Distribution Exact Savings Choices Vectorized

This is the example vignette for function: **snw_ds_main_vec** from the **PrjOptiSNW Package.** This function solves for vfi and gets distribution induced by policy functions and exogenous distributions. Vectorized vfi and distribution methods.

Test SNW_DS_MAIN_VEC

Call the function with testing defaults.

```
% mp_params = snw_mp_param('default_dense');
mp_params = snw_mp_param('default_docdense');
mp_controls = snw_mp_control('default_test');
mp_controls('bl_print_vfi') = false;
mp_controls('bl_print_ds') = true;
mp_controls('bl_print_ds_verbose') = false;
[Phi_true,Phi_adj,A_agg,Y_inc_agg,it,mp_dsvfi_results] = snw_ds_main_vec(mp_params, mp_controls
```

```
Completed SNW_VFI_MAIN_BISEC_VEC;SNW_MP_PARAM=default_docdense;SNW_MP_CONTROL=default_test;time=543.5601
----------------------------------------
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
CONTAINER NAME: mp_outcomes ND Array (Matrix etc)
xxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
```

	i	idx	ndim	numel	rowN	colN	sum	mean	std	coefvari
V_VFI	1	1	6	4.37e+07	83	5.265e+05	-8.6673e+08	-19.834	28.177	-1.4206
ap_VFI	2	2	6	4.37e+07	83	5.265e+05	1.4164e+09	32.412	36.8	1.1354
cons_VFI	3	3	6	4.37e+07	83	5.265e+05	2.131e+08	4.8764	8.3268	1.7076

```
xxx TABLE:V_VFI xxxxxxxxxxxxxxxxxx
```

	c1	c2	c3	c4	c5	c526496	c526497	c526498	c526499
r1	-376.05	-375.66	-373.17	-367.4	-358.05	-6.68	-6.5297	-6.3792	-6.2274
r2	-363.8	-363.41	-360.93	-355.25	-346.25	-6.4892	-6.3437	-6.1974	-6.0495
r3	-351.75	-351.36	-348.9	-343.44	-334.9	-6.2948	-6.1538	-6.0116	-5.8671
r4	-339.81	-339.45	-337.16	-332.06	-324.04	-6.095	-5.9584	-5.82	-5.6786
r5	-328.99	-328.65	-326.51	-321.72	-314.17	-5.9054	-5.7725	-5.6372	-5.4986
r79	-14.033	-14.02	-13.926	-13.689	-13.287	-0.22848	-0.21775	-0.20768	-0.19824
r80	-12.564	-12.55	-12.457	-12.22	-11.818	-0.17427	-0.16611	-0.15842	-0.15117
r81	-10.778	-10.764	-10.671	-10.434	-10.032	-0.11927	-0.11368	-0.10843	-0.10346
r82	-8.4226	-8.4089	-8.3155	-8.0786	-7.6766	-0.06597	-0.06284	-0.059924	-0.057184
r83	-5.0665	-5.0529	-4.9595	-4.7226	-4.3206	-0.020968	-0.019972	-0.019038	-0.018161

```
xxx TABLE:ap_VFI xxxxxxxxxxxxxxxxxx
```

	c1	c2	c3	c4	c5	c526496	c526497	c526498	c526499	c526500
r1	0	0	0.0005656	0.0075134	0.022901	114.76	120.42	126.29	132.39	138.81
r2	0	0	0.00051498	0.0065334	0.021549	114.87	120.54	126.42	132.55	138.97
r3	0	0	0.00051498	0.0049294	0.019875	114.98	120.67	126.57	132.72	139.13
r4	0	0	0.00051498	0.0047937	0.019672	115.74	121.44	127.36	133.52	139.94
r5	0	0	0.00048517	0.0046683	0.019484	116.51	122.22	128.16	134.34	140.76
r79	0	0	0	0	0.00051498	81.091	85.68	90.325	94.371	98.41
r80	0	0	0	0	0	76.669	80.55	84.292	88.029	91.682
r81	0	0	0	0	0	68.313	71.52	74.459	77.816	81.096
r82	0	0	0	0	0	50.126	53.467	56.953	58.728	60.587
r83	0	0	0	0	0	0	0	0	0	0

xxx TABLE:cons_VFI xxxxxxxxxxxxxxxxxx

	c1	c2	c3	c4	c5	c526496	c526497	c526498	c526499	c
r1	0.036717	0.037251	0.040426	0.04363	0.048012	9.6396	9.8066	9.9533	10.06	
r2	0.036717	0.037251	0.040477	0.04461	0.049364	9.8014	9.9571	10.088	10.177	1
r3	0.036717	0.037251	0.040477	0.046214	0.051039	9.9664	10.108	10.22	10.287	1
r4	0.038144	0.038678	0.041903	0.047776	0.052666	10.118	10.244	10.339	10.388	1
r5	0.039534	0.040068	0.043323	0.04929	0.054241	10.258	10.369	10.446	10.483	1
r79	0.19737	0.19791	0.20163	0.21175	0.23093	35.811	37.046	38.418	40.587	4
r80	0.19737	0.19791	0.20163	0.21175	0.23145	40.207	42.15	44.426	46.904	4
r81	0.19737	0.19791	0.20163	0.21175	0.23145	48.541	51.158	54.236	57.094	6
r82	0.19737	0.19791	0.20163	0.21175	0.23145	66.71	69.193	71.724	76.164	
r83	0.19737	0.19791	0.20163	0.21175	0.23145	116.82	122.65	128.66	134.88	1

SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:1 of 82, time-this-age:0.3786
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:2 of 82, time-this-age:4.8096
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:3 of 82, time-this-age:5.9174
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:4 of 82, time-this-age:6.508
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:5 of 82, time-this-age:6.8927
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:6 of 82, time-this-age:7.5887
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:7 of 82, time-this-age:8.1099
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:8 of 82, time-this-age:9.0281
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:9 of 82, time-this-age:9.1355
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:10 of 82, time-this-age:11.9284
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:11 of 82, time-this-age:11.8537
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:12 of 82, time-this-age:14.3041
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:13 of 82, time-this-age:14.4545
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:14 of 82, time-this-age:14.7013
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:15 of 82, time-this-age:14.7272
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:16 of 82, time-this-age:14.7332
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:17 of 82, time-this-age:15.1111
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:18 of 82, time-this-age:14.5327
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:19 of 82, time-this-age:15.2564
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:20 of 82, time-this-age:15.4999
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:21 of 82, time-this-age:15.5015
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:22 of 82, time-this-age:16.8247
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:23 of 82, time-this-age:17.1551
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:24 of 82, time-this-age:16.2079
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:25 of 82, time-this-age:16.4377
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:26 of 82, time-this-age:16.5744
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:27 of 82, time-this-age:17.8337
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:28 of 82, time-this-age:17.647
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:29 of 82, time-this-age:17.601
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:30 of 82, time-this-age:17.5908
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:31 of 82, time-this-age:17.2374
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:32 of 82, time-this-age:17.3831
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:33 of 82, time-this-age:17.7541
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:34 of 82, time-this-age:17.2324
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:35 of 82, time-this-age:17.6096
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:36 of 82, time-this-age:17.8942
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:37 of 82, time-this-age:17.3612
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:38 of 82, time-this-age:16.873
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:39 of 82, time-this-age:16.9254
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:40 of 82, time-this-age:16.8782
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:41 of 82, time-this-age:16.5205
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:42 of 82, time-this-age:16.8312
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:43 of 82, time-this-age:16.23
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:44 of 82, time-this-age:16.1342
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:45 of 82, time-this-age:16.4806
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:46 of 82, time-this-age:15.8565
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:47 of 82, time-this-age:15.4775
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:48 of 82, time-this-age:15.4721
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:49 of 82, time-this-age:19.033
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:50 of 82, time-this-age:20.2225

```
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:51 of 82, time-this-age:20.5336
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:52 of 82, time-this-age:19.8387
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:53 of 82, time-this-age:20.2331
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:54 of 82, time-this-age:20.6319
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:55 of 82, time-this-age:20.6243
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:56 of 82, time-this-age:14.9386
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:57 of 82, time-this-age:14.0026
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:58 of 82, time-this-age:14.161
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:59 of 82, time-this-age:14.8816
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:60 of 82, time-this-age:10.6737
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:61 of 82, time-this-age:16.4232
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:62 of 82, time-this-age:10.5139
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:63 of 82, time-this-age:12.1908
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:64 of 82, time-this-age:11.9561
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:65 of 82, time-this-age:12.7329
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:66 of 82, time-this-age:13.7721
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:67 of 82, time-this-age:12.0024
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:68 of 82, time-this-age:11.9243
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:69 of 82, time-this-age:12.7582
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:70 of 82, time-this-age:12.1532
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:71 of 82, time-this-age:9.4885
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:72 of 82, time-this-age:10.7963
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:73 of 82, time-this-age:11.1703
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:74 of 82, time-this-age:10.3998
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:75 of 82, time-this-age:9.1922
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:76 of 82, time-this-age:11.3241
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:77 of 82, time-this-age:10.0886
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:78 of 82, time-this-age:9.2365
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:79 of 82, time-this-age:7.7439
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:80 of 82, time-this-age:7.7752
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:81 of 82, time-this-age:7.2503
SNW_DS_MAIN_VEC ACUMU MASS: Finished Age Group:82 of 82, time-this-age:6.2078
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:1 of 82, time-this-age:0.4434
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:2 of 82, time-this-age:0.057613
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:3 of 82, time-this-age:0.063844
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:4 of 82, time-this-age:0.050822
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:5 of 82, time-this-age:0.070678
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:6 of 82, time-this-age:0.060849
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:7 of 82, time-this-age:0.065418
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:8 of 82, time-this-age:0.061329
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:9 of 82, time-this-age:0.056986
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:10 of 82, time-this-age:0.063646
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:11 of 82, time-this-age:0.05255
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:12 of 82, time-this-age:0.057059
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:13 of 82, time-this-age:0.048215
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:14 of 82, time-this-age:0.063939
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:15 of 82, time-this-age:0.052633
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:16 of 82, time-this-age:0.056284
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:17 of 82, time-this-age:0.059784
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:18 of 82, time-this-age:0.053468
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:19 of 82, time-this-age:0.064496
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:20 of 82, time-this-age:0.067389
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:21 of 82, time-this-age:0.069029
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:22 of 82, time-this-age:0.051852
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:23 of 82, time-this-age:0.071656
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:24 of 82, time-this-age:0.055803
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:25 of 82, time-this-age:0.050012
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:26 of 82, time-this-age:0.056304
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:27 of 82, time-this-age:0.048197
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:28 of 82, time-this-age:0.048567
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:29 of 82, time-this-age:0.047927
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:30 of 82, time-this-age:0.055782
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:31 of 82, time-this-age:0.065655
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:32 of 82, time-this-age:0.056483
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:33 of 82, time-this-age:0.054022
```

```
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:34 of 82, time-this-age:0.048944
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:35 of 82, time-this-age:0.049292
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:36 of 82, time-this-age:0.057768
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:37 of 82, time-this-age:0.05061
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:38 of 82, time-this-age:0.054212
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:39 of 82, time-this-age:0.058645
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:40 of 82, time-this-age:0.04779
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:41 of 82, time-this-age:0.050251
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:42 of 82, time-this-age:0.053709
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:43 of 82, time-this-age:0.059374
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:44 of 82, time-this-age:0.049218
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:45 of 82, time-this-age:0.051461
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:46 of 82, time-this-age:0.046182
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:47 of 82, time-this-age:0.052269
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:48 of 82, time-this-age:0.046998
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:49 of 82, time-this-age:0.067955
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:50 of 82, time-this-age:0.063089
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:51 of 82, time-this-age:0.051776
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:52 of 82, time-this-age:0.049762
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:53 of 82, time-this-age:0.068838
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:54 of 82, time-this-age:0.056374
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:55 of 82, time-this-age:0.079779
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:56 of 82, time-this-age:0.07178
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:57 of 82, time-this-age:0.049449
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:58 of 82, time-this-age:0.062064
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:59 of 82, time-this-age:0.054074
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:60 of 82, time-this-age:0.066304
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:61 of 82, time-this-age:0.056874
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:62 of 82, time-this-age:0.057744
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:63 of 82, time-this-age:0.074837
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:64 of 82, time-this-age:0.054466
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:65 of 82, time-this-age:0.063535
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:66 of 82, time-this-age:0.057064
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:67 of 82, time-this-age:0.058795
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:68 of 82, time-this-age:0.052117
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:69 of 82, time-this-age:0.053227
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:70 of 82, time-this-age:0.065072
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:71 of 82, time-this-age:0.053119
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:72 of 82, time-this-age:0.062005
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:73 of 82, time-this-age:0.05542
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:74 of 82, time-this-age:0.060745
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:75 of 82, time-this-age:0.05168
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:76 of 82, time-this-age:0.051709
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:77 of 82, time-this-age:0.058973
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:78 of 82, time-this-age:0.059053
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:79 of 82, time-this-age:0.069633
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:80 of 82, time-this-age:0.046625
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:81 of 82, time-this-age:0.069697
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:82 of 82, time-this-age:0.049734
SNW_DS_MAIN NORMALIZE MASS: Finished Age Group:83 of 82, time-this-age:0.046755
SNW_DS_MAIN: Share of population with assets equal to upper bound on asset grid:6.8049e-06
SNW_DS_MAIN: Accidental bequests are thrown in the ocean
SNW_DS_MAIN_VEC tax and spend;it=1;err=0.014163
SNW_DS_MAIN_VEC tax and spend;it=2;err=0.011847
SNW_DS_MAIN_VEC tax and spend;it=3;err=0.0098976
SNW_DS_MAIN_VEC tax and spend;it=4;err=0.0082601
SNW_DS_MAIN_VEC tax and spend;it=5;err=0.0068875
SNW_DS_MAIN_VEC tax and spend;it=6;err=0.0057387
SNW_DS_MAIN_VEC tax and spend;it=7;err=0.0047786
SNW_DS_MAIN_VEC tax and spend;it=8;err=0.0039772
SNW_DS_MAIN_VEC tax and spend;it=9;err=0.0033087
SNW_DS_MAIN_VEC tax and spend;it=10;err=0.0027516
SNW_DS_MAIN_VEC tax and spend;it=11;err=0.0022876
SNW_DS_MAIN_VEC tax and spend;it=12;err=0.0019014
SNW_DS_MAIN_VEC tax and spend;it=13;err=0.0015801
```

```
SNW_DS_MAIN_VEC tax and spend;it=14;err=0.0013128
SNW_DS_MAIN_VEC tax and spend;it=15;err=0.0010906
SNW_DS_MAIN_VEC tax and spend;it=16;err=0.00090591
SNW_DS_MAIN_VEC tax and spend;it=17;err=0.00075241
SNW_DS_MAIN_VEC tax and spend;it=18;err=0.00062488
SNW_DS_MAIN_VEC tax and spend;it=19;err=0.00051892
SNW_DS_MAIN_VEC tax and spend;it=20;err=0.00043091
SNW_DS_MAIN_VEC tax and spend;it=21;err=0.00035781
SNW_DS_MAIN_VEC tax and spend;it=22;err=0.0002971
SNW_DS_MAIN_VEC tax and spend;it=23;err=0.00024668
SNW_DS_MAIN_VEC tax and spend;it=24;err=0.00020481
SNW_DS_MAIN_VEC tax and spend;it=25;err=0.00017004
SNW_DS_MAIN_VEC tax and spend;it=26;err=0.00014118
SNW_DS_MAIN_VEC tax and spend;it=27;err=0.00011721
SNW_DS_MAIN_VEC tax and spend;it=28;err=9.7309e-05
SNW_DS_MAIN_VEC: Number of a2-adjustments (for taxation) used to balance the government budget= 28
SNW_DS_MAIN_VEC: Old and updated value of a2=1.5286      1.4349
SNW_DS_MAIN_VEC: Aggregates: Cons., Gov. cons., Save, Assets, Income, Bequests 48.70063      11.42006      199.6692
SNW_DS_MAIN_VEC: Resource constraint: C_t+A_{t+1}+G_t=A_t+Y_t 264.4537      264.6461
Completed SNW_DS_MAIN_VEC;SNW_MP_PARAM=default_docdense;SNW_MP_CONTROL=default_test;time=1820.5957
xxx tb_outcomes: all stats xxx
```

OriginalVariableNames	a_ss	ap_ss	cons_ss	n_ss	y_all	y_head_inc	y
{'mean' }	4.3602	4.4621	1.0635	2.3554	1.4661	1.1081	
{'unweighted_sum' }	2228	5.3216e+08	5.0787e+07	21	8.3558e+07	1.9253e+06	
{'sd' }	6.8796	6.9169	0.6938	1.4375	1.4665	1.013	
{'coefofvar' }	1.5778	1.5501	0.65237	0.61029	1.0003	0.91419	
{'gini' }	0.6755	0.67638	0.33936	0.3128	0.44546	0.42164	
{'min' }	0	0	0.036717	1	0.038108	0.038108	
{'max' }	135	163.73	141.61	6	50.873	24.357	
{'pYis0' }	0.11808	0.097968	0	0	0	0	
{'pYls0' }	0	0	0	0	0	0	
{'pYgr0' }	0.88192	0.90203	1	1	1	1	
{'pYisMINY' }	0.11808	0.097968	8.6094e-07	0.36005	8.6094e-07	1.2258e-06	
{'pYisMAXY' }	6.8049e-06	2.2836e-12	0	0.041101	2.2836e-12	1.694e-09	1
{'p0_01' }	0	0	0.066342	1	0.069931	0.065666	
{'p0_1' }	0	0	0.10404	1	0.11208	0.1034	
{'p1' }	0	0	0.18515	1	0.20327	0.17983	
{'p5' }	0	0	0.27323	1	0.26924	0.24742	
{'p10' }	0	0.00051498	0.35662	1	0.34663	0.30438	
{'p20' }	0.064373	0.083002	0.49455	1	0.49947	0.41077	
{'p25' }	0.17664	0.20935	0.56067	1	0.57738	0.47063	
{'p30' }	0.37542	0.39434	0.62765	1	0.65537	0.52838	
{'p40' }	0.88989	0.90689	0.76677	2	0.82916	0.65292	
{'p50' }	1.7381	1.6906	0.91665	2	1.0312	0.8006	
{'p60' }	3.0034	2.8912	1.0828	2	1.2832	0.98455	
{'p70' }	4.7693	4.7054	1.2762	3	1.6179	1.2279	
{'p75' }	5.4836	5.9044	1.3916	3	1.8375	1.3881	
{'p80' }	7.1191	7.4694	1.5274	4	2.1165	1.5859	
{'p90' }	12.56	12.521	1.9354	5	3.0585	2.2533	
{'p95' }	16.875	17.769	2.3449	5	4.0476	2.9937	
{'p99' }	30.548	31.792	3.4017	6	6.9072	5.0375	
{'p99_9' }	56.953	57.866	5.2893	6	14.815	8.8678	
{'p99_99' }	90.439	90.717	7.5592	6	21.023	13.702	
{'fl_cov_a_ss' }	47.329	47.318	3.476	-1.478	4.5793	3.9427	
{'fl_cor_a_ss' }	1	0.99439	0.72826	-0.14945	0.45389	0.56573	
{'fl_cov_ap_ss' }	47.318	47.844	3.5799	-1.4406	5.4304	4.2301	
{'fl_cor_ap_ss' }	0.99439	1	0.74597	-0.14488	0.53534	0.60369	
{'fl_cov_cons_ss' }	3.476	3.5799	0.48135	0.23978	0.7718	0.5704	
{'fl_cor_cons_ss' }	0.72826	0.74597	1	0.24042	0.75854	0.81157	
{'fl_cov_n_ss' }	-1.478	-1.4406	0.23978	2.0664	0.36196	0.09459	
{'fl_cor_n_ss' }	-0.14945	-0.14488	0.24042	1	0.1717	0.064956	
{'fl_cov_y_all' }	4.5793	5.4304	0.7718	0.36196	2.1507	1.1331	
{'fl_cor_y_all' }	0.45389	0.53534	0.75854	0.1717	1	0.76267	

{'fl_cov_y_head_inc' }	3.9427	4.2301	0.5704	0.09459	1.1331	1.0262
{'fl_cor_y_head_inc' }	0.56573	0.60369	0.81157	0.064956	0.76267	1
{'fl_cov_y_head_earn' }	1.8957	2.208	0.43323	0.19345	0.98441	0.89528
{'fl_cor_y_head_earn' }	0.29692	0.34397	0.67286	0.14501	0.7233	0.95229
{'fl_cov_y_spouse_inc' }	0.63663	1.2003	0.2014	0.26737	1.0177	0.10683
{'fl_cor_y_spouse_inc' }	0.096963	0.18183	0.30417	0.19489	0.7271	0.1105
{'fl_cov_yshr_interest'}	0.80041	0.75231	0.03747	-0.072581	-0.014203	0.0035862
{'fl_cor_yshr_interest'}	0.6619	0.61877	0.30725	-0.28725	-0.055097	0.02014
{'fl_cov_yshr_wage' }	-0.80811	-0.71978	-0.0042544	0.17131	0.10973	0.064337
{'fl_cor_yshr_wage' }	-0.34878	-0.30898	-0.018207	0.35386	0.22217	0.18857
{'fl_cov_yshr_SS' }	0.007703	-0.03253	-0.033215	-0.098733	-0.095531	-0.067923
{'fl_cor_yshr_SS' }	0.0049412	-0.020754	-0.21127	-0.3031	-0.28746	-0.29589
{'fl_cov_yshr_tax' }	0.10041	0.11154	0.018848	0.013683	0.039306	0.025209
{'fl_cor_yshr_tax' }	0.40929	0.45221	0.76179	0.26692	0.75157	0.69781
{'fl_cov_yshr_nttxss' }	0.09271	0.14407	0.052063	0.11242	0.13484	0.093132
{'fl_cor_yshr_nttxss' }	0.054578	0.084358	0.30392	0.31672	0.37237	0.37233
{'fracByP0_01' }	0	0	5.4726e-06	0.15286	4.2573e-06	5.2131e-06
{'fracByP0_1' }	0	0	8.2626e-05	0.15286	6.3235e-05	7.7569e-05
{'fracByP1' }	0	0	0.0013773	0.15286	0.0010873	0.0013113
{'fracByP5' }	0	0	0.010075	0.15286	0.0076055	0.0094768
{'fracByP10' }	0	1.8925e-07	0.024991	0.15286	0.018124	0.022842
{'fracByP20' }	0.00071111	0.0007016	0.065093	0.15286	0.047	0.055458
{'fracByP25' }	0.0023543	0.0022849	0.089893	0.15286	0.065314	0.076507
{'fracByP30' }	0.0065355	0.0056773	0.11782	0.15286	0.086292	0.096841
{'fracByP40' }	0.023222	0.019937	0.1833	0.40183	0.1368	0.1495
{'fracByP50' }	0.057104	0.048358	0.26234	0.40183	0.20002	0.21496
{'fracByP60' }	0.11454	0.098974	0.35614	0.40183	0.27863	0.29527
{'fracByP70' }	0.2027	0.18293	0.46671	0.56321	0.37699	0.3946
{'fracByP75' }	0.23918	0.24222	0.52936	0.56321	0.43577	0.4535
{'fracByP80' }	0.32171	0.31675	0.59788	0.75407	0.50297	0.52044
{'fracByP90' }	0.55921	0.53294	0.75856	0.8953	0.67532	0.68972
{'fracByP95' }	0.69427	0.69899	0.85803	0.8953	0.79442	0.80585
{'fracByP99' }	0.90202	0.9039	0.96048	1	0.93109	0.9399
{'fracByP99_9' }	0.9849	0.98396	0.99413	1	0.988	0.99015
{'fracByP99_99' }	0.99794	0.99764	0.99921	1	0.99841	0.99857

```
% [Phi_true,Phi_adj] = snw_ds_main(mp_params, mp_controls);
Phi_true = Phi_true/sum(Phi_true(:));
```

Show All Info in mp_dsvfi_results

```
mp_cl_mt_xyz_of_s = mp_dsvfi_results('mp_cl_mt_xyz_of_s');
disp(mp_cl_mt_xyz_of_s('tb_outcomes'))
```

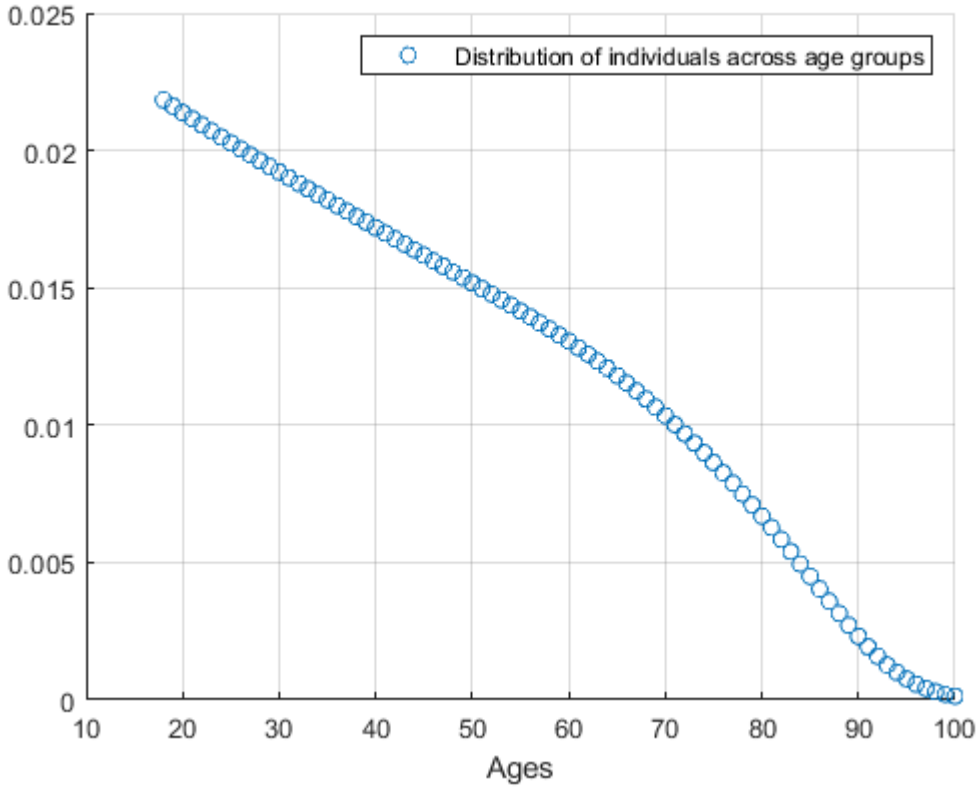
	mean	unweighted_sum	sd	coefofvar	gini	min	max	pYis0
a_ss	4.3602	2228	6.8796	1.5778	0.6755	0	135	0.118
ap_ss	4.4621	5.3216e+08	6.9169	1.5501	0.67638	0	163.73	0.0979
cons_ss	1.0635	5.0787e+07	0.6938	0.65237	0.33936	0.036717	141.61	
n_ss	2.3554	21	1.4375	0.61029	0.3128	1	6	
y_all	1.4661	8.3558e+07	1.4665	1.0003	0.44546	0.038108	50.873	
y_head_inc	1.1081	1.9253e+06	1.013	0.91419	0.42164	0.038108	24.357	
y_head_earn	0.88655	19732	0.92804	1.0468	0.53121	0	18.957	0.20
y_spouse_inc	0.35797	4.827e+05	0.95437	2.6661	0.85269	0	26.627	0.524
yshr_interest	0.12865	3.8438e+06	0.17577	1.3663	0.65781	0	0.99299	0.118
yshr_wage	0.77402	8.8881e+06	0.33679	0.43512	0.2062	0	1	0.105
yshr_SS	0.097329	29012	0.2266	2.3282	0.91382	0	1	0.79
yshr_tax	0.17833	2.8338e+06	0.035661	0.19998	0.11386	0.036506	0.2552	
yshr_nttxss	0.080996	2.8048e+06	0.24691	3.0485	1.2592	-0.89715	0.2552	

Show Distribution by Age

Note that the age-distribution is exogenously determined by the age-specific survival rate. From: "load('Mortality_prob_by_age_18_99.mat','mort_prob') psi_full=1-mort_prob;".

First, we generate a vector for the age-specific mass, and visualize this.

```
ar_fl_phi_true_age = NaN([size(Phi_true,1),1]);
for it_age_ctr=1:size(Phi_true,1)
  ar_fl_phi_true_age(it_age_ctr,1) = sum(Phi_true(it_age_ctr,:));
end
ar_ages = 18:(18+size(Phi_true,1)-1);
% Graph
figure();
h1 = scatter(ar_ages, ar_fl_phi_true_age);
grid on;
legend1 = sprintf('Distribution of individuals across age groups');
legend({legend1});
xlabel("Ages");
```



Second, given some overall age span from age Xl to Xu, we consider G segments within, and the conditional probability of mass in each of the G segments within Xl to Xu bounds.

```
% Overall prime-age
it_age_min = 18;
it_age_max = 65;
ar_ages_18t65 = ((ar_ages<=it_age_max) & (ar_ages>=it_age_min));
ar_fl_phi_true_age_18t65 = ar_fl_phi_true_age(ar_ages_18t65);
```

```
fl_total_mass_18t65 = sum(ar_fl_phi_true_age_18t65);
% Sub-segments
ar_it_lower = [18, 25, 55]';
ar_it_higher = [24, 54, 65]';
ar_fl_p_agegrp_condi_18t65 = NaN([length(ar_it_lower),1]);
for it_age_ctr=1:length(ar_it_lower)
  it_age_lower = ar_it_lower(it_age_ctr);
  it_age_higher = ar_it_higher(it_age_ctr);
  ar_ages_subgrp = ((ar_ages<=it_age_higher) & (ar_ages>=it_age_lower));
  ar_fl_phi_true_age_subgrp = ar_fl_phi_true_age(ar_ages_subgrp);
  ar_fl_p_agegrp_condi_18t65(it_age_ctr) = sum(ar_fl_phi_true_age_subgrp)/fl_total_mass_18t65;
end
disp(['sum of ar_fl_p_agegrp_condi_18t65=' num2str(sum(ar_fl_p_agegrp_condi_18t65))]);
```

```
sum of ar_fl_p_agegrp_condi_18t65=1
```

```
disp(table(ar_fl_p_agegrp_condi_18t65, ar_it_lower, ar_it_higher));
```

ar_fl_p_agegrp_condi_18t65	ar_it_lower	ar_it_higher
0.18278	18	24
0.64041	25	54
0.17681	55	65