99'}	740.25	64	1	2910.1	3038.9	1
{'fl_cov_y_all'}	3023	108.56	4.4029	6789.1	7342.2	-12.648
{'fl_cor_y_all'}	1	0.21562	0.186	0.76387	0.7902	-0.55643
{'fl_cov_age_ss'}	108.56	83.858	0.38657	516.18	539.94	-1.27
{'fl_cor_age_ss'}	0.21562	1	0.09805	0.3487	0.34891	-0.33546
{'fl_cov_educ_ss'}	4.4029	0.38657	0.18536	4.3837	4.9328	0.0077811
{'fl_cor_educ_ss'}	0.186	0.09805	1	0.062988	0.067799	0.043715
{'fl_cov_a_ss'}	6789.1	516.18	4.3837	26131	27284	-21.879
{'fl_cor_a_ss'}	0.76387	0.3487	0.062988	1	0.99878	-0.32737
{'fl_cov_ap_ss'}	7342.2	539.94	4.9328	27284	28559	-23.534
{'fl_cor_ap_ss'}	0.7902	0.34891	0.067799	0.99878	1	-0.33684
{'fl_cov_MPC'}	-12.648	-1.27	0.0077811	-21.879	-23.534	0.17093
{'fl_cor_MPC'}	-0.55643	-0.33546	0.043715	-0.32737	-0.33684	1
{'fl_cov_Mass'}	-7.6259e-05	-1.1065e-05	-2.8216e-07	-0.00014947	-0.00016026	9.6192e-07
{'fl_cor_Mass'}	-0.36259	-0.31587	-0.17133	-0.24172	-0.24792	0.60824
{'fl_cov_c_ss'}	1746.8	59.484	2.819	3991.5	4289.9	-8.1176
{'fl_cor_c_ss'}	0.98869	0.20214	0.20376	0.76839	0.78995	-0.61101
{'fl_cov_y_head_inc'}	3023	108.56	4.4029	6789.1	7342.2	-12.648
{'fl_cor_y_head_inc'}	1	0.21562	0.186	0.76387	0.7902	-0.55643
{'fl_cov_y_spouse'}	0	0	0	0	0	0
{'fl_cor_y_spouse'}	NaN	NaN	NaN	NaN	NaN	NaN
{'fl_cov_yshr_nttxss'}	1.4898	0.073937	0.0027409	2.72	2.9404	-0.010932
{'fl_cor_yshr_nttxss'}	0.8086	0.24094	0.18997	0.50211	0.51922	-0.78903
{'fracByP0_01'}	4.972e-06	0.0063542	0	0	0	1.0229e-05
{'fracByP10'}	0.02237	0.067607	0	0	0	0.011805
{'fracByP25'}	0.079911	0.1793	0	0	0	0.031252
{'fracByP50'}	0.23057	0.42619	0	0.0018299	0.0020426	0.069913
{'fracByP75'}	0.47337	0.67985	0	0.091755	0.083969	0.38585
{'fracByP90'}	0.70508	0.85252	1	0.32859	0.33227	0.75145
{'fracByP99_99'}	0.99867	1	1	0.99463	0.99454	0.99977

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Marital =0 and kids =3
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xxx tb_outcomes: all stats xxx

OriginalVariableNames	y_all	age_ss	educ_ss	a_ss	ap_ss	MPC
{'mean'}	63.898	34.068	0.22983	48.134	51.951	0.48
{'unweighted_sum'}	1.7831e+08	1909	1	1.2935e+05	1.5774e+09	59167
{'sd'}	54.001	7.9772	0.42073	134.32	141.06	0.43321
{'coefofvar'}	0.84511	0.23415	1.8306	2.7906	2.7152	0.90252
{'gini'}	0.39521	0.12909	0.72073	0.86678	0.86943	0.47895
{'min'}	2.2124	19	0	0	0	4.7561e-08
{'max'}	1414.1	64	1	7837.6	8183.8	1
{'pYis0'}	0	0	0.77017	0.45656	0.45134	0
{'pYls0'}	0	0	0	0	0	0
{'pYgr0'}	1	1	0.22983	0.54344	0.54866	1
{'pYisMINY'}	6.8879e-07	0.0083137	0.77017	0.45656	0.45134	0
{'pYisMAXY'}	1.1096e-11	0.00013776	0.22983	2.4752e-08	1.1431e-12	4.2401e-06
{'p0_01'}	3.6125	19	0	0	0	0.042355
{'p10'}	19.479	24	0	0	0	0.051982

{'p25' }	29.928	28	0	0	0	0.057211
{'p50' }	48.607	33	0	0.23918	0.4981	0.25206
{'p75' }	79.715	39	0	29.898	37.199	0.998
{'p90' }	125.03	45	1	146.89	152.53	0.99994
{'p99_99' }	727.36	64	1	2546.8	2631	1
{'fl_cov_y_all' }	2916.1	86.208	4.4997	5525	6009.3	-14.294
{'fl_cor_y_all' }	1	0.20012	0.19805	0.76171	0.78891	-0.611
{'fl_cov_age_ss' }	86.208	63.635	0.47515	327.14	343.36	-1.1063
{'fl_cor_age_ss' }	0.20012	1	0.14157	0.30531	0.30515	-0.32013
{'fl_cov_educ_ss' }	4.4997	0.47515	0.17701	3.7005	4.2241	-0.0020988
{'fl_cor_educ_ss' }	0.19805	0.14157	1	0.065482	0.071177	-0.011516
{'fl_cov_a_ss' }	5525	327.14	3.7005	18042	18921	-20.435
{'fl_cor_a_ss' }	0.76171	0.30531	0.065482	1	0.99863	-0.35119
{'fl_cov_ap_ss' }	6009.3	343.36	4.2241	18921	19897	-22.077
{'fl_cor_ap_ss' }	0.78891	0.30515	0.071177	0.99863	1	-0.36128
{'fl_cov_MPC' }	-14.294	-1.1063	-0.0020988	-20.435	-22.077	0.18767
{'fl_cor_MPC' }	-0.611	-0.32013	-0.011516	-0.35119	-0.36128	1
{'fl_cov_Mass' }	-4.6648e-05	-5.1607e-06	-2.1548e-07	-7.4065e-05	-7.9832e-05	6.1913e-07
{'fl_cor_Mass' }	-0.3662	-0.27425	-0.21712	-0.23375	-0.23992	0.60586
{'fl_cov_c_ss' }	1734.9	49.892	2.92	3306.4	3575.9	-9.3819
{'fl_cor_c_ss' }	0.99009	0.19275	0.21389	0.75862	0.78127	-0.66743
{'fl_cov_y_head_inc' }	2916.1	86.208	4.4997	5525	6009.3	-14.294
{'fl_cor_y_head_inc' }	1	0.20012	0.19805	0.76171	0.78891	-0.611
{'fl_cov_y_spouse' }	0	0	0	0	0	0
{'fl_cor_y_spouse' }	NaN	NaN	NaN	NaN	NaN	NaN
{'fl_cov_yshr_nttxss'}	1.4552	0.059225	0.0028436	2.1663	2.3537	-0.011615
{'fl_cor_yshr_nttxss'}	0.81051	0.2233	0.20329	0.4851	0.50187	-0.80643
{'fracByP0_01' }	5.1241e-06	0.0046366	0	0	0	9.1768e-06
{'fracByP10' }	0.022798	0.072031	0	0	0	0.010291
{'fracByP25' }	0.081073	0.1985	0	0	0	0.027336
{'fracByP50' }	0.23275	0.41302	0	0.00019689	0.00018652	0.072554
{'fracByP75' }	0.47593	0.67505	0	0.056161	0.056849	0.47949
{'fracByP90' }	0.70691	0.86752	1	0.31708	0.29108	0.79234
{'fracByP99_99' }	0.99868	1	1	0.99425	0.99383	0.99985

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Marital =0 and kids =4
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxx tb_outcomes: all stats xxx

OriginalVariableNames	y_all	age_ss	educ_ss	a_ss	ap_ss	MPC
{'mean' }	63.864	34.197	0.2079	41.099	44.671	0.5155
{'unweighted_sum' }	1.7831e+08	1909	1	1.2935e+05	1.5749e+09	60811
{'sd' }	53.609	7.1538	0.4058	120.68	127.29	0.43732
{'coefofvar' }	0.83942	0.2092	1.9519	2.9363	2.8494	0.84834
{'gini' }	0.39289	0.11447	0.75112	0.88249	0.88373	0.45039
{'min' }	2.2124	19	0	0	0	2.8502e-07
{'max' }	1414.1	64	1	7837.6	8164.9	1
{'pYis0' }	0	0	0.7921	0.50485	0.49255	0
{'pYls0' }	0	0	0	0	0	0
{'pYgr0' }	1	1	0.2079	0.49515	0.50745	1
{'pYisMINY' }	4.3493e-07	0.0045732	0.7921	0.50485	0.49255	0
{'pYisMAXY' }	1.4837e-12	4.6124e-05	0.2079	5.166e-09	1.5175e-11	7.8061e-07
{'p0_01' }	3.6887	19	0	0	0	0.043315
{'p10' }	19.685	25	0	0	0	0.053362
{'p25' }	30.153	29	0	0	0	0.059271
{'p50' }	48.75	34	0	0	0.029898	0.4735
{'p75' }	79.548	39	0	21.796	27.795	0.99978
{'p90' }	124.62	44	1	122.46	130.01	1
{'p99_99' }	721.01	63	1	2377.1	2423.1	1
{'fl_cov_y_all' }	2873.9	71.941	4.4963	4930.8	5391	-14.976
{'fl_cor_y_all' }	1	0.18759	0.20668	0.76216	0.79005	-0.63881
{'fl_cov_age_ss' }	71.941	51.176	0.5437	238.82	251.85	-1.0328
{'fl_cor_age_ss' }	0.18759	1	0.18729	0.27663	0.27658	-0.33014

{'fl_cov_educ_ss' }	4.4963	0.5437	0.16468	3.6463	4.1759	-0.010238
{'fl_cor_educ_ss' }	0.20668	0.18729	1	0.074456	0.080846	-0.057692
{'fl_cov_a_ss' }	4930.8	238.82	3.6463	14564	15338	-18.883
{'fl_cor_a_ss' }	0.76216	0.27663	0.074456	1	0.99852	-0.35781
{'fl_cov_ap_ss' }	5391	251.85	4.1759	15338	16202	-20.539
{'fl_cor_ap_ss' }	0.79005	0.27658	0.080846	0.99852	1	-0.36898
{'fl_cov_MPC' }	-14.976	-1.0328	-0.010238	-18.883	-20.539	0.19125
{'fl_cor_MPC' }	-0.63881	-0.33014	-0.057692	-0.35781	-0.36898	1
{'fl_cov_Mass' }	-2.7333e-05	-2.6204e-06	-1.3997e-07	-3.8707e-05	-4.2009e-05	3.5805e-07
{'fl_cor_Mass' }	-0.36608	-0.263	-0.24765	-0.2303	-0.23697	0.58787
{'fl_cov_c_ss' }	1727	42.146	2.9107	2959.6	3218.9	-9.8829
{'fl_cor_c_ss' }	0.9908	0.1812	0.22061	0.75427	0.77778	-0.69505
{'fl_cov_y_head_inc' }	2873.9	71.941	4.4963	4930.8	5391	-14.976
{'fl_cor_y_head_inc' }	1	0.18759	0.20668	0.76216	0.79005	-0.63881
{'fl_cov_y_spouse' }	0	0	0	0	0	0
{'fl_cor_y_spouse' }	NaN	NaN	NaN	NaN	NaN	NaN
{'fl_cov_yshr_nttxss'}	1.437	0.049376	0.0028207	1.8938	2.0694	-0.011786
{'fl_cor_yshr_nttxss'}	0.81163	0.20899	0.21047	0.47516	0.49228	-0.81604
{'fracByP0_01' }	5.1325e-06	0.0025409	0	0	0	8.3511e-06
{'fracByP10' }	0.022996	0.072385	0	0	0	0.0098261
{'fracByP25' }	0.081963	0.20856	0	0	0	0.026177
{'fracByP50' }	0.23436	0.45949	0	0	4.2228e-06	0.087798
{'fracByP75' }	0.47776	0.70775	0	0.041779	0.043053	0.51583
{'fracByP90' }	0.70826	0.87861	1	0.2851	0.2661	0.80736
{'fracByP99_99' }	0.99869	0.99991	1	0.99427	0.99339	0.99998

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Marital =1
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xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Marital =1 and kids =0
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxx tb_outcomes: all stats xxx

OriginalVariableNames	y_all	age_ss	educ_ss	a_ss	ap_ss	MPC
{'mean' }	109.57	44.041	0.38021	408.45	434.2	0.12185
{'unweighted_sum' }	1.2919e+09	1909	1	1.2935e+05	8.4753e+09	2.1767e+05
{'sd' }	83.584	15.135	0.48544	498.74	514.1	0.15675
{'coefofvar' }	0.76282	0.34365	1.2768	1.2211	1.184	1.2864
{'gini' }	0.3692	0.18905	0.50257	0.57853	0.57485	0.51157
{'min' }	2.4223	19	0	0	0	-8.0925e-09
{'max' }	2113.2	64	1	7837.6	9503.9	0.94127
{'pYis0' }	0	0	0.61979	0.07588	0.036618	0
{'pYls0' }	0	0	0	0	0	1.9519e-06
{'pYgr0' }	1	1	0.38021	0.92412	0.96338	1
{'pYisMINY' }	5.1901e-09	0.043093	0.61979	0.07588	0.036618	3.0411e-12
{'pYisMAXY' }	2.4329e-11	0.038439	0.38021	1.8938e-05	1.2944e-11	5.9811e-09
{'p0_01' }	6.597	19	0	0	0	0.032266
{'p10' }	35.716	21	0	1.9135	3.7372	0.042396
{'p25' }	54.783	29	0	51.664	59.412	0.047165
{'p50' }	88.064	48	0	239.18	270.71	0.054067
{'p75' }	137.9	58	1	588.48	634.2	0.090852
{'p90' }	204.71	62	1	1074.4	1074.4	0.37409
{'p99_99' }	967.74	64	1	5833.4	5977.2	0.84217

{'fl_cov_y_all'}	6986.3	361.95	5.7657	27155	31359	-4.5371
{'fl_cor_y_all'}	1	0.28612	0.1421	0.65142	0.72978	-0.3463
{'fl_cov_age_ss'}	361.95	229.06	-0.85351	4123.7	4247.6	-1.4233
{'fl_cor_age_ss'}	0.28612	1	-0.11617	0.5463	0.54592	-0.59994
{'fl_cov_educ_ss'}	5.7657	-0.85351	0.23565	16.048	17.247	0.0094147
{'fl_cor_educ_ss'}	0.1421	-0.11617	1	0.066283	0.069108	0.12373
{'fl_cov_a_ss'}	27155	4123.7	16.048	2.4874e+05	2.541e+05	-28.557
{'fl_cor_a_ss'}	0.65142	0.5463	0.066283	1	0.99103	-0.36528
{'fl_cov_ap_ss'}	31359	4247.6	17.247	2.541e+05	2.643e+05	-30.413
{'fl_cor_ap_ss'}	0.72978	0.54592	0.069108	0.99103	1	-0.37741
{'fl_cov_MPC'}	-4.5371	-1.4233	0.0094147	-28.557	-30.413	0.02457
{'fl_cor_MPC'}	-0.3463	-0.59994	0.12373	-0.36528	-0.37741	1
{'fl_cov_Mass'}	-7.4044e-05	-2.2911e-05	5.5246e-08	-0.00041977	-0.00044771	4.0429e-07
{'fl_cor_Mass'}	-0.19462	-0.33257	0.025002	-0.18491	-0.19132	0.56664
{'fl_cov_c_ss'}	2941.3	188.87	4.2928	16348	17228	-2.782
{'fl_cor_c_ss'}	0.86319	0.30611	0.21692	0.80402	0.82201	-0.43535
{'fl_cov_y_head_inc'}	4857.1	318.48	4.4672	25709	27033	-3.2029
{'fl_cor_y_head_inc'}	0.85851	0.31089	0.13595	0.76156	0.77684	-0.30187
{'fl_cov_y_spouse'}	4673.1	95.4	2.8501	3173.5	9494.5	-2.9283
{'fl_cor_y_spouse'}	0.59164	0.066703	0.06213	0.067335	0.19543	-0.19769
{'fl_cov_yshr_nttxss'}	1.6494	0.13956	0.0013995	6.3032	7.2859	-0.0021924
{'fl_cor_yshr_nttxss'}	0.7665	0.35816	0.11198	0.49089	0.55047	-0.54328
{'fracByP0_01'}	5.3214e-06	0.018591	0	0	0	1.5443e-05
{'fracByP10'}	0.024266	0.049706	0	0.00015705	0.00034862	0.032674
{'fracByP25'}	0.086535	0.1342	0	0.010018	0.010404	0.087951
{'fracByP50'}	0.24796	0.35975	0	0.097271	0.098709	0.19176

Distributional Statistics By Marital Status, Kids Count and Income Bins

Various statistics, including MPC (of the first check) by Marital Status and Kids COunt and income bins

```
it_row_ctr = 0;
for it_marry_ctr=1:mp_params('n_marriedgrid')

    display(['']);
    display(['']);
    display(['--------------------------------']);
    display(['--------------------------------']);
    display(['--------------------------------']);
    display(['--------------------------------']);
    display(['xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx']);
    display(['Marital =' num2str(ar_marital(it_marry_ctr))]);
    display(['xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx']);
    display(['--------------------------------']);
    display(['--------------------------------']);

    for it_kids_ctr=1:mp_params('n_kidsgrid')
        display(['xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx']);
        display(['Marital =' num2str(ar_marital(it_marry_ctr)) ' and kids =' num2str(ar_kids(it
        display(['xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx']);

        % construct input data
        y_all_grp = y_all(min_age:max_age, :, :, : ,it_marry_ctr ,it_ctr);
        age_ss_grp = age_ss(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);
        educ_ss_grp = educ_ss(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);
        a_ss_grp = a_ss(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);
        ap_ss_grp = ap_ss(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);
        mn_MPC_C_gain_share_check_grp = mn_MPC_C_gain_share_check(min_age:max_age, :, :, :, it_
```

```
Phi_true_grp = Phi_true_1(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);
c_ss_grp = c_ss(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);
y_head_inc_grp = y_head_inc(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);
y_spouse_inc_grp = y_spouse_inc(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);
yshr_nttxss_grp = yshr_nttxss(min_age:max_age, :, :, : ,it_marry_ctr, it_kids_ctr);

% Income Bins
ar_y_all = y_all_grp(:);
ar_age_ss = age_ss_grp(:);
ar_educ_ss = educ_ss_grp(:);
ar_a_ss = a_ss_grp(:);
ar_ap_ss = ap_ss_grp(:);
ar_mn_MPC_C_gain_share_check = mn_MPC_C_gain_share_check_grp(:);
ar_Phi_true = Phi_true_grp(:);
ar_c_ss = c_ss_grp(:);
ar_y_head_inc = y_head_inc_grp(:);
ar_y_spouse_inc = y_spouse_inc_grp(:);
ar_yshr_nttxss = yshr_nttxss_grp(:);

% income bins loop
for it_y_all_ctr=1:6

    % Current y group index
    % y is in thousands of dollars
    y_all_start = (it_y_all_ctr-1)*20;
    if (it_y_all_ctr == 6)
        y_all_end = max(ar_y_all);
    else
        y_all_end = it_y_all_ctr*20;
    end

    display(['xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx']);
    display(['Marital =' num2str(ar_marital(it_marry_ctr)) ', kids =' num2str(ar_kids(i
    display(['xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx']);

    ar_y_idx = (ar_y_all >= y_all_start & ar_y_all <y_all_end);

    ar_mky_y_all = ar_y_all(ar_y_idx);
    ar_mky_age_ss = ar_age_ss(ar_y_idx);
    ar_mky_educ_ss = ar_educ_ss(ar_y_idx);
    ar_mky_a_ss = ar_a_ss(ar_y_idx);
    ar_mky_ap_ss = ar_ap_ss(ar_y_idx);
    ar_mky_mn_MPC_C_gain_share_check = ar_mn_MPC_C_gain_share_check(ar_y_idx);
    ar_mky_Phi_true = ar_Phi_true(ar_y_idx);
    ar_mky_c_ss = ar_c_ss(ar_y_idx);
    ar_mky_y_head_inc = ar_y_head_inc(ar_y_idx);
    ar_mky_y_spouse_inc = ar_y_spouse_inc(ar_y_idx);
    ar_mky_yshr_nttxss = ar_yshr_nttxss(ar_y_idx);

    mp_cl_ar_xyz_of_s = containers.Map('KeyType','char', 'ValueType','any');
    mp_cl_ar_xyz_of_s('y_all') = {ar_mky_y_all(:), zeros(1)};
    mp_cl_ar_xyz_of_s('age_ss') = {ar_mky_age_ss(:), zeros(1)};
    mp_cl_ar_xyz_of_s('educ_ss') = {ar_mky_educ_ss(:), zeros(1)};
    mp_cl_ar_xyz_of_s('a_ss') = {ar_mky_a_ss(:), zeros(1)};
```

```
mp_cl_ar_xyz_of_s('ap_ss') = {ar_mky_ap_ss(:), zeros(1)};
mp_cl_ar_xyz_of_s('MPC') = {ar_mky_mn_MPC_C_gain_share_check(:), zeros(1)};
mp_cl_ar_xyz_of_s('Mass') = {ar_mky_Phi_true(:), zeros(1)};
mp_cl_ar_xyz_of_s('c_ss') = {ar_mky_c_ss(:), zeros(1)};
mp_cl_ar_xyz_of_s('y_head_inc') = {ar_mky_y_head_inc(:), zeros(1)};
mp_cl_ar_xyz_of_s('y_spouse') = {ar_mky_y_spouse_inc(:), zeros(1)};
mp_cl_ar_xyz_of_s('yshr_nttxss') = {ar_mky_yshr_nttxss(:), zeros(1)};
mp_cl_ar_xyz_of_s('ar_st_y_name') = ["y_all", "age_ss", "educ_ss", "a_ss", "ap_ss",

% controls
mp_support = containers.Map('KeyType','char', 'ValueType','any');
mp_support('ar_fl_percentiles') = [0.01 10 25 50 75 90 99.99];
mp_support('bl_display_final') = true;
mp_support('bl_display_detail') = false;
mp_support('bl_display_drvm2outcomes') = false;
mp_support('bl_display_drvstats') = false;
mp_support('bl_display_drvm2covcor') = false;

% Call Function
mp_cl_mt_xyz_of_s = ff_simu_stats(ar_mky_Phi_true(:)/sum(ar_mky_Phi_true,'all'), mp

it_marital = ar_marital(it_marry_ctr);
it_kids = ar_kids(it_kids_ctr);
fl_y_all_start = y_all_start;
fl_y_all_end = y_all_end;

tb_dist_stats = mp_cl_mt_xyz_of_s('tb_outcomes');
fl_age_mean = tb_dist_stats{"age_ss", "mean"};
fl_age_p50 = tb_dist_stats{"age_ss", "p50"};

fl_educ_mean = tb_dist_stats{"educ_ss", "mean"};

fl_a_mean = tb_dist_stats{"a_ss", "mean"};
fl_a_p50 = tb_dist_stats{"a_ss", "p50"};

fl_ap_mean = tb_dist_stats{"ap_ss", "mean"};
fl_ap_p50 = tb_dist_stats{"ap_ss", "p50"};

fl_y_all_mean = tb_dist_stats{"y_all", "mean"};
fl_y_all_p50 = tb_dist_stats{"y_all", "p50"};

fl_mpc_mean = tb_dist_stats{"MPC", "mean"};
fl_mpc_p50 = tb_dist_stats{"MPC", "p50"};

fl_mass = tb_dist_stats{"Mass", "unweighted_sum"};

fl_c_ss_mean = tb_dist_stats{"c_ss", "mean"};
fl_c_ss_p50 = tb_dist_stats{"c_ss", "p50"};

fl_y_head_inc_mean = tb_dist_stats{"y_head_inc", "mean"};
fl_y_spouse_mean = tb_dist_stats{"y_spouse", "mean"};

ar_store_stats = [it_marital, it_kids, fl_y_all_start, fl_y_all_end, ...
    fl_age_mean, fl_age_p50, fl_educ_mean, ...
```

```
                fl_a_mean, fl_a_p50, fl_ap_mean, fl_ap_p50, ...
                fl_y_all_mean, fl_y_all_p50, ...
                fl_mpc_mean, fl_mpc_p50, ...
                fl_mass, ...
                fl_c_ss_mean, fl_c_ss_p50, ...
                fl_y_head_inc_mean, fl_y_spouse_mean];

            it_row_ctr = it_row_ctr + 1;

            if (it_row_ctr>1)
                mt_store_stats_by_mky = [mt_store_stats_by_mky;ar_store_stats];
            else
                mt_store_stats_by_mky = [ar_store_stats];
            end

        end
    end
end
```

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xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Marital =0
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
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xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Marital =0 and kids =0
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Marital =0, kids =0, ybin =0 to 20
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxx tb_outcomes: all stats xxx
```

OriginalVariableNames	y_all	age_ss	educ_ss	a_ss	ap_ss	MPC
{'mean' }	14.688	34.974	0.18182	2.7226	2.6703	0.56785
{'unweighted_sum' }	8.4083e+05	1909	1	2690.8	5.2986e+06	13257
{'sd' }	3.6764	14.501	0.3857	10.125	9.7397	0.34943
{'coefofvar' }	0.25031	0.41462	2.1213	3.7189	3.6474	0.61536
{'gini' }	0.141	0.23128	0.78641	0.92249	0.92536	0.34425
{'min' }	2.2124	19	0	0	0	0.033951
{'max' }	20	64	1	413.31	409.12	1
{'pYis0' }	0	0	0.81818	0.53967	0.49704	0
{'pYls0' }	0	0	0	0	0	0
{'pYgr0' }	1	1	0.18182	0.46033	0.50296	1
{'pYisMINY' }	1.9988e-05	0.084859	0.81818	0.53967	0.49704	0
{'pYisMAXY' }	4.7568e-12	0.01496	0.18182	1.4916e-11	0	0.00025972
{'p0_01' }	2.6052	19	0	0	0	0.048
{'p10' }	9.307	20	0	0	0	0.084412
{'p25' }	12.172	22	0	0	0	0.17981
{'p50' }	15.236	30	0	0	0.011132	0.66566
{'p75' }	17.778	48	0	0.23918	0.48535	0.90461
{'p90' }	19.14	58	1	6.458	6.0051	0.96941
{'p99_99' }	19.999	64	1	174.36	166.76	1

{'fl_cov_y_all' }	13.516	5.6455	0.0023525	6.9774	7.1104	-0.53539
{'fl_cor_y_all' }	1	0.1059	0.001659	0.18744	0.19857	-0.41675
{'fl_cov_age_ss' }	5.6455	210.28	-1.0046	57.763	56.482	-2.7127
{'fl_cor_age_ss' }	0.1059	1	-0.17962	0.39342	0.39991	-0.53535
{'fl_cov_educ_ss' }	0.0023525	-1.0046	0.14876	-0.29328	-0.29618	0.035745
{'fl_cor_educ_ss' }	0.001659	-0.17962	1	-0.0751	-0.078843	0.26522
{'fl_cov_a_ss' }	6.9774	57.763	-0.29328	102.52	98.523	-1.3183
{'fl_cor_a_ss' }	0.18744	0.39342	-0.0751	1	0.99907	-0.37261
{'fl_cov_ap_ss' }	7.1104	56.482	-0.29618	98.523	94.862	-1.3069
{'fl_cor_ap_ss' }	0.19857	0.39991	-0.078843	0.99907	1	-0.38399
{'fl_cov_MPC' }	-0.53539	-2.7127	0.035745	-1.3183	-1.3069	0.1221
{'fl_cor_MPC' }	-0.41675	-0.53535	0.26522	-0.37261	-0.38399	1
{'fl_cov_Mass' }	6.2968e-06	-7.1893e-05	-3.4162e-07	-1.6308e-05	-1.5421e-05	1.1836e-07
{'fl_cor_Mass' }	0.18379	-0.53201	-0.095046	-0.17284	-0.1699	0.036348
{'fl_cov_c_ss' }	11.292	6.0576	0.0049126	9.8651	9.6441	-0.46327
{'fl_cor_c_ss' }	0.98267	0.13365	0.0040749	0.31172	0.31679	-0.42415
{'fl_cov_y_head_inc' }	13.516	5.6455	0.0023525	6.9774	7.1104	-0.53539
{'fl_cor_y_head_inc' }	1	0.1059	0.001659	0.18744	0.19857	-0.41675
{'fl_cov_y_spouse' }	0	0	0	0	0	0
{'fl_cor_y_spouse' }	NaN	NaN	NaN	NaN	NaN	NaN
{'fl_cov_yshr_nttxss'}	0.052502	0.022189	1.0001e-05	0.025753	0.026154	-0.0020386
{'fl_cor_yshr_nttxss'}	0.99014	0.10609	0.0017978	0.17635	0.18618	-0.4045
{'fracByP0_01' }	1.8388e-05	0.0461	0	0	0	8.2849e-06
{'fracByP10' }	0.051228	0.088792	0	0	0	0.012201
{'fracByP25' }	0.16212	0.16288	0	0	0	0.044981
{'fracByP50' }	0.39701	0.3352	0	0	6.3754e-06	0.21811
{'fracByP75' }	0.68371	0.60992	0	0.013023	0.018274	0.58397
{'fracByP90' }	0.86704	0.84015	1	0.16055	0.12661	0.82506
{'fracByP99_99' }	1	1	1	0.99661	0.99334	1

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Marital =0, kids =0, ybin =20 to 40
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xxx tb_outcomes: all stats xxx

OriginalVariableNames	y_all	age_ss	educ_ss	a_ss	ap_ss	MPC
{'mean' }	29.952	38.525	0.20638	25.273	26.927	0.17518
{'unweighted_sum' }	1.9087e+06	1909	1	7355.4	1.8539e+07	4111.7
{'sd' }	5.6854	14.456	0.4047	44.204	44.499	0.25807
{'coefofvar' }	0.18982	0.37522	1.961	1.7491	1.6525	1.4732
{'gini' }	0.10955	0.2128	0.7532	0.72521	0.71433	0.57108
{'min' }	20	19	0	0	0	0.032157
{'max' }	40	64	1	890.69	885.93	1
{'pYis0' }	0	0	0.79362	0.16854	0.10132	0
{'pYls0' }	0	0	0	0	0	0
{'pYgr0' }	1	1	0.20638	0.83146	0.89868	1
{'pYisMINY' }	8.0995e-288	0.055295	0.79362	0.16854	0.10132	0
{'pYisMAXY' }	4.4783e-07	0.018337	0.20638	8.9396e-13	0	0.00033045
{'p0_01' }	20.004	19	0	0	0	0.038809
{'p10' }	22.011	20	0	0	0	0.049364
{'p25' }	25.065	25	0	0.80724	1.0692	0.053905
{'p50' }	30.008	37	0	6.458	6.7423	0.065191
{'p75' }	34.798	52	0	29.898	33.25	0.12717
{'p90' }	37.826	59	1	82.04	83.859	0.5677
{'p99_99' }	39.999	64	1	413.31	407.97	1
{'fl_cov_y_all' }	32.324	7.6438	0.038871	72.305	78.269	-0.30518
{'fl_cor_y_all' }	1	0.093006	0.016894	0.28771	0.30937	-0.208
{'fl_cov_age_ss' }	7.6438	208.96	-0.73238	386.27	403.49	-1.6691
{'fl_cor_age_ss' }	0.093006	1	-0.12519	0.60451	0.62727	-0.4474
{'fl_cov_educ_ss' }	0.038871	-0.73238	0.16379	-2.1597	-2.3263	0.062231
{'fl_cor_educ_ss' }	0.016894	-0.12519	1	-0.12073	-0.12918	0.59583
{'fl_cov_a_ss' }	72.305	386.27	-2.1597	1954	1964.7	-3.0143
{'fl_cor_a_ss' }	0.28771	0.60451	-0.12073	1	0.99885	-0.26423
{'fl_cov_ap_ss' }	78.269	403.49	-2.3263	1964.7	1980.1	-3.2123

{'fl_cor_ap_ss' }	0.30937	0.62727	-0.12918	0.99885	1	-0.27972
{'fl_cov_MPC' }	-0.30518	-1.6691	0.062231	-3.0143	-3.2123	0.066603
{'fl_cor_MPC' }	-0.208	-0.4474	0.59583	-0.26423	-0.27972	1
{'fl_cov_Mass' }	-4.5536e-06	-9.611e-05	3.7003e-08	-0.00013723	-0.00014127	6.1725e-07
{'fl_cor_Mass' }	-0.059962	-0.49775	0.0068451	-0.23242	-0.23768	0.17906
{'fl_cov_c_ss' }	19.905	-11.1	0.19764	47.044	47.213	-0.046711
{'fl_cor_c_ss' }	0.88176	-0.19338	0.12299	0.26804	0.26721	-0.045585
{'fl_cov_y_head_inc' }	32.324	7.6438	0.038871	72.305	78.269	-0.30518
{'fl_cor_y_head_inc' }	1	0.093006	0.016894	0.28771	0.30937	-0.208
{'fl_cov_y_spouse' }	0	0	0	0	0	0
{'fl_cor_y_spouse' }	NaN	NaN	NaN	NaN	NaN	NaN
{'fl_cov_yshr_nttxss'}	0.058292	0.013838	6.9651e-05	0.12878	0.13941	-0.00057164
{'fl_cor_yshr_nttxss'}	0.99551	0.092947	0.016711	0.28287	0.30419	-0.21507
{'fracByP0_01' }	0.00010275	0.02727	0	0	0	2.2051e-05
{'fracByP10' }	0.070196	0.052525	0	0	0	0.026727
{'fracByP25' }	0.18834	0.15502	0	0.0035395	0.0030822	0.070934
{'fracByP50' }	0.4181	0.33724	0	0.038073	0.032523	0.15484
{'fracByP75' }	0.68834	0.64594	0	0.19439	0.19244	0.2768
{'fracByP90' }	0.87021	0.84782	1	0.53295	0.49305	0.48886
{'fracByP99_99' }	0.99996	1	1	0.99833	0.99827	1

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Marital =0, kids =0, ybin =40 to 60
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xxx tb_outcomes: all stats xxx

OriginalVariableNames	y_all	age_ss	educ_ss	a_ss	ap_ss	MPC
{'mean' }	49.366	41.657	0.23457	81.386	87.448	0.089225
{'unweighted_sum' }	2.5368e+06	1909	1	13261	2.8595e+07	2580.8
{'sd' }	5.7595	14.091	0.42373	93.65	93.99	0.16201
{'coefofvar' }	0.11667	0.33826	1.8064	1.1507	1.0748	1.8158
{'gini' }	0.067274	0.1907	0.71409	0.55942	0.54841	0.44765
{'min' }	40	19	0	0	0	0.031691
{'max' }	60	64	1	1394.9	1389.5	0.99999
{'pYis0' }	0	0	0.76543	0.074319	0.034709	0
{'pYls0' }	0	0	0	0	0	0
{'pYgr0' }	1	1	0.23457	0.92568	0.96529	1
{'pYisMINY' }	1.1988e-05	0.035852	0.76543	0.074319	0.034709	0
{'pYisMAXY' }	2.6918e-19	0.022889	0.23457	1.725e-14	0	0.00031473
{'p0_01' }	40.004	19	0	0	0	0.036579
{'p10' }	41.738	22	0	1.9135	4.1783	0.043656
{'p25' }	44.289	28	0	10.255	15.829	0.045968
{'p50' }	49.163	43	0	51.664	56.522	0.049672
{'p75' }	54.155	54	0	122.46	130.25	0.056328
{'p90' }	57.677	60	1	205.07	213.83	0.066175
{'p99_99' }	59.997	64	1	729.18	718.69	0.99999
{'fl_cov_y_all' }	33.172	5.7383	0.031749	121.07	129.84	-0.09046
{'fl_cor_y_all' }	1	0.070707	0.013009	0.22446	0.23985	-0.096943
{'fl_cov_age_ss' }	5.7383	198.55	-0.52991	911.38	944.69	-0.71366
{'fl_cor_age_ss' }	0.070707	1	-0.088752	0.69065	0.71331	-0.31261
{'fl_cov_educ_ss' }	0.031749	-0.52991	0.17955	-5.8166	-6.252	0.029802
{'fl_cor_educ_ss' }	0.013009	-0.088752	1	-0.14658	-0.15698	0.43412
{'fl_cov_a_ss' }	121.07	911.38	-5.8166	8770.3	8794.3	-2.9986
{'fl_cor_a_ss' }	0.22446	0.69065	-0.14658	1	0.99911	-0.19763
{'fl_cov_ap_ss' }	129.84	944.69	-6.252	8794.3	8834	-3.2391
{'fl_cor_ap_ss' }	0.23985	0.71331	-0.15698	0.99911	1	-0.21271
{'fl_cov_MPC' }	-0.09046	-0.71366	0.029802	-2.9986	-3.2391	0.026249
{'fl_cor_MPC' }	-0.096943	-0.31261	0.43412	-0.19763	-0.21271	1
{'fl_cov_Mass' }	-4.8663e-06	-5.8353e-05	-1.5517e-07	-0.00023117	-0.00023793	2.8905e-07
{'fl_cor_Mass' }	-0.088148	-0.43205	-0.038205	-0.25753	-0.2641	0.18613
{'fl_cov_c_ss' }	17.041	-28.838	0.46008	70.248	61.265	0.1701
{'fl_cor_c_ss' }	0.62733	-0.43394	0.23022	0.15905	0.13821	0.22261
{'fl_cov_y_head_inc' }	33.172	5.7383	0.031749	121.07	129.84	-0.09046
{'fl_cor_y_head_inc' }	1	0.070707	0.013009	0.22446	0.23985	-0.096943

{'fl_cov_y_spouse' }	0	0	0	0	0	0
{'fl_cor_y_spouse' }	NaN	NaN	NaN	NaN	NaN	NaN
{'fl_cov_yshr_nttxss'}	0.032789	0.0057148	3.1401e-05	0.11935	0.12801	-9.0262e-05
{'fl_cor_yshr_nttxss'}	0.99787	0.071088	0.012989	0.22339	0.23873	-0.097652
{'fracByP0_01' }	8.1986e-05	0.016353	0	0	0	6.9754e-05
{'fracByP10' }	0.082731	0.059676	0	0.00080736	0.0015529	0.046758
{'fracByP25' }	0.21327	0.13822	0	0.013027	0.018312	0.12219
{'fracByP50' }	0.44964	0.36454	0	0.12623	0.11331	0.25588
{'fracByP75' }	0.7111	0.65402	0	0.38755	0.36658	0.40319
{'fracByP90' }	0.88093	0.85769	1	0.66284	0.6549	0.50458
{'fracByP99_99' }	0.99988	1	1	0.99951	0.99913	1

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Marital =0, kids =0, ybin =60 to 80
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xxx tb_outcomes: all stats xxx

OriginalVariableNames	y_all	age_ss	educ_ss	a_ss	ap_ss	MPC
{'mean' }	69.288	43.863	0.26092	158.1	169.53	0.055771
{'unweighted_sum' }	3.0245e+06	1909	1	20103	3.6714e+07	2041.2
{'sd' }	5.7381	13.54	0.43913	144.91	144.63	0.053076
{'coefofvar' }	0.082816	0.30869	1.683	0.91655	0.85316	0.95167
{'gini' }	0.047737	0.17193	0.67675	0.46696	0.45774	0.20088
{'min' }	60	19	0	0	0	0.031467
{'max' }	79.999	64	1	1913.5	1907.3	0.90442
{'pYis0' }	0	0	0.73908	0.036459	0.0062838	0
{'pYls0' }	0	0	0	0	0	0
{'pYgr0' }	1	1	0.26092	0.96354	0.99372	1
{'pYisMINY' }	7.0785e-08	0.024362	0.73908	0.036459	0.0062838	0
{'pYisMAXY' }	1.0527e-08	0.027901	0.26092	8.7298e-17	0	6.3868e-06
{'p0_01' }	60.004	19	0	0	0	0.03566
{'p10' }	61.586	23	0	10.255	18.691	0.039942
{'p25' }	64.221	32	0	39.794	54.138	0.043098
{'p50' }	68.93	46	0	122.46	134.97	0.047033
{'p75' }	74.224	56	1	239.18	250.88	0.052935
{'p90' }	77.547	61	1	363.77	373.3	0.059583
{'p99_99' }	79.989	64	1	1074.4	1050.1	0.8324
{'fl_cov_y_all' }	32.926	4.1151	0.027108	145.03	154.46	-0.032152
{'fl_cor_y_all' }	1	0.052966	0.010758	0.17442	0.18612	-0.10557
{'fl_cov_age_ss' }	4.1151	183.33	-0.37329	1400.5	1438	-0.1128
{'fl_cor_age_ss' }	0.052966	1	-0.062782	0.71382	0.73429	-0.15696
{'fl_cov_educ_ss' }	0.027108	-0.37329	0.19284	-9.2359	-9.7931	0.0061122
{'fl_cor_educ_ss' }	0.010758	-0.062782	1	-0.14514	-0.15419	0.26224
{'fl_cov_a_ss' }	145.03	1400.5	-9.2359	20999	20944	-0.71422
{'fl_cor_a_ss' }	0.17442	0.71382	-0.14514	1	0.9993	-0.092863
{'fl_cov_ap_ss' }	154.46	1438	-9.7931	20944	20919	-0.79413
{'fl_cor_ap_ss' }	0.18612	0.73429	-0.15419	0.9993	1	-0.10345
{'fl_cov_MPC' }	-0.032152	-0.1128	0.0061122	-0.71422	-0.79413	0.002817
{'fl_cor_MPC' }	-0.10557	-0.15696	0.26224	-0.092863	-0.10345	1
{'fl_cov_Mass' }	-2.7754e-06	-2.3008e-05	-3.5426e-07	-0.00016592	-0.00016774	3.0754e-08
{'fl_cor_Mass' }	-0.091883	-0.32281	-0.15325	-0.21751	-0.22031	0.11007
{'fl_cov_c_ss' }	15.819	-34.276	0.57801	165.89	143.5	0.055227
{'fl_cor_c_ss' }	0.46921	-0.43083	0.22402	0.19483	0.16886	0.17709
{'fl_cov_y_head_inc' }	32.926	4.1151	0.027108	145.03	154.46	-0.032152
{'fl_cor_y_head_inc' }	1	0.052966	0.010758	0.17442	0.18612	-0.10557
{'fl_cov_y_spouse' }	0	0	0	0	0	0
{'fl_cor_y_spouse' }	NaN	NaN	NaN	NaN	NaN	NaN
{'fl_cov_yshr_nttxss'}	0.020855	0.0026153	1.697e-05	0.091765	0.09774	-2.0711e-05
{'fl_cor_yshr_nttxss'}	0.99874	0.053079	0.010619	0.17402	0.1857	-0.10723
{'fracByP0_01' }	0.00013554	0.010553	0	0	0	6.7618e-05
{'fracByP10' }	0.087755	0.048541	0	0.0025063	0.0045134	0.068841
{'fracByP25' }	0.2241	0.14456	0	0.028727	0.036738	0.18113
{'fracByP50' }	0.46426	0.38247	0	0.18419	0.17359	0.38294
{'fracByP75' }	0.72225	0.68941	1	0.48388	0.44892	0.60575

{'fracByP90' }	0.88703	0.88024	1	0.74634	0.71602	0.7558
{'fracByP99_99' }	0.99995	1	1	0.99979	0.99936	0.9998

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Marital =0, kids =0, ybin =80 to 100
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xxx tb_outcomes: all stats xxx

OriginalVariableNames	y_all	age_ss	educ_ss	a_ss	ap_ss	MPC
{'mean' }	89.313	45.289	0.28587	244.08	261.11	0.048107
{'unweighted_sum' }	3.4629e+06	1909	1	26756	4.4356e+07	1766.5
{'sd' }	5.7791	13.023	0.45183	194.1	192.85	0.009883
{'coefofvar' }	0.064706	0.28755	1.5805	0.79522	0.73856	0.20545
{'gini' }	0.037295	0.15841	0.6408	0.4125	0.40399	0.094078
{'min' }	80.001	19	0	0	0	0.031354
{'max' }	100	64	1	2377.1	2370.2	0.29632
{'pYis0' }	0	0	0.71413	0.020853	1.1851e-17	0
{'pYls0' }	0	0	0	0	0	0
{'pYgr0' }	1	1	0.28587	0.97915	1	1
{'pYisMINY' }	0	0.018972	0.71413	0.020853	1.1851e-17	0
{'pYisMAXY' }	3.7911e-06	0.02925	0.28587	1.1813e-15	0	2.6766e-08
{'p0_01' }	80.012	19	0	0	0.79044	0.035088
{'p10' }	81.54	25	0	29.898	43.522	0.038754
{'p25' }	84.27	35	0	100.91	114.23	0.042327
{'p50' }	88.922	48	0	205.07	224.41	0.046616
{'p75' }	94.198	56	1	363.77	378.89	0.052372
{'p90' }	97.585	61	1	525.49	536.58	0.057987
{'p99_99' }	100	64	1	1281.9	1273.4	0.16243
{'fl_cov_y_all' }	33.398	2.1956	0.039297	150.26	159.68	-0.0031027
{'fl_cor_y_all' }	1	0.029174	0.01505	0.13396	0.14327	-0.05432
{'fl_cov_age_ss' }	2.1956	169.59	-0.29823	1813.9	1849.7	0.051957
{'fl_cor_age_ss' }	0.029174	1	-0.050684	0.71759	0.73653	0.40366
{'fl_cov_educ_ss' }	0.039297	-0.29823	0.20415	-12.356	-12.922	0.0006815
{'fl_cor_educ_ss' }	0.01505	-0.050684	1	-0.14089	-0.1483	0.15261
{'fl_cov_a_ss' }	150.26	1813.9	-12.356	37675	37410	0.63872
{'fl_cor_a_ss' }	0.13396	0.71759	-0.14089	1	0.99942	0.33294
{'fl_cov_ap_ss' }	159.68	1849.7	-12.922	37410	37190	0.64022
{'fl_cor_ap_ss' }	0.14327	0.73653	-0.1483	0.99942	1	0.33588
{'fl_cov_MPC' }	-0.0031027	0.051957	0.0006815	0.63872	0.64022	9.7689e-05
{'fl_cor_MPC' }	-0.05432	0.40366	0.15261	0.33294	0.33588	1
{'fl_cov_Mass' }	-1.4164e-06	-8.0012e-06	-3.1745e-07	-9.5448e-05	-9.4333e-05	2.4949e-09
{'fl_cor_Mass' }	-0.083209	-0.20859	-0.23854	-0.16695	-0.16607	0.085701
{'fl_cov_c_ss' }	15.988	-34.182	0.59583	378.89	341.32	-0.0038564
{'fl_cor_c_ss' }	0.39229	-0.3722	0.187	0.27681	0.25098	-0.055329
{'fl_cov_y_head_inc' }	33.398	2.1956	0.039297	150.26	159.68	-0.0031027
{'fl_cor_y_head_inc' }	1	0.029174	0.01505	0.13396	0.14327	-0.05432
{'fl_cov_y_spouse' }	0	0	0	0	0	0
{'fl_cor_y_spouse' }	NaN	NaN	NaN	NaN	NaN	NaN
{'fl_cov_yshr_nttxss'}	0.014829	0.0010034	1.7131e-05	0.066952	0.071142	-1.4015e-06
{'fl_cor_yshr_nttxss'}	0.99914	0.030003	0.014763	0.13431	0.14365	-0.055214
{'fracByP0_01' }	0.00042007	0.0079591	0	0	5.0103e-07	0.00014006
{'fracByP10' }	0.090622	0.05099	0	0.0059303	0.0081038	0.07731
{'fracByP25' }	0.22976	0.15254	0	0.060679	0.052596	0.20406
{'fracByP50' }	0.47206	0.40219	0	0.22278	0.2121	0.43521
{'fracByP75' }	0.72831	0.67181	1	0.53644	0.49268	0.69113
{'fracByP90' }	0.88939	0.87436	1	0.78432	0.74554	0.86193
{'fracByP99_99' }	1	1	1	0.99942	0.99946	0.99982

xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
Marital =0, kids =0, ybin =100 to 1414.0634
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
xxx tb_outcomes: all stats xxx

OriginalVariableNames	y_all	age_ss	educ_ss	a_ss	ap_ss	MPC

{'mean' }	164.25	47.879	0.35462	603.16	641.93	0.047297
{'unweighted_sum' }	1.6654e+08	1909	1	1.2935e+05	1.4733e+09	21152
{'sd' }	74.664	11.785	0.4784	524.59	535.23	0.006722
{'coefofvar' }	0.45456	0.24615	1.349	0.86973	0.83377	0.14212
{'gini' }	0.20972	0.13265	0.54013	0.41585	0.40991	0.081083
{'min' }	100	19	0	0	2.6604	-1.6475e-08
{'max' }	1413.7	64	1	7837.6	8386.2	0.079842
{'pYis0' }	0	0	0.64538	0.008464	0	0
{'pYls0' }	0	0	0	0	0	2.1631e-06
{'pYgr0' }	1	1	0.35462	0.99154	1	1
{'pYisMINY' }	8.0846e-15	0.0084319	0.64538	0.008464	0	2.5357e-08
{'pYisMAXY' }	9.784e-09	0.035671	0.35462	2.5784e-05	2.8187e-09	0.0003103
{'p0_01' }	100.01	19	0	0	8.3907	0.030058
{'p10' }	105.91	30	0	122.46	146.14	0.038675
{'p25' }	116.38	40	0	239.18	290.41	0.042108
{'p50' }	140.36	50	0	467.15	508.34	0.046702
{'p75' }	184.67	58	1	807.24	835.48	0.052106
{'p90' }	250.3	62	1	1175.1	1271.8	0.056993
{'p99_99' }	1005.7	64	1	6140.4	6451.7	0.079842
{'fl_cov_y_all' }	5574.6	82.616	3.9383	27029	28687	-0.0039422
{'fl_cor_y_all' }	1	0.093888	0.11026	0.6901	0.71786	-0.0078548
{'fl_cov_age_ss' }	82.616	138.9	-0.051378	3187.5	3233.7	0.067815
{'fl_cor_age_ss' }	0.093888	1	-0.0091126	0.51557	0.51265	0.85602
{'fl_cov_educ_ss' }	3.9383	-0.051378	0.22886	1.1548	1.8629	-2.0374e-06
{'fl_cor_educ_ss' }	0.11026	-0.0091126	1	0.0046015	0.0072754	-0.00063355
{'fl_cov_a_ss' }	27029	3187.5	1.1548	2.7519e+05	2.8051e+05	1.5699
{'fl_cor_a_ss' }	0.6901	0.51557	0.0046015	1	0.99906	0.44519
{'fl_cov_ap_ss' }	28687	3233.7	1.8629	2.8051e+05	2.8647e+05	1.5747
{'fl_cor_ap_ss' }	0.71786	0.51265	0.0072754	0.99906	1	0.43769
{'fl_cov_MPC' }	-0.0039422	0.067815	-2.0374e-06	1.5699	1.5747	4.5185e-05
{'fl_cor_MPC' }	-0.0078548	0.85602	-0.00063355	0.44519	0.43769	1
{'fl_cov_Mass' }	-3.2407e-05	-4.7599e-07	-1.5824e-07	-0.00016835	-0.00017615	9.0958e-10
{'fl_cor_Mass' }	-0.36338	-0.033813	-0.27693	-0.26869	-0.27554	0.11329
{'fl_cov_c_ss' }	2511	15.67	2.2388	14895	15495	-0.0078019
{'fl_cor_c_ss' }	0.94083	0.037196	0.13092	0.79429	0.80987	-0.032469
{'fl_cov_y_head_inc' }	5574.6	82.616	3.9383	27029	28687	-0.0039422
{'fl_cor_y_head_inc' }	1	0.093888	0.11026	0.6901	0.71786	-0.0078548
{'fl_cov_y_spouse' }	0	0	0	0	0	0
{'fl_cor_y_spouse' }	NaN	NaN	NaN	NaN	NaN	NaN
{'fl_cov_yshr_nttxss'}	0.64609	0.011641	0.00050086	3.1347	3.3246	-2.0849e-07
{'fl_cor_yshr_nttxss'}	0.90808	0.10365	0.10987	0.62707	0.65183	-0.0032548
{'fracByP0_01' }	7.5135e-05	0.003346	0	0	1.097e-06	2.6055e-05
{'fracByP10' }	0.062666	0.056801	0	0.013271	0.012935	0.078221
{'fracByP25' }	0.16403	0.16984	0	0.057688	0.064153	0.20659
{'fracByP50' }	0.35792	0.40929	0	0.223	0.21964	0.44142
{'fracByP75' }	0.60086	0.72112	1	0.50267	0.47584	0.70175
{'fracByP90' }	0.79433	0.90509	1	0.70917	0.71292	0.87411
{'fracByP99_99' }	0.99932	1	1	0.99885	0.99887	1

Store Aggregate To File

Store Several Files:

1. Overall Aggregate Statistics All Distribution
2. Aggregate Statistics Only for 18 to 64 year olds
3. Group Statistics by Kids
4. Group Statistics by Marital + Kids
5. Group Statistics by Marital + Kids + Income Bins

```
if (bl_save_csv)
```

```
    % All Stats All Ages
    mp_path = snw_mp_path('fan');
    spt_simu_results_csv = mp_path('spt_simu_results_csv');
    writetable(tb_dist_stats_all, [spt_simu_results_csv 'stats_all_allages.csv'], 'WriteRowName
    % All Stats 18 to 64 Year old
    mp_path = snw_mp_path('fan');
    spt_simu_results_csv = mp_path('spt_simu_results_csv');
    writetable(tb_dist_stats_all_18to64, [spt_simu_results_csv 'stats_all_18t64.csv'], 'WriteRo
    % Group by K: Kids only
    tb_store_stats_by_k = array2table(mt_store_stats_by_k, 'VariableNames', ...
        {'kids', 'married_mean' ...
        'age_mean', 'age_p50', 'educ_mean', ...
        'a_mean', 'a_p50', 'ap_mean', 'ap_p50', ...
        'y_all_mean', 'y_all_p50', ...
        'mpc_mean', 'mpc_p50', ...
        'mass',...
        'c_ss_mean', 'c_ss_p50', ...
        'y_head_inc_mean', 'y_spouse_mean'});
    mp_path = snw_mp_path('fan');
    spt_simu_results_csv = mp_path('spt_simu_results_csv');
    writetable(tb_store_stats_by_k, [spt_simu_results_csv 'stats_by_kids.csv']);
    % Group by MK: marry + kids only
    tb_store_stats_by_mk = array2table(mt_store_stats_by_mk, 'VariableNames', ...
        {'marital', 'kids', ...
        'age_mean', 'age_p50', 'educ_mean', ...
        'a_mean', 'a_p50', 'ap_mean', 'ap_p50', ...
        'y_all_mean', 'y_all_p50', ...
        'mpc_mean', 'mpc_p50', ...
        'mass',...
        'c_ss_mean', 'c_ss_p50', ...
        'y_head_inc_mean', 'y_spouse_mean'});
    mp_path = snw_mp_path('fan');
    spt_simu_results_csv = mp_path('spt_simu_results_csv');
    writetable(tb_store_stats_by_mk, [spt_simu_results_csv 'stats_by_marital_kids.csv']);
    % Group by MKY
    tb_store_stats_by_mky = array2table(mt_store_stats_by_mky, 'VariableNames', ...
        {'marital', 'kids', 'y_all_start', 'y_all_end', ...
        'age_mean', 'age_p50', 'educ_mean', ...
        'a_mean', 'a_p50', 'ap_mean', 'ap_p50', ...
        'y_all_mean', 'y_all_p50', ...
        'mpc_mean', 'mpc_p50', ...
        'mass',...
        'c_ss_mean', 'c_ss_p50', ...
        'y_head_inc_mean', 'y_spouse_mean'});
    mp_path = snw_mp_path('fan');
    spt_simu_results_csv = mp_path('spt_simu_results_csv');
    writetable(tb_store_stats_by_mky, [spt_simu_results_csv 'stats_by_marital_kids_20kincbins.c
end
```

Store Key Stats to Compare to Key US Distributional Statistics

Earning, income and Wealth.

Income = interest earnings + Social Security + labor income + spousal income. This is equal to y_all.

Earnings = labor income + spousal income.

```
% Income Variable
if (min(abs(total_inc_VFI*58.056 - y_all), [], 'all')>0)
    error('someothing is wrong, total_inc_VFI should be equal to y_all');
end
income = y_all;
% Earning variable
% earn*fl_earn_ratio generated earn_VFI
earning = (mp_valpol_more_ss('earn_VFI') + spouse_inc_VFI)*58.056;
% Wealth Varaible
wealth = a_ss;
```

Generate Key Statistics for these three variables only, distributional Statistics Overall All Ages:

```
% construct input data
income_grp = income(min_age:82, :, :, : ,: ,:);
earning_grp = earning(min_age:82, :, :, : ,: ,:);
wealth_grp = wealth(min_age:82, :, :, : ,: ,:);
Phi_true_grp = Phi_true_1(min_age:82, :, :, : ,: ,:);

mp_cl_ar_xyz_of_s = containers.Map('KeyType','char', 'ValueType','any');
mp_cl_ar_xyz_of_s('earning') = {earning_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('income') = {income_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('wealth') = {wealth_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('earninglog') = {log(earning_grp(:)), zeros(1)};
mp_cl_ar_xyz_of_s('incomelog') = {log(income_grp(:)), zeros(1)};
mp_cl_ar_xyz_of_s('wealthlog') = {log(wealth_grp(:)), zeros(1)};
mp_cl_ar_xyz_of_s('ar_st_y_name') = ["earning", "income", "wealth", "earninglog", "incomelog",

% controls
mp_support = containers.Map('KeyType','char', 'ValueType','any');
mp_support('ar_fl_percentiles') = [20 30 40 60 50 80 90 95 99];
mp_support('bl_display_final') = true;
mp_support('bl_display_detail') = false;
mp_support('bl_display_drvm2outcomes') = false;
mp_support('bl_display_drvstats') = false;
mp_support('bl_display_drvm2covcor') = false;

% Call Function
mp_cl_mt_xyz_of_s = ff_simu_stats(Phi_true_grp(:)/sum(Phi_true_grp,'all'), mp_cl_ar_xyz_of_s, m
```

```
xxx tb_outcomes: all stats xxx
    OriginalVariableNames     earning       income       wealth      earninglog     incomelog     wealthlog
    _____________________     _______     _________     _______     __________     _________     _________

    {'mean'             }       72.136       84.974       245.22         -Inf        4.1042          -Inf
    {'unweighted_sum'   }    9.5943e+07    7.9255e+09    1.2935e+05         -Inf    1.1455e+08          -Inf
    {'sd'               }       80.749       84.549       391.42          NaN       0.81216           NaN
    {'coefofvar'        }       1.1194        0.995       1.5962          NaN       0.19789           NaN
    {'gini'             }      0.51369      0.44243      0.68023          NaN       0.11243           NaN
    {'min'              }            0       2.2124            0         -Inf       0.79408          -Inf
    {'max'              }         2640       2953.5       7837.6       7.8785        7.9907        8.9667
```

{'pYis0' }	0.10578	0	0.12285	0	0	0
{'pYls0' }	0	0	0	0.10695	0	0.16897
{'pYgr0' }	0.89422	1	0.87715	0.89305	1	0.83103
{'pYisMINY' }	0.10578	6.774e-07	0.12285	0.10578	6.774e-07	0.12285
{'pYisMAXY' }	1.5964e-10	1.671e-12	6.0119e-06	1.5964e-10	1.671e-12	6.0119e-06
{'p20' }	15.969	29.216	3.7372	2.7707	3.3747	1.3183
{'p30' }	29.464	38.184	15.308	3.3832	3.6424	2.7284
{'p40' }	40.761	48.225	39.794	3.7077	3.8759	3.6837
{'p60' }	65.423	74.426	146.89	4.1809	4.3098	4.9897
{'p50' }	52.252	59.948	82.04	3.9561	4.0935	4.4072
{'p80' }	108.96	122.39	413.31	4.691	4.8072	6.0242
{'p90' }	159.7	176.61	729.18	5.0733	5.1739	6.5919
{'p95' }	211.84	233.69	979.69	5.3558	5.454	6.8872
{'p99' }	356.31	398.22	1773.5	5.8758	5.987	7.4807
{'fl_cov_earning' }	6520.5	6671.7	8382.5	NaN	53.875	NaN
{'fl_cor_earning' }	1	0.97721	0.26521	NaN	0.82149	NaN
{'fl_cov_income' }	6671.7	7148.6	15059	NaN	57.878	NaN
{'fl_cor_income' }	0.97721	1	0.45504	NaN	0.84286	NaN
{'fl_cov_wealth' }	8382.5	15059	1.5321e+05	NaN	141.72	NaN
{'fl_cor_wealth' }	0.26521	0.45504	1	NaN	0.4458	NaN
{'fl_cov_earninglog'}	NaN	NaN	NaN	NaN	NaN	NaN
{'fl_cor_earninglog'}	NaN	NaN	NaN	NaN	NaN	NaN
{'fl_cov_incomelog' }	53.875	57.878	141.72	NaN	0.65961	NaN
{'fl_cor_incomelog' }	0.82149	0.84286	0.4458	NaN	1	NaN
{'fl_cov_wealthlog' }	NaN	NaN	NaN	NaN	NaN	NaN
{'fl_cor_wealthlog' }	NaN	NaN	NaN	NaN	NaN	NaN
{'fracByP20' }	0.012671	0.04827	0.00074821	NaN	0.14532	NaN
{'fracByP30' }	0.044498	0.08795	0.0041711	NaN	0.23096	NaN
{'fracByP40' }	0.093262	0.13869	0.016749	NaN	0.32262	NaN
{'fracByP60' }	0.23895	0.28076	0.095501	NaN	0.52207	NaN
{'fracByP50' }	0.15762	0.20209	0.045325	NaN	0.41971	NaN
{'fracByP80' }	0.47178	0.50479	0.32852	NaN	0.74357	NaN
{'fracByP90' }	0.65353	0.6766	0.56651	NaN	0.86486	NaN
{'fracByP95' }	0.78022	0.79527	0.70071	NaN	0.92947	NaN
{'fracByP99' }	0.92468	0.93132	0.90524	NaN	0.98459	NaN

```
tb_dist_stats_all = mp_cl_mt_xyz_of_s('tb_outcomes');
% Select columns
tb_dist_stats_all_save = tb_dist_stats_all(1:3,:);
ar_st_columns = ["coefofvar", "gini", "varianceoflog", ...
     "p99p50ratio", "p90p50ratio", "meantomedian", "p50p30ratio", ...
     "fracP0toP20", "fracP20toP40", "fracP40toP60", "fracP60toP80", "fracP80toP100", ...
     "fracP90toP95", "fracP95toP99", "fracP99toP100"];

varianceoflog = tb_dist_stats_all{4:6,"sd"}.^2;

p99p50ratio = tb_dist_stats_all_save{:,"p99"}./tb_dist_stats_all_save{:,"p50"};
p90p50ratio = tb_dist_stats_all_save{:,"p90"}./tb_dist_stats_all_save{:,"p50"};
meantomedian = tb_dist_stats_all_save{:,"mean"}./tb_dist_stats_all_save{:,"p50"};
p50p30ratio = tb_dist_stats_all_save{:,"p50"}./tb_dist_stats_all_save{:,"p30"};
fracP0toP20 = tb_dist_stats_all_save{:,"fracByP20"};
fracP20toP40 = tb_dist_stats_all_save{:,"fracByP40"} - tb_dist_stats_all_save{:,"fracByP20"};
fracP40toP60 = tb_dist_stats_all_save{:,"fracByP60"} - tb_dist_stats_all_save{:,"fracByP40"};
fracP60toP80 = tb_dist_stats_all_save{:,"fracByP80"} - tb_dist_stats_all_save{:,"fracByP60"};
fracP80toP100 = 1 - tb_dist_stats_all_save{:,"fracByP80"};

fracP90toP95 = tb_dist_stats_all_save{:,"fracByP95"} - tb_dist_stats_all_save{:,"fracByP90"};
fracP95toP99 = tb_dist_stats_all_save{:,"fracByP99"} - tb_dist_stats_all_save{:,"fracByP95"};
fracP99toP100 = 1 - tb_dist_stats_all_save{:,"fracByP99"};
```

```
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, varianceoflog, 'Before', 'gini');
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, p99p50ratio);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, p90p50ratio);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, meantomedian);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, p50p30ratio);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, fracP0toP20);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, fracP20toP40);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, fracP40toP60);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, fracP60toP80);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, fracP80toP100);

tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, fracP90toP95);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, fracP95toP99);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, fracP99toP100);
disp(tb_dist_stats_all_save(:, ar_st_columns));
```

	coefofvar	gini	varianceoflog	p99p50ratio	p90p50ratio	meantomedian	p50p30ratio
earning	1.1194	0.51369	NaN	6.819	3.0563	1.3805	1.7734
income	0.995	0.44243	0.65961	6.6427	2.946	1.4174	1.57
wealth	1.5962	0.68023	NaN	21.618	8.8881	2.989	5.3594

```
% Core Stats Table
if (bl_save_csv)
    mp_path = snw_mp_path('fan');
    spt_simu_results_csv = mp_path('spt_simu_results_csv');
    writetable(tb_dist_stats_all_save(:, ar_st_columns), [spt_simu_results_csv 'stats_all_allag
end
```

Statistics overall distributionally for 18 to 64 year olds.

```
% construct input data
income_grp = income(min_age:max_age, :, :, : ,: ,:);
earning_grp = earning(min_age:max_age, :, :, : ,: ,:);
wealth_grp = wealth(min_age:max_age, :, :, : ,: ,:);
Phi_true_grp = Phi_true_1(min_age:max_age, :, :, : ,: ,:);

mp_cl_ar_xyz_of_s = containers.Map('KeyType','char', 'ValueType','any');
mp_cl_ar_xyz_of_s('income') = {income_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('earning') = {earning_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('wealth') = {wealth_grp(:), zeros(1)};
mp_cl_ar_xyz_of_s('earninglog') = {log(earning_grp(:)), zeros(1)};
mp_cl_ar_xyz_of_s('incomelog') = {log(income_grp(:)), zeros(1)};
mp_cl_ar_xyz_of_s('wealthlog') = {log(wealth_grp(:)), zeros(1)};
mp_cl_ar_xyz_of_s('ar_st_y_name') = ["earning", "income", "wealth", "earninglog", "incomelog",

% controls
mp_support = containers.Map('KeyType','char', 'ValueType','any');
mp_support('ar_fl_percentiles') = [20 30 40 60 50 80 90 95 99];
mp_support('bl_display_final') = true;
mp_support('bl_display_detail') = false;
mp_support('bl_display_drvm2outcomes') = false;
mp_support('bl_display_drvstats') = false;
```

```
mp_support('bl_display_drvm2covcor') = false;

% Call Function
mp_cl_mt_xyz_of_s = ff_simu_stats(Phi_true_grp(:)/sum(Phi_true_grp,'all'), mp_cl_ar_xyz_of_s, m
```

```
xxx tb_outcomes: all stats xxx
```

OriginalVariableNames	earning	income	wealth	earninglog	incomelog	wealthlog
{'mean' }	87.466	95.246	194.5	4.1711	4.2425	-Inf
{'unweighted_sum' }	9.394e+07	7.7487e+09	1.2935e+05	1.5445e+06	1.116e+08	-Inf
{'sd' }	82.434	89.631	344.5	0.76834	0.79264	NaN
{'coefofvar' }	0.94247	0.94104	1.7712	0.1842	0.18683	NaN
{'gini' }	0.417	0.42428	0.71579	0.10382	0.1055	NaN
{'min' }	2.2124	2.2124	0	0.79408	0.79408	-Inf
{'max' }	2640	2953.5	7837.6	7.8785	7.9907	8.9667
{'pYis0' }	0	0	0.14627	0	0	0
{'pYls0' }	0	0	0	0	0	0.20232
{'pYgr0' }	1	1	0.85373	1	1	0.79768
{'pYisMINY' }	8.617e-07	8.6135e-07	0.14627	8.617e-07	8.6135e-07	0.14627
{'pYisMAXY' }	2.0299e-10	2.1248e-12	5.4766e-06	2.0299e-10	2.1248e-12	5.4766e-06
{'p20' }	34.093	35.624	0.80724	3.5291	3.573	-0.21413
{'p30' }	43.249	45.828	6.458	3.767	3.8249	1.8653
{'p40' }	52.993	56.888	29.898	3.9702	4.0411	3.3978
{'p60' }	77.857	85.184	100.91	4.3549	4.4448	4.6142
{'p50' }	64.26	69.57	51.664	4.1629	4.2423	3.9448
{'p80' }	124.43	137.12	318.35	4.8237	4.9209	5.7632
{'p90' }	175.33	192.9	588.48	5.1667	5.2621	6.3775
{'p95' }	227.34	250.34	890.69	5.4265	5.5228	6.792
{'p99' }	384.15	427.18	1640.6	5.951	6.0572	7.4028
{'fl_cov_earning' }	6795.4	7319.6	13105	53.1	53.884	NaN
{'fl_cor_earning' }	1	0.99065	0.46144	0.83837	0.82467	NaN
{'fl_cov_income' }	7319.6	8033.6	17852	58.043	59.852	NaN
{'fl_cor_income' }	0.99065	1	0.57814	0.84283	0.84246	NaN
{'fl_cov_wealth' }	13105	17852	1.1868e+05	123.58	149.2	NaN
{'fl_cor_wealth' }	0.46144	0.57814	1	0.46687	0.5464	NaN
{'fl_cov_earninglog'}	53.1	58.043	123.58	0.59034	0.6043	NaN
{'fl_cor_earninglog'}	0.83837	0.84283	0.46687	1	0.99226	NaN
{'fl_cov_incomelog' }	53.884	59.852	149.2	0.6043	0.62827	NaN
{'fl_cor_incomelog' }	0.82467	0.84246	0.5464	0.99226	1	NaN
{'fl_cov_wealthlog' }	NaN	NaN	NaN	NaN	NaN	NaN
{'fl_cor_wealthlog' }	NaN	NaN	NaN	NaN	NaN	NaN
{'fracByP20' }	0.053802	0.050961	0.00014055	0.14882	0.14762	NaN
{'fracByP30' }	0.098055	0.093694	0.0021143	0.23646	0.23488	NaN
{'fracByP40' }	0.153	0.14753	0.015697	0.3292	0.32764	NaN
{'fracByP60' }	0.30069	0.29468	0.079605	0.52874	0.52766	NaN
{'fracByP50' }	0.21981	0.21374	0.034043	0.42667	0.42529	NaN
{'fracByP80' }	0.52452	0.52079	0.28918	0.74816	0.7478	NaN
{'fracByP90' }	0.69236	0.69054	0.51495	0.86758	0.86757	NaN
{'fracByP95' }	0.80576	0.80501	0.69371	0.93096	0.93099	NaN
{'fracByP99' }	0.93293	0.93437	0.90041	0.98483	0.98492	NaN

```
tb_dist_stats_all = mp_cl_mt_xyz_of_s('tb_outcomes');
% Select columns
tb_dist_stats_all_save = tb_dist_stats_all(1:3,:);
ar_st_columns = ["coefofvar", "gini", "varianceoflog", ...
     "p99p50ratio", "p90p50ratio", "meantomedian", "p50p30ratio", ...
     "fracP0toP20", "fracP20toP40", "fracP40toP60", "fracP60toP80", "fracP80toP100", ...
     "fracP90toP95", "fracP95toP99", "fracP99toP100"];

varianceoflog = tb_dist_stats_all{4:6,"sd"}.^2;
```

```
p99p50ratio = tb_dist_stats_all_save{:,"p99"}./tb_dist_stats_all_save{:,"p50"};
p90p50ratio = tb_dist_stats_all_save{:,"p90"}./tb_dist_stats_all_save{:,"p50"};
meantomedian = tb_dist_stats_all_save{:,"mean"}./tb_dist_stats_all_save{:,"p50"};
p50p30ratio = tb_dist_stats_all_save{:,"p50"}./tb_dist_stats_all_save{:,"p30"};
fracP0toP20 = tb_dist_stats_all_save{:,"fracByP20"};
fracP20toP40 = tb_dist_stats_all_save{:,"fracByP40"} - tb_dist_stats_all_save{:,"fracByP20"};
fracP40toP60 = tb_dist_stats_all_save{:,"fracByP60"} - tb_dist_stats_all_save{:,"fracByP40"};
fracP60toP80 = tb_dist_stats_all_save{:,"fracByP80"} - tb_dist_stats_all_save{:,"fracByP60"};
fracP80toP100 = 1 - tb_dist_stats_all_save{:,"fracByP80"};

fracP90toP95 = tb_dist_stats_all_save{:,"fracByP95"} - tb_dist_stats_all_save{:,"fracByP90"};
fracP95toP99 = tb_dist_stats_all_save{:,"fracByP99"} - tb_dist_stats_all_save{:,"fracByP95"};
fracP99toP100 = 1 - tb_dist_stats_all_save{:,"fracByP99"};

tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, varianceoflog, 'Before', 'gini');
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, p99p50ratio);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, p90p50ratio);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, meantomedian);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, p50p30ratio);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, fracP0toP20);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, fracP20toP40);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, fracP40toP60);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, fracP60toP80);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, fracP80toP100);

tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, fracP90toP95);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, fracP95toP99);
tb_dist_stats_all_save = addvars(tb_dist_stats_all_save, fracP99toP100);
disp(tb_dist_stats_all_save(:, ar_st_columns));
```

	coefofvar	gini	varianceoflog	p99p50ratio	p90p50ratio	meantomedian	p50p30ratio
earning	0.94247	0.417	0.59034	5.978	2.7285	1.3611	1.4858
income	0.94104	0.42428	0.62827	6.1403	2.7727	1.3691	1.5181
wealth	1.7712	0.71579	NaN	31.755	11.391	3.7648	8

```
% Core Stats Table
if (bl_save_csv)
    mp_path = snw_mp_path('fan');
    spt_simu_results_csv = mp_path('spt_simu_results_csv');
    writetable(tb_dist_stats_all_save(:, ar_st_columns), [spt_simu_results_csv 'stats_all_18t64
end
```