Life Cycle Dynamic Programming under with CARES Act Stimulus Checks

This is the example vignette for function: **snw_vfi_main_bisec_vec_stimulus** from the **PrjOptiSNW Package.** This function solves for policy function using Exact Vectorized Solution. Value in 2020 with surprise COVID unemployment Shock, with non-covid year Value as the continuation function, and provides households with stimulus checks specified in the 1st and 2nd round under actual Trump admin policies. The file focuses on the change in value function, asset choice, and consumption choice given a one period unemployment shock (that does not reappear in the future again). Solving this provides the distribution needed for the Biden checks, American Rescue Plan, problem.

Test SNW_VFI_MAIN_BISEC_VEC_STIMULUS

Solve the Regular Value and Also the Unemployment Value.

First, solve for value without unemployment issue (use the vectorized code that was previously tested):

```
mp_params = snw_mp_param('default_docdense');
mp_controls = snw_mp_control('default_test');
[V_VFI_ss,ap_VFI_ss,cons_VFI_ss,mp_valpol_more_ss] = ...
    snw_vfi_main_bisec_vec(mp_params, mp_controls);
```

```
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:83 of 82, time-this-age:8.1976
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:82 of 82, time-this-age:6.3715
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:81 of 82, time-this-age:6.1286
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:80 of 82, time-this-age:6.0961
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:79 of 82, time-this-age:6.1788
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:78 of 82, time-this-age:6.2505
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:77 of 82, time-this-age:6.1271
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:76 of 82, time-this-age:6.1446
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:75 of 82, time-this-age:5.8643
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:74 of 82, time-this-age:6.3012
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:73 of 82, time-this-age:5.9394
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:72 of 82, time-this-age:6.142
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:71 of 82, time-this-age:5.978
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:70 of 82, time-this-age:6.107
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:69 of 82, time-this-age:6.0351
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:68 of 82, time-this-age:6.1776
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:67 of 82, time-this-age:6.0961
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:66 of 82, time-this-age:6.0576
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:65 of 82, time-this-age:5.9533
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:64 of 82, time-this-age:6.2248
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:63 of 82, time-this-age:5.965
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:62 of 82, time-this-age:6.8146
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:61 of 82, time-this-age:7.1769
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:60 of 82, time-this-age:6.3121
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:59 of 82, time-this-age:6.3631
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:58 of 82, time-this-age:6.1827
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:57 of 82, time-this-age:6.0925
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:56 of 82, time-this-age:6.3425
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:55 of 82, time-this-age:6.3273
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:54 of 82, time-this-age:6.3841
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:53 of 82, time-this-age:6.6004
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:52 of 82, time-this-age:6.2408
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:51 of 82, time-this-age:6.2591
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:50 of 82, time-this-age:6.2645
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:49 of 82, time-this-age:6.3071
```

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SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:48 of 82, time-this-age:6.373
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:47 of 82, time-this-age:6.706
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:46 of 82, time-this-age:6.6956
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:45 of 82, time-this-age:6.4754
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:44 of 82, time-this-age:6.4592
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:43 of 82, time-this-age:6.5326
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:42 of 82, time-this-age:6.6336
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:41 of 82, time-this-age:6.485
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:40 of 82, time-this-age:7.2556
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:39 of 82, time-this-age:6.4432
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:38 of 82, time-this-age:6.3289
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:37 of 82, time-this-age:6.8039
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:36 of 82, time-this-age:6.5217
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:35 of 82, time-this-age:6.3529
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:34 of 82, time-this-age:6.8033
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:33 of 82, time-this-age:6.5971
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:32 of 82, time-this-age:6.3756
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:31 of 82, time-this-age:6.4397
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:30 of 82, time-this-age:6.534
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:29 of 82, time-this-age:6.5172
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:28 of 82, time-this-age:6.6958
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:27 of 82, time-this-age:7.0906
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:26 of 82, time-this-age:6.3312
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:25 of 82, time-this-age:6.6834
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:24 of 82, time-this-age:6.5892
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:23 of 82, time-this-age:6.7868
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:22 of 82, time-this-age:6.5247
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:21 of 82, time-this-age:6.5358
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:20 of 82, time-this-age:6.7883
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:19 of 82, time-this-age:6.3319
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:18 of 82, time-this-age:6.4524
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:17 of 82, time-this-age:6.4512
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:16 of 82, time-this-age:6.4475
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:15 of 82, time-this-age:6.4821
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:14 of 82, time-this-age:6.9806
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:13 of 82, time-this-age:6.744
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:12 of 82, time-this-age:6.353
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:11 of 82, time-this-age:6.3679
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:10 of 82, time-this-age:6.5458
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:9 of 82, time-this-age:6.3679
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:8 of 82, time-this-age:6.5428
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:7 of 82, time-this-age:6.8776
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:6 of 82, time-this-age:6.3248
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:5 of 82, time-this-age:6.2553
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:4 of 82, time-this-age:6.66
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:3 of 82, time-this-age:6.4982
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:2 of 82, time-this-age:6.3466
SNW_VFI_MAIN_BISEC_VEC: Finished Age Group:1 of 82, time-this-age:6.3944
Completed SNW_VFI_MAIN_BISEC_VEC;SNW_MP_PARAM=default_docdense;SNW_MP_CONTROL=default_test;time=535.4388
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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 xxxxxxxxxxxxxxxxx

	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 xxxxxxxxxxxxxxxxx

	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

Second, solve for the unemployment value, use the exact-bisec result code, call the snw_vfi_main_bisec_vec.m function with a third input of existing value. xi is the share of income lost during covid year given surprise covid shock, b is the share of income loss that is covered by unemployment insurance. xi=0.5 and b=0 means will lose 50 percent of income given COVID shocks, and the loss will not be covered at all by unemployment insurance. Calling the **snw_vfi_main_bisec_vec_stimulus** means households will receive positive amounts of stimulus given household structure (marital status and children count), as well as their total household income level.

```
mp_params('xi') = 0.5;
mp_params('b') = 0;
mp_params('a2_covidyr') = mp_params('a2_covidyr_manna_heaven');
[V_VFI_wthtrumpchk,ap_VFI_wthtrumpchecks,cons_VFI_wthtrumpchk,mp_valpol_more_wthtrumpchk] = ...
    snw_vfi_main_bisec_vec_stimulus(mp_params, mp_controls, V_VFI_ss);
```

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SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 1 of 82, time-this-age:6.62
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 2 of 82, time-this-age:6.6881
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 3 of 82, time-this-age:6.8137
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 4 of 82, time-this-age:6.5643
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 5 of 82, time-this-age:6.6084
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 6 of 82, time-this-age:6.658
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 7 of 82, time-this-age:6.8349
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SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 8 of 82, time-this-age:6.5825
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 9 of 82, time-this-age:6.5439
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 10 of 82, time-this-age:6.6846
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 11 of 82, time-this-age:6.5489
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 12 of 82, time-this-age:6.6835
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 13 of 82, time-this-age:7.0851
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 14 of 82, time-this-age:6.7157
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 15 of 82, time-this-age:6.6425
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 16 of 82, time-this-age:6.8711
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 17 of 82, time-this-age:6.746
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 18 of 82, time-this-age:6.6717
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 19 of 82, time-this-age:6.9565
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 20 of 82, time-this-age:7.0231
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 21 of 82, time-this-age:6.6252
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 22 of 82, time-this-age:6.5266
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 23 of 82, time-this-age:6.6398
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 24 of 82, time-this-age:6.6428
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 25 of 82, time-this-age:6.5884
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 26 of 82, time-this-age:6.9986
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 27 of 82, time-this-age:6.58
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 28 of 82, time-this-age:6.3892
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 29 of 82, time-this-age:6.8717
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 30 of 82, time-this-age:6.5103
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 31 of 82, time-this-age:6.7253
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 32 of 82, time-this-age:7.0548
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 33 of 82, time-this-age:6.7513
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 34 of 82, time-this-age:6.7784
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 35 of 82, time-this-age:6.6639
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 36 of 82, time-this-age:6.8596
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 37 of 82, time-this-age:6.6734
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 38 of 82, time-this-age:6.5029
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 39 of 82, time-this-age:7.02
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 40 of 82, time-this-age:6.6714
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 41 of 82, time-this-age:6.5598
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 42 of 82, time-this-age:6.7617
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 43 of 82, time-this-age:6.5979
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 44 of 82, time-this-age:6.7787
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 45 of 82, time-this-age:7.1311
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 46 of 82, time-this-age:6.6511
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 47 of 82, time-this-age:6.826
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 48 of 82, time-this-age:6.6529
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 49 of 82, time-this-age:6.447
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 50 of 82, time-this-age:6.5167
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 51 of 82, time-this-age:6.5401
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 52 of 82, time-this-age:6.722
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 53 of 82, time-this-age:6.5741
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 54 of 82, time-this-age:6.9319
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 55 of 82, time-this-age:7.182
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 56 of 82, time-this-age:7.6984
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 57 of 82, time-this-age:6.4441
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 58 of 82, time-this-age:6.891
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 59 of 82, time-this-age:7.0068
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 60 of 82, time-this-age:7.0328
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 61 of 82, time-this-age:6.8954
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 62 of 82, time-this-age:6.9436
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 63 of 82, time-this-age:6.983
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 64 of 82, time-this-age:6.9707
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 65 of 82, time-this-age:6.9944
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 66 of 82, time-this-age:7.3946
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 67 of 82, time-this-age:7.0114
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 68 of 82, time-this-age:7.109
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 69 of 82, time-this-age:7.0221
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 70 of 82, time-this-age:7.0655
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 71 of 82, time-this-age:6.8624
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 72 of 82, time-this-age:6.8953
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```
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 73 of 82, time-this-age:6.9772
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 74 of 82, time-this-age:6.9265
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 75 of 82, time-this-age:6.9556
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 76 of 82, time-this-age:6.8726
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 77 of 82, time-this-age:7.1171
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 78 of 82, time-this-age:7.0941
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 79 of 82, time-this-age:6.6593
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 80 of 82, time-this-age:6.504
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 81 of 82, time-this-age:6.3068
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 82 of 82, time-this-age:6.6383
SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock: Age 83 of 82, time-this-age:8.1596
Completed SNW_VFI_MAIN_BISEC_VEC 1 Period Unemp Shock;SNW_MP_PARAM=default_docdense;SNW_MP_CONTROL=default_test;time
----------------------------------------
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	-8.759e+08	-20.044	27.874	-1.3907
ap_VFI	2	2	6	4.37e+07	83	5.265e+05	1.3809e+09	31.599	36.658	1.1601
cons_VFI	3	3	6	4.37e+07	83	5.265e+05	2.105e+08	4.8169	8.3229	1.7278

xxx TABLE:V_VFI xxxxxxxxxxxxxxxxx

	c1	c2	c3	c4	c5	c526496	c526497	c526498	c526499
r1	-369.35	-369.07	-367.11	-361.97	-353.39	-6.8096	-6.6548	-6.5005	-6.3459
r2	-357.14	-356.86	-354.97	-349.98	-341.85	-6.618	-6.4683	-6.3187	-6.1683
r3	-345.28	-344.99	-343.18	-338.45	-330.78	-6.4227	-6.278	-6.1329	-5.9865
r4	-334.13	-333.86	-332.12	-327.68	-320.43	-6.2297	-6.0896	-5.9486	-5.8058
r5	-324.01	-323.75	-322.06	-317.88	-310.99	-6.0467	-5.9107	-5.7733	-5.6336
r79	-13.388	-13.378	-13.307	-13.12	-12.781	-0.2305	-0.21962	-0.20938	-0.19976
r80	-11.919	-11.908	-11.837	-11.653	-11.317	-0.17582	-0.16751	-0.15967	-0.15229
r81	-10.133	-10.122	-10.051	-9.8679	-9.5372	-0.12032	-0.11462	-0.10926	-0.10422
r82	-7.7774	-7.767	-7.6957	-7.5131	-7.1868	-0.066524	-0.063355	-0.060398	-0.057602
r83	-5.0665	-5.0529	-4.9595	-4.7226	-4.3206	-0.021146	-0.020134	-0.019185	-0.018294

xxx TABLE:ap_VFI xxxxxxxxxxxxxxxxx

	c1	c2	c3	c4	c5	c526496	c526497	c526498	c52649
r1	0.0041199	0.0043268	0.0080703	0.013905	0.032959	110.07	115.71	121.57	127.63
r2	0.0041199	0.0041199	0.0070902	0.013905	0.032284	110.04	115.69	121.55	127.63
r3	0.0041199	0.0041199	0.0054862	0.013905	0.030609	110	115.66	121.54	127.64
r4	0.0041199	0.0041199	0.0046552	0.013905	0.029711	110.29	115.97	121.86	127.98
r5	0.0035447	0.0040795	0.0041199	0.013905	0.028846	110.59	116.28	122.19	128.33
r79	0	0	0.00041185	0.0041199	0.013905	81.091	85.231	89.301	93.347
r80	0	0	0	0.0041199	0.013905	75.865	79.539	83.281	87.018
r81	0	0	0	0.0020033	0.013501	67.78	70.52	73.459	76.816
r82	0	0	0	0.00051498	0.010558	50.126	53.467	56.104	57.737
r83	0	0	0	0	0	0	0	0	0

xxx TABLE:cons_VFI xxxxxxxxxxxxxxxxx

	c1	c2	c3	c4	c5	c526496	c526497	c526498	c526499	c
r1	0.043302	0.04363	0.04363	0.047957	0.048689	9.4621	9.6396	9.8066	9.9533	
r2	0.043302	0.043837	0.04461	0.047957	0.049364	9.6318	9.8014	9.9571	10.088	1
r3	0.043302	0.043837	0.046214	0.047957	0.051039	9.8074	9.9664	10.108	10.22	1
r4	0.044033	0.044568	0.047776	0.048687	0.052666	9.971	10.118	10.244	10.339	1
r5	0.04532	0.04532	0.049023	0.049398	0.054241	10.123	10.258	10.369	10.446	1
r79	0.22617	0.2267	0.23002	0.23643	0.24634	34.787	36.471	38.418	40.587	4
r80	0.22617	0.2267	0.23043	0.23643	0.24634	40.001	42.15	44.426	46.904	4
r81	0.22617	0.2267	0.23043	0.23854	0.24675	48.074	51.158	54.236	57.094	5

```
r82     0.22617     0.2267     0.23043     0.24003     0.24969     65.719     68.202     71.583     76.164     7
r83     0.19737     0.19791    0.20163     0.21175     0.23145     115.84     121.66     127.68     133.89     1
```

Difference Between Value and Choices In Unemployment and Future Periods

```
V_VFI_wthtrumpchk_drop = V_VFI_ss - V_VFI_wthtrumpchk;
ap_VFI_wthtrumpchk_drop = ap_VFI_ss - ap_VFI_wthtrumpchecks;
cons_VFI_wthtrumpchk_drop = cons_VFI_ss - cons_VFI_wthtrumpchk;
```

Define Parameter Frames

Define the matrix dimensions names and dimension vector values. Policy and Value Functions share the same ND dimensional structure.

```
% Grids:
age_grid = 18:100;
agrid = mp_params('agrid')';
eta_H_grid = mp_params('eta_H_grid')';
eta_S_grid = mp_params('eta_S_grid')';
ar_st_eta_HS_grid = string(cellstr([num2str(eta_H_grid', 'hz=%3.2f;'), num2str(eta_S_grid', 'wz
edu_grid = [0,1];
marry_grid = [0,1];
kids_grid = (1:1:mp_params('n_kidsgrid'))';
% NaN(n_jgrid,n_agrid,n_etagrid,n_educgrid,n_marriedgrid,n_kidsgrid);
cl_mp_datasetdesc = {};
cl_mp_datasetdesc{1} = containers.Map({'name', 'labval'}, {'age', age_grid});
cl_mp_datasetdesc{2} = containers.Map({'name', 'labval'}, {'savings', agrid});
cl_mp_datasetdesc{3} = containers.Map({'name', 'labval'}, {'eta', 1:length(eta_H_grid)});
cl_mp_datasetdesc{4} = containers.Map({'name', 'labval'}, {'edu', edu_grid});
cl_mp_datasetdesc{5} = containers.Map({'name', 'labval'}, {'marry', marry_grid});
cl_mp_datasetdesc{6} = containers.Map({'name', 'labval'}, {'kids', kids_grid});
```

Analyze Savings and Shocks

First, analyze Savings Levels and Shocks, Aggregate Over All Others, and do various other calculations.

```
% Generate some Data
mp_support_graph = containers.Map('KeyType', 'char', 'ValueType', 'any');
mp_support_graph('cl_st_xtitle') = {'Savings States, a'};
mp_support_graph('st_legend_loc') = 'eastoutside';
mp_support_graph('bl_graph_logy') = true; % do not log
mp_support_graph('it_legend_select') = 15; % how many shock legends to show
mp_support_graph('cl_colors') = 'jet';
```

MEAN(VAL(A,Z) - VAL(A,Z|CARESActChecks)), MEAN(AP(A,Z) - AP(A,Z|CARESActChecks)), MEAN(C(A,Z) - C(A,Z|CARESActChecks))

Tabulate value and policies along savings and shocks:

```
% Set
% NaN(n_jgrid,n_agrid,n_etagrid,n_educgrid,n_marriedgrid,n_kidsgrid);
ar_permute = [1,4,5,6,3,2];
```

```
% Value Function
tb_az_v = ff_summ_nd_array("MEAN(v(A,Z) - v(A,Z|CARESActChecks))", V_VFI_wthtrumpchk_drop, true
```

```
xxx  MEAN(v(A,Z) - v(A,Z|CARESActChecks))  xxxxxxxxxxxxxxxxxxxxxxxxxx
    group     savings      mean_eta_1     mean_eta_2     mean_eta_3     mean_eta_4     mean_eta_5     mean_eta_6
    _____    _________    __________     __________     __________     __________     __________     __________

      1              0        -9.0028        -8.1198        -7.2767        -6.4867        -5.7583         -5.094
      2      0.00051498        -8.9164        -8.0468         -7.215        -6.4346        -5.7143         -5.057
      3       0.0041199        -8.3741        -7.5866        -6.8239        -6.1025         -5.433        -4.8192
      4        0.013905        -7.2663        -6.6272         -5.996          -5.39        -4.8215        -4.2969
      5        0.032959        -5.8672         -5.393        -4.9128        -4.4439        -3.9988        -3.5836
      6        0.064373         -4.573          -4.23         -3.875        -3.5227         -3.184        -2.8651
```

```
% Aprime Choice
tb_az_ap = ff_summ_nd_array("MEAN(AP(A,Z) - AP(A,Z|CARESActChecks))", ap_VFI_wthtrumpchk_drop,
```

```
xxx  MEAN(AP(A,Z) - AP(A,Z|CARESActChecks))  xxxxxxxxxxxxxxxxxxxxxxxxxx
    group     savings      mean_eta_1     mean_eta_2     mean_eta_3     mean_eta_4     mean_eta_5     mean_eta_6     mea
    _____    _________    __________     __________     __________     __________     __________     __________     ___

      1              0     -0.0099485     -0.0098151     -0.0095875     -0.0092979     -0.0089799     -0.0086178     -0.
      2      0.00051498      -0.010098     -0.0099646     -0.0097333     -0.0094339     -0.0091155     -0.0087567     -0.
      3       0.0041199      -0.011196      -0.011008      -0.010717      -0.010374     -0.0099917     -0.0096396     -0.
      4        0.013905       -0.01318      -0.012956      -0.012613      -0.012204      -0.011698      -0.011142      -
      5        0.032959      -0.016123      -0.015733      -0.015207      -0.014591       -0.01396       -0.01337      -0
      6        0.064373      -0.020802      -0.020181      -0.019513      -0.018835      -0.018115      -0.017346      -0
```

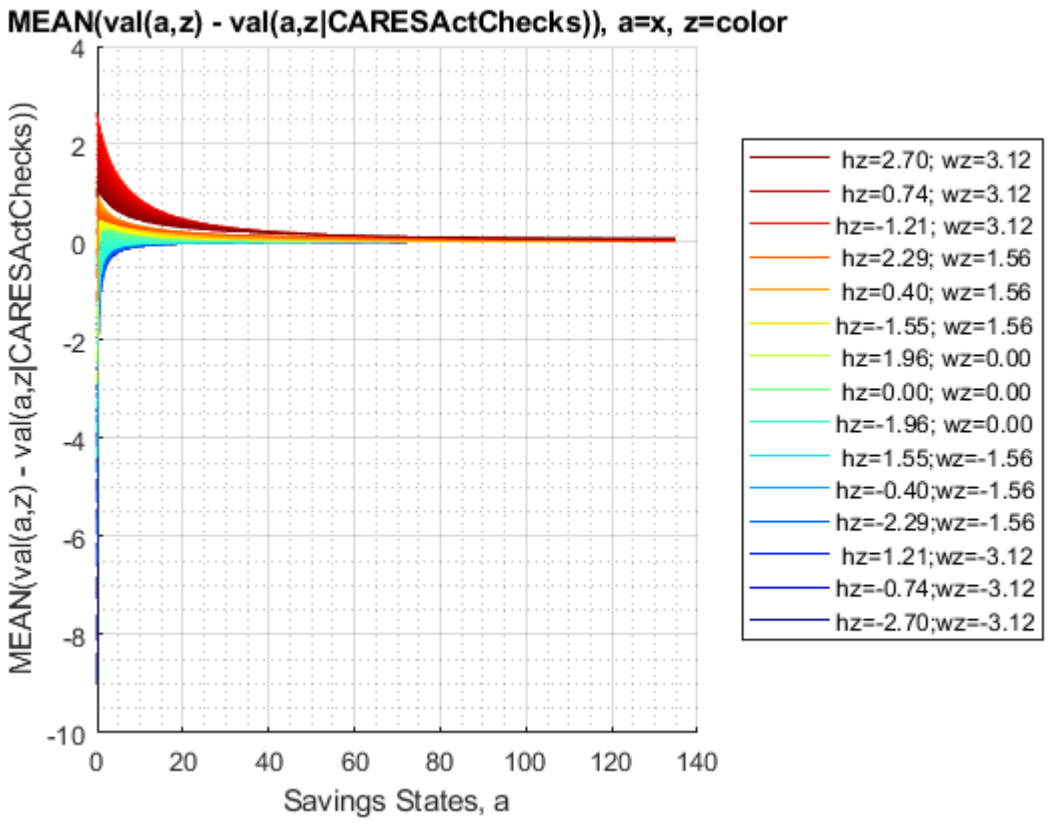
```
% Consumption Choices
tb_az_c = ff_summ_nd_array("MEAN(C(A,Z) - C(A,Z|CARESActChecks))", cons_VFI_wthtrumpchk_drop, t
```

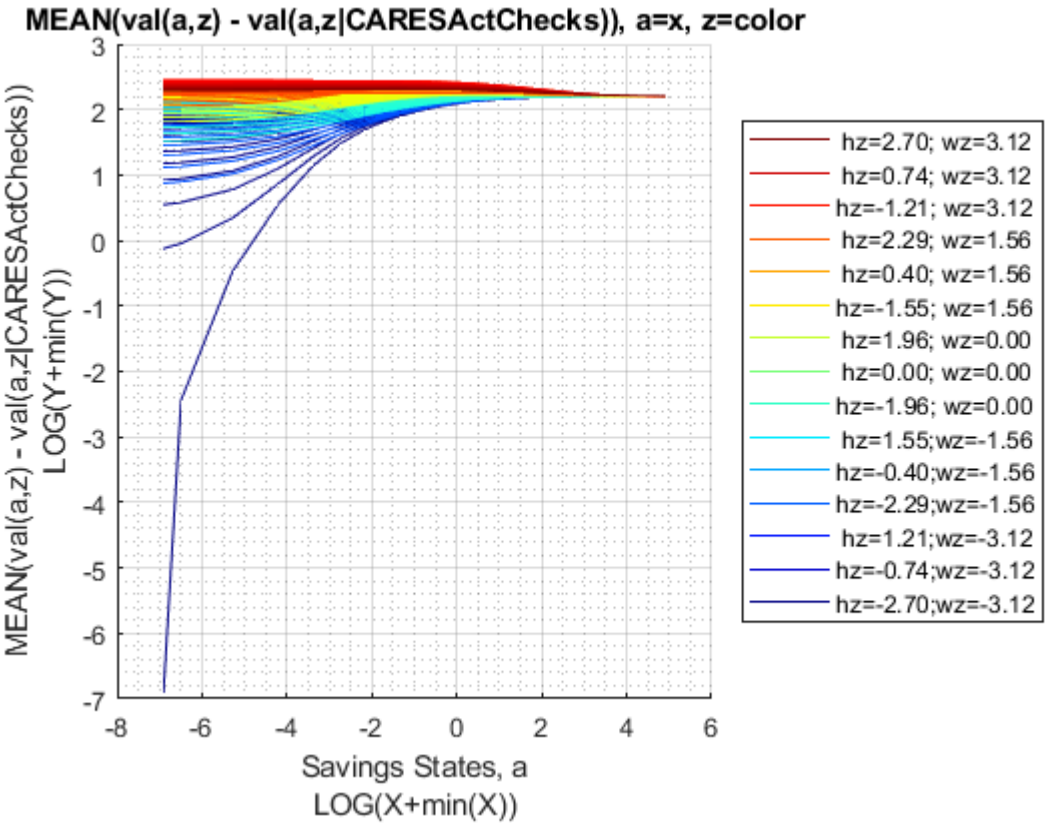
```
xxx  MEAN(C(A,Z) - C(A,Z|CARESActChecks))  xxxxxxxxxxxxxxxxxxxxxxxxxx
    group     savings      mean_eta_1     mean_eta_2     mean_eta_3     mean_eta_4     mean_eta_5     mean_eta_6
    _____    _________    __________     __________     __________     __________     __________     __________

      1              0      -0.048192      -0.047194      -0.046217      -0.045225      -0.044179       -0.04309
      2      0.00051498      -0.048043      -0.047044      -0.046071      -0.045089      -0.044044      -0.042952
      3       0.0041199      -0.046948      -0.046003       -0.04509      -0.044152       -0.04317      -0.042072
      4        0.013905       -0.04497      -0.044062      -0.043201      -0.042328      -0.041472      -0.040577
      5        0.032959       -0.04204      -0.041299       -0.04062      -0.039956      -0.039223      -0.038363
      6        0.064373      -0.037382      -0.036872      -0.036337      -0.035734      -0.035092      -0.034411
```

Graph Mean Values Change:

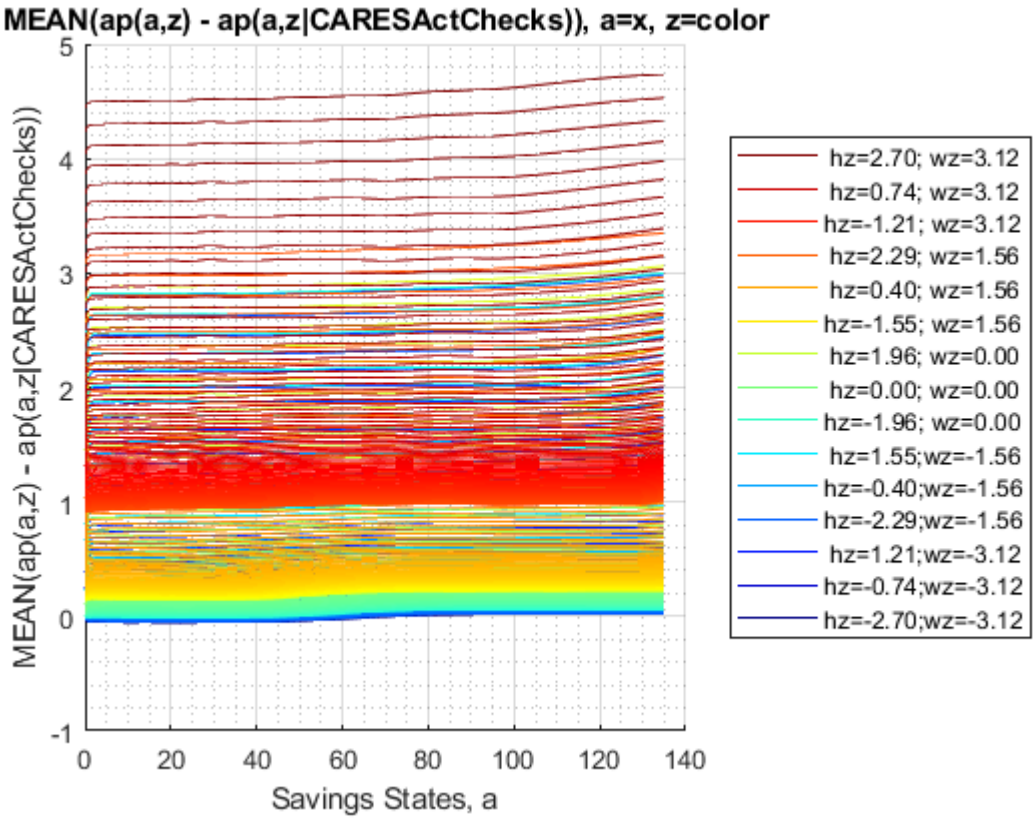
```
mp_support_graph('cl_st_graph_title') = {'MEAN(val(a,z) - val(a,z|CARESActChecks)), a=x, z=colo
mp_support_graph('cl_st_ytitle') = {'MEAN(val(a,z) - val(a,z|CARESActChecks))'};
ff_graph_grid((tb_az_v{1:end, 3:end})', ar_st_eta_HS_grid, agrid, mp_support_graph);
```

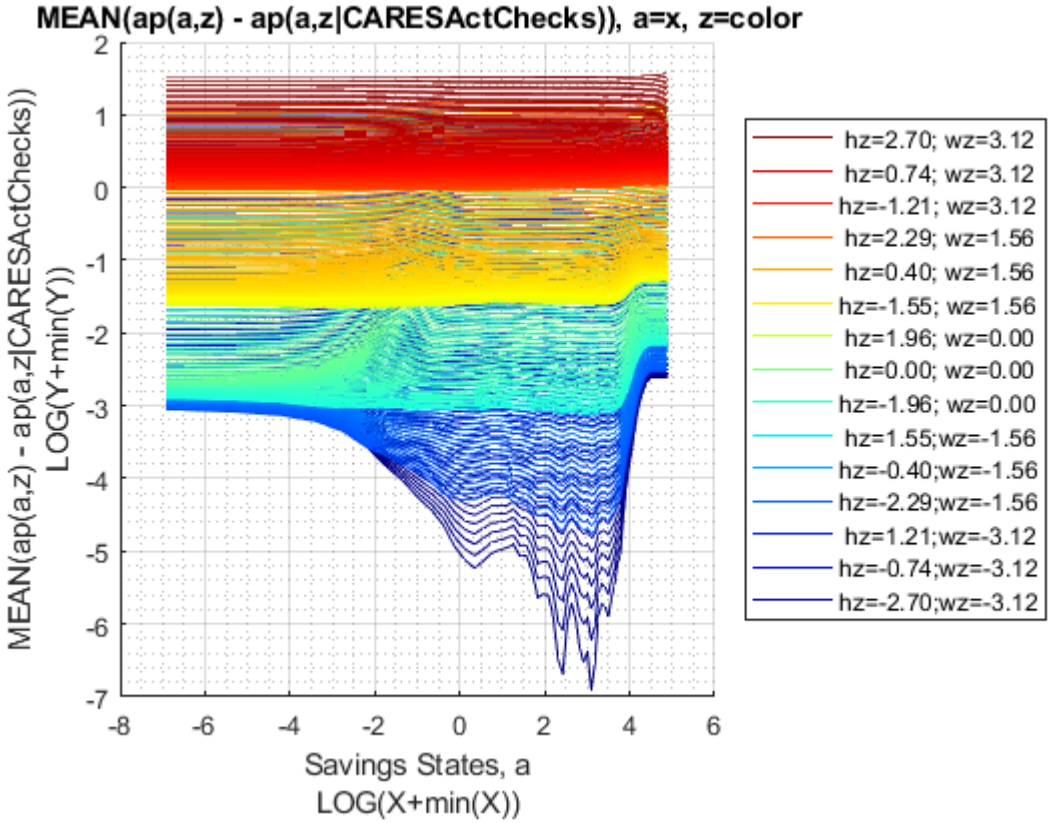




Graph Mean Savings Choices Change:

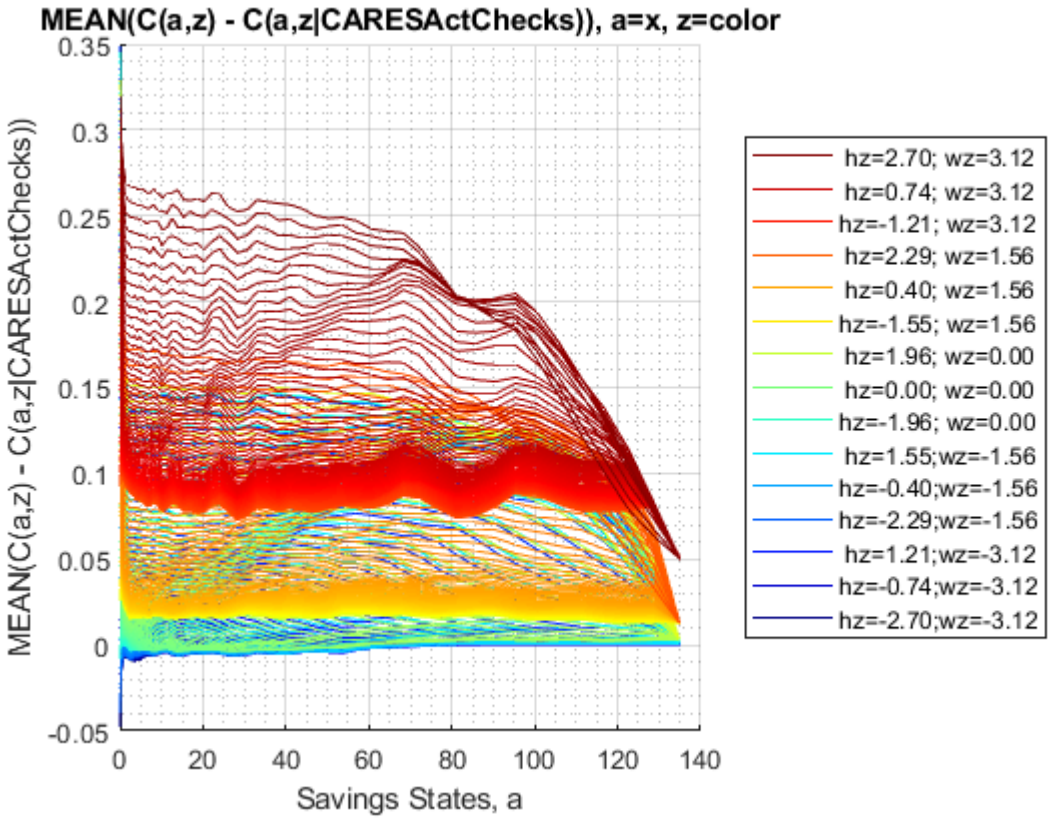
```
mp_support_graph('cl_st_graph_title') = {'MEAN(ap(a,z) - ap(a,z|CARESActChecks)), a=x, z=color'
mp_support_graph('cl_st_ytitle') = {'MEAN(ap(a,z) - ap(a,z|CARESActChecks))'};
ff_graph_grid((tb_az_ap{1:end, 3:end})', ar_st_eta_HS_grid, agrid, mp_support_graph);
```

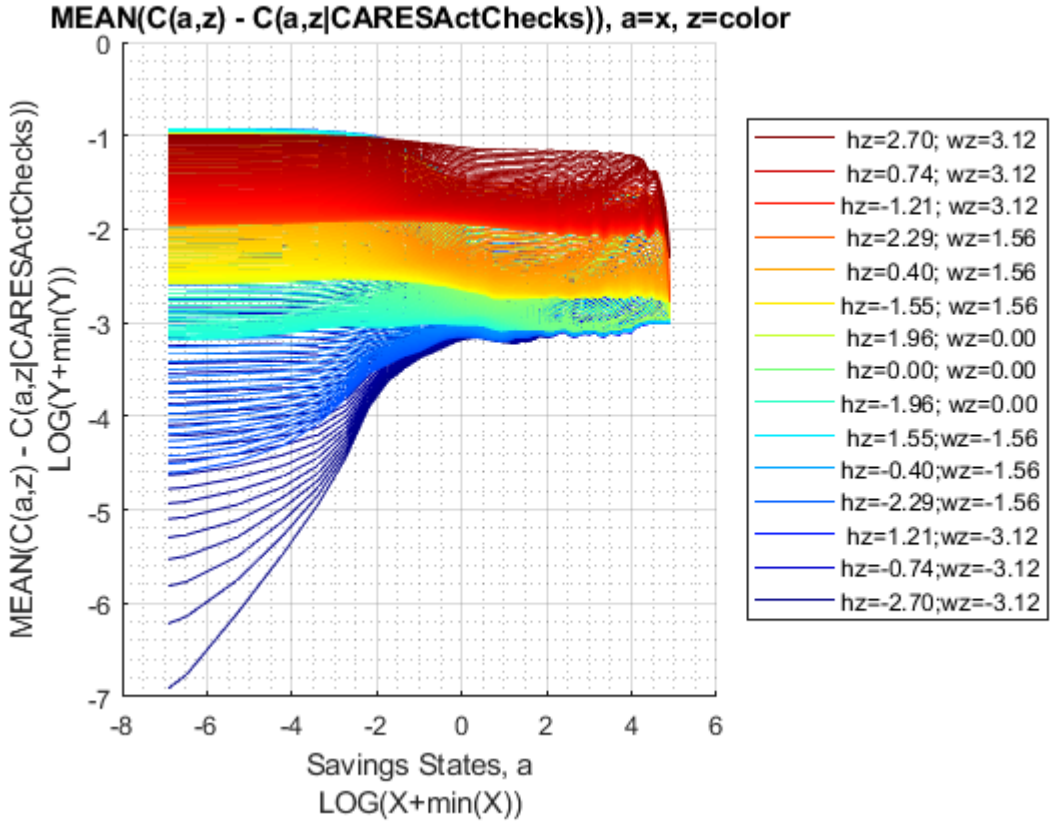




Graph Mean Consumption Change:

```
mp_support_graph('cl_st_graph_title') = {'MEAN(C(a,z) - C(a,z|CARESActChecks)), a=x, z=color'};
mp_support_graph('cl_st_ytitle') = {'MEAN(C(a,z) - C(a,z|CARESActChecks))'};
ff_graph_grid((tb_az_c{1:end, 3:end})', ar_st_eta_HS_grid, agrid, mp_support_graph);
```





Analyze Kids and Marriage and Age

Aggregating over education, savings, and shocks, what are the differential effects of Marriage and Age.

```
% Generate some Data
mp_support_graph = containers.Map('KeyType', 'char', 'ValueType', 'any');
ar_row_grid = [...
    "k0M0", "K1M0", "K2M0", "K3M0", "K4M0", ...
    "k0M1", "K1M1", "K2M1", "K3M1", "K4M1"];
mp_support_graph('cl_st_xtitle') = {'Age'};
mp_support_graph('st_legend_loc') = 'best';
mp_support_graph('bl_graph_logy') = true; % do not log
mp_support_graph('st_rounding') = '6.2f'; % format shock legend
mp_support_graph('cl_scatter_shapes') = {...
    'o', 'd' ,'s', 'x', '*', ...
    'o', 'd', 's', 'x', '*'};
mp_support_graph('cl_colors') = {...
    'red', 'red', 'red', 'red', 'red'...
    'blue', 'blue', 'blue', 'blue', 'blue'};
```

MEAN(V(KM,J) - V(KM,J | CARESActChecks)), MEAN(ap(KM,J) - ap(KM,J | CARESActChecks)), MEAN(c(KM,J) - c(KM,J | CARESActChecks))

Tabulate value and policies:

```
% Set
% NaN(n_jgrid,n_agrid,n_etagrid,n_educgrid,n_marriedgrid,n_kidsgrid);
ar_permute = [2,3,4,1,6,5];
```

```
% Value Function
tb_az_v = ff_summ_nd_array("MEAN(V(KM,J) - V(KM,J | CARESActChecks))", V_VFI_wthtrumpchk_drop,
```

```
xxx  MEAN(V(KM,J) - V(KM,J | CARESActChecks))  xxxxxxxxxxxxxxxxxxxxxxxxx
```

group	kids	marry	mean_age_18	mean_age_19	mean_age_20	mean_age_21	mean_age_22	mean_age_23
1	1	0	0.2332	0.22485	0.21742	0.22953	0.23963	0.2482
2	2	0	0.066539	0.065877	0.068247	0.098285	0.12333	0.14437
3	3	0	-0.16926	-0.15841	-0.1423	-0.093192	-0.051804	-0.016694
4	4	0	-0.44442	-0.42121	-0.39008	-0.32042	-0.26131	-0.21085
5	5	0	-0.73932	-0.70328	-0.65682	-0.56749	-0.49136	-0.42608
6	1	1	0.54283	0.53403	0.52485	0.52685	0.52859	0.53037
7	2	1	0.572	0.56458	0.55612	0.56246	0.56751	0.57147
8	3	1	0.52502	0.52141	0.51661	0.52951	0.5404	0.54966
9	4	1	0.46008	0.46188	0.46209	0.48277	0.50057	0.51604
10	5	1	0.29213	0.30189	0.31023	0.34193	0.36924	0.39297

```
% Aprime Choice
tb_az_ap = ff_summ_nd_array("MEAN(ap(KM,J) - ap(KM,J | CARESActChecks))", ap_VFI_wthtrumpchk_dr
```

```
xxx  MEAN(ap(KM,J) - ap(KM,J | CARESActChecks))  xxxxxxxxxxxxxxxxxxxxxxxxx
```

group	kids	marry	mean_age_18	mean_age_19	mean_age_20	mean_age_21	mean_age_22	mean_age_23
1	1	0	0.53409	0.53149	0.52842	0.56711	0.60568	0.64375
2	2	0	0.51704	0.51346	0.50927	0.54742	0.58546	0.62317
3	3	0	0.50183	0.49768	0.49316	0.53101	0.56887	0.6064
4	4	0	0.48856	0.48424	0.47955	0.51731	0.55508	0.59256
5	5	0	0.47499	0.47072	0.46598	0.50375	0.54161	0.57921
6	1	1	1.1088	1.1527	1.1974	1.2901	1.3837	1.477
7	2	1	1.0065	1.0431	1.0802	1.164	1.2484	1.3325
8	3	1	0.92804	0.96014	0.99224	1.0702	1.1489	1.2271
9	4	1	0.84205	0.86965	0.89728	0.97107	1.0451	1.1185
10	5	1	0.71408	0.73273	0.7514	0.8152	0.87929	0.94336

```
% Consumption Choices
tb_az_c = ff_summ_nd_array("MEAN(c(KM,J) - c(KM,J | CARESActChecks))", cons_VFI_wthtrumpchk_dro
```

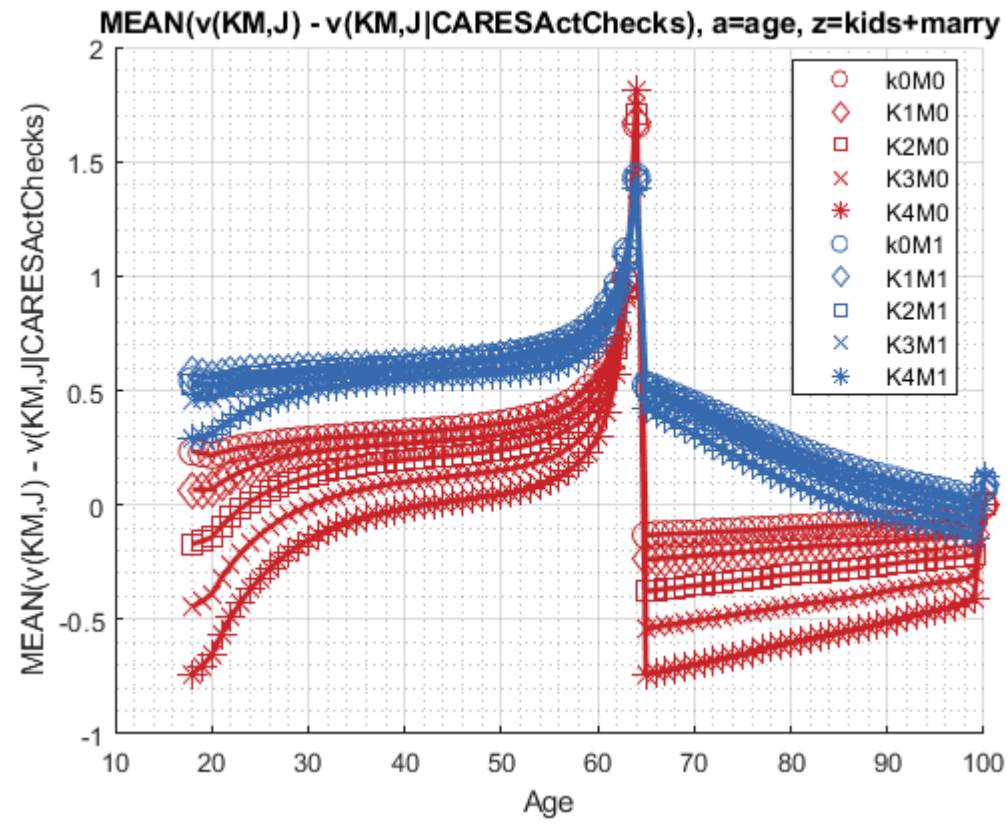
```
xxx  MEAN(c(KM,J) - c(KM,J | CARESActChecks))  xxxxxxxxxxxxxxxxxxxxxxxxx
```

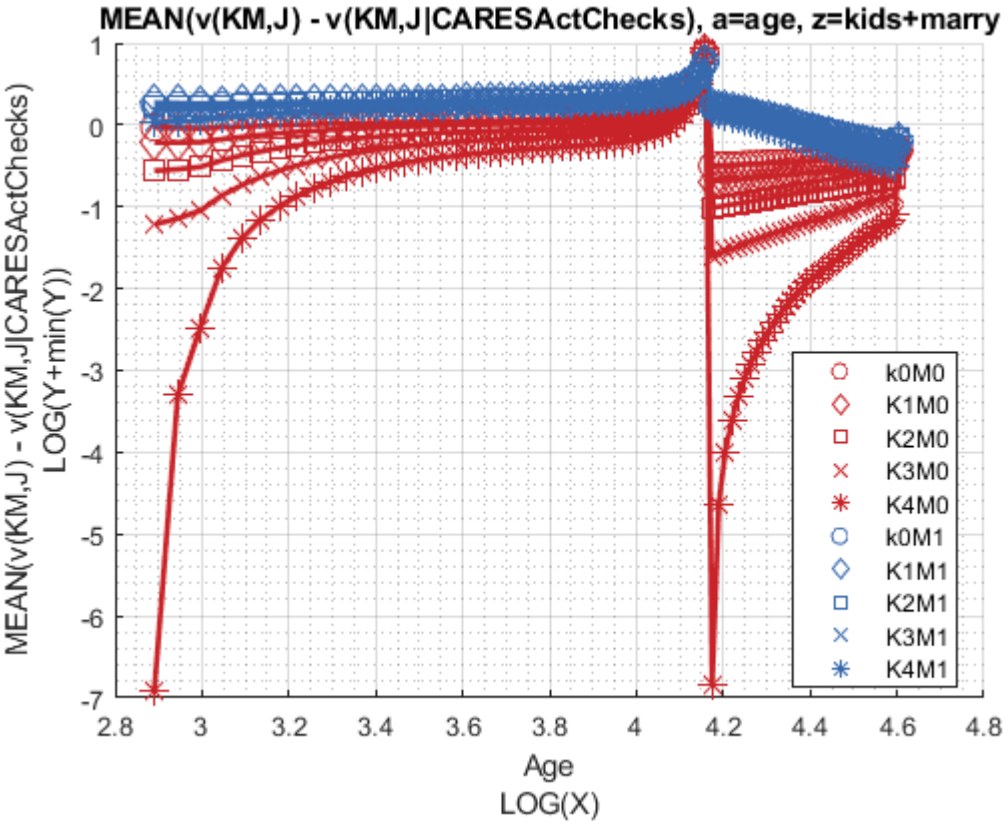
group	kids	marry	mean_age_18	mean_age_19	mean_age_20	mean_age_21	mean_age_22	mean_age_23
1	1	0	0.047456	0.05006	0.053131	0.053501	0.053678	0.053743
2	2	0	0.051258	0.054838	0.059034	0.060117	0.06099	0.061561
3	3	0	0.055768	0.059917	0.064439	0.065978	0.067166	0.068062
4	4	0	0.057894	0.062211	0.066905	0.068696	0.070118	0.071197
5	5	0	0.059903	0.064171	0.068906	0.070851	0.07233	0.073433
6	1	1	0.0854	0.090837	0.096389	0.10046	0.10399	0.10726
7	2	1	0.079182	0.084761	0.090437	0.095109	0.099255	0.10313
8	3	1	0.078652	0.083563	0.089111	0.093893	0.098067	0.10205
9	4	1	0.082412	0.086456	0.091037	0.093958	0.096652	0.099456
10	5	1	0.085584	0.089889	0.094581	0.097555	0.10014	0.10219

Graph Mean Values Change:

```
mp_support_graph('cl_st_graph_title') = {'MEAN(v(KM,J) - v(KM,J|CARESActChecks), a=age, z=kids+
mp_support_graph('cl_st_ytitle') = {'MEAN(v(KM,J) - v(KM,J|CARESActChecks)'};
```

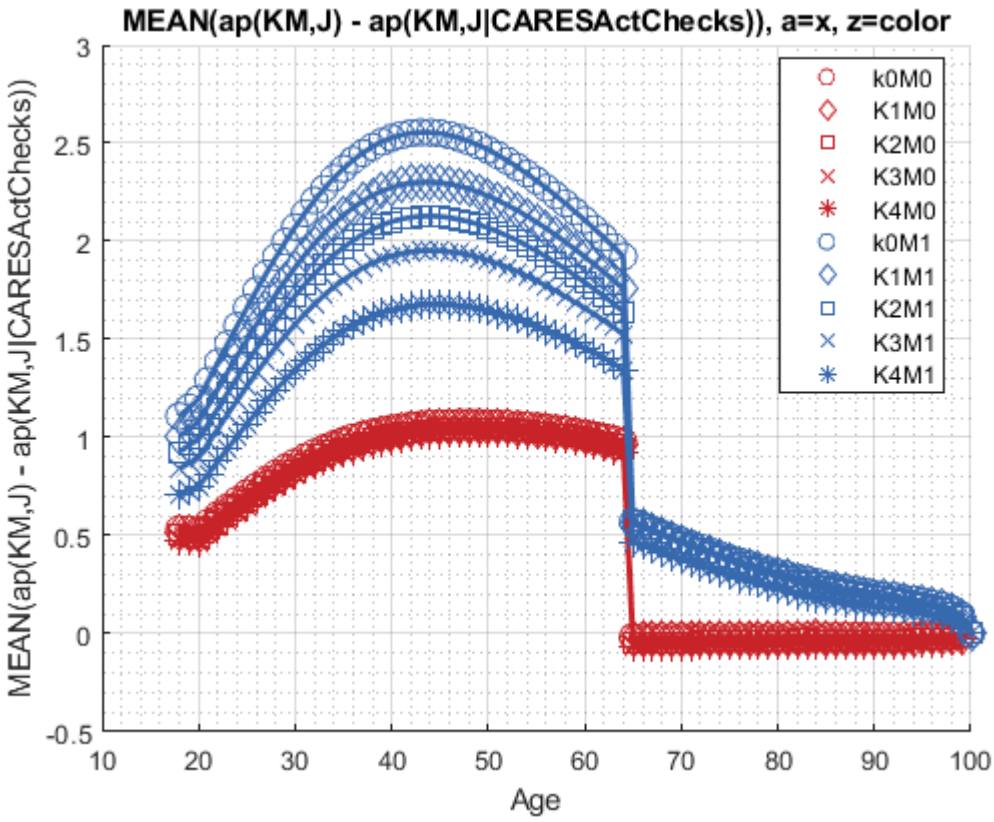
```
ff_graph_grid((tb_az_v{1:end, 4:end}), ar_row_grid, age_grid, mp_support_graph);
```

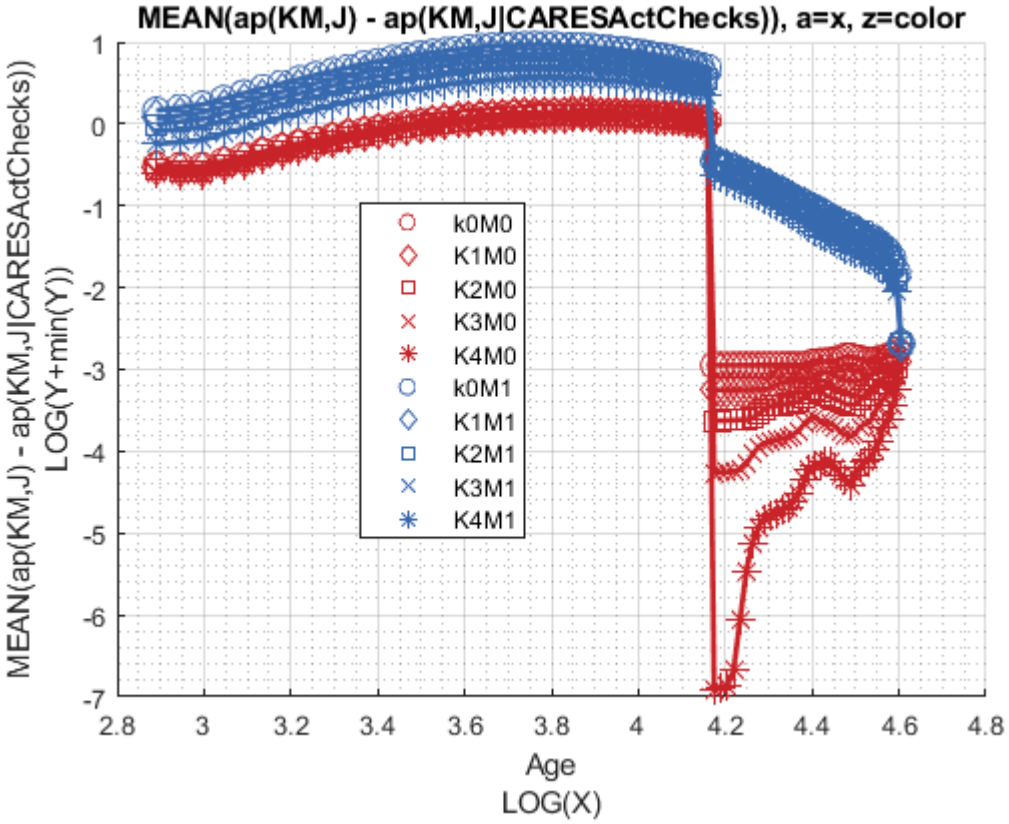




Graph Mean Savings Choices Change:

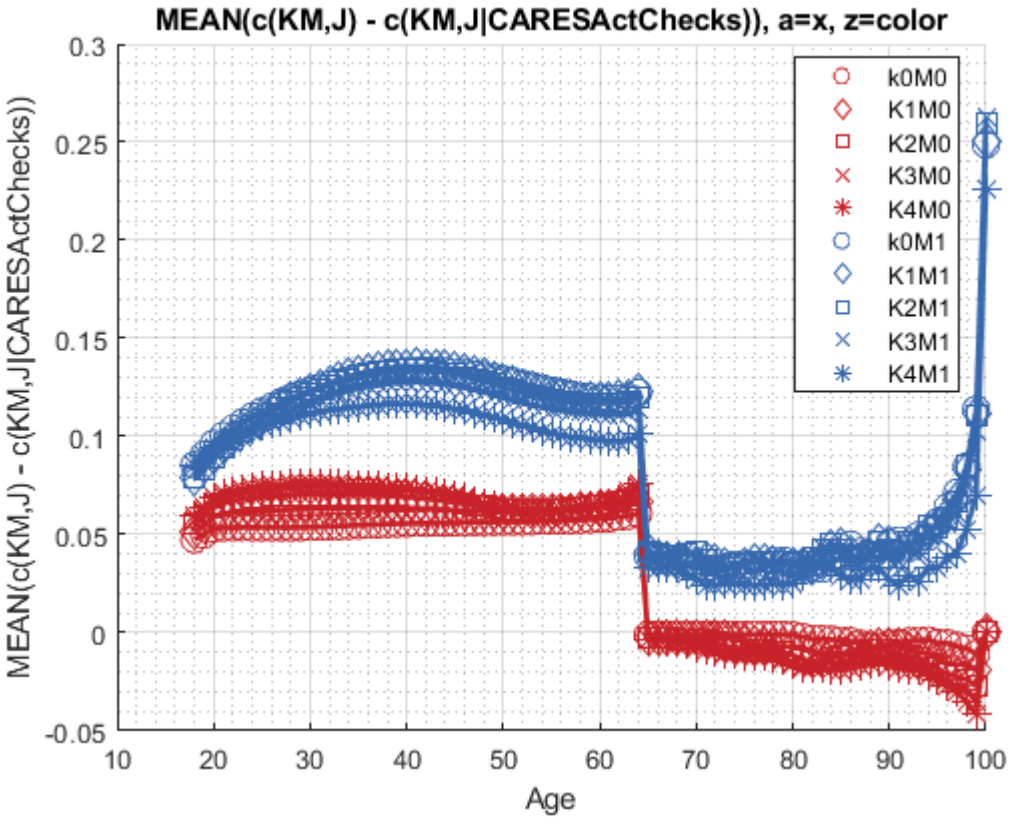
```
mp_support_graph('cl_st_graph_title') = {'MEAN(ap(KM,J) - ap(KM,J|CARESActChecks)), a=x, z=colo
mp_support_graph('cl_st_ytitle') = {'MEAN(ap(KM,J) - ap(KM,J|CARESActChecks))'};
ff_graph_grid((tb_az_ap{1:end, 4:end}), ar_row_grid, age_grid, mp_support_graph);
```

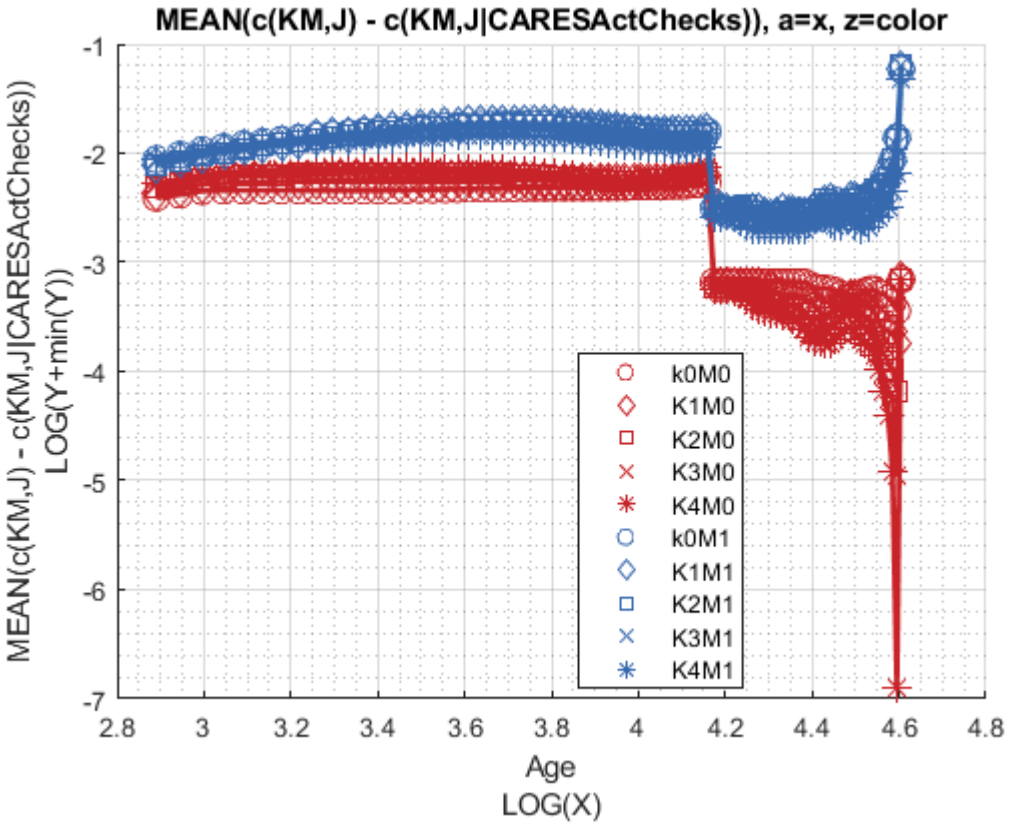




Graph Mean Consumption Change:

```
mp_support_graph('cl_st_graph_title') = {'MEAN(c(KM,J) - c(KM,J|CARESActChecks)), a=x, z=color'
mp_support_graph('cl_st_ytitle') = {'MEAN(c(KM,J) - c(KM,J|CARESActChecks))'};
ff_graph_grid((tb_az_c{1:end, 4:end}), ar_row_grid, age_grid, mp_support_graph);
```





Analyze Education and Marriage and Age

Aggregating over education, savings, and shocks, what are the differential effects of Marriage and Age.

```
% Generate some Data
mp_support_graph = containers.Map('KeyType', 'char', 'ValueType', 'any');
ar_row_grid = ["E0M0", "E1M0", "E0M1", "E1M1"];
mp_support_graph('cl_st_xtitle') = {'Age'};
mp_support_graph('st_legend_loc') = 'best';
mp_support_graph('bl_graph_logy') = true; % do not log
mp_support_graph('st_rounding') = '6.2f'; % format shock legend
mp_support_graph('cl_scatter_shapes') = {'*', 'p', '*','p' };
mp_support_graph('cl_colors') = {'red', 'red', 'blue', 'blue'};
```

MEAN(v(EKM,J) - v(EKM,J|CARESActChecks)), MEAN(ap(EM,J) - ap(EM,J|CARESActChecks)), MEAN(c(EM,J) - c(EM,J|CARESActChecks))

Tabulate value and policies:

```
% Set
% NaN(n_jgrid,n_agrid,n_etagrid,n_educgrid,n_marriedgrid,n_kidsgrid);
ar_permute = [2,3,6,1,4,5];
% Value Function
tb_az_v = ff_summ_nd_array("MEAN(v(EM,J) - v(EM,J|CARESActChecks))", V_VFI_wthtrumpchk_drop, tr
```

```
xxx  MEAN(v(EM,J) - v(EM,J|CARESActChecks))  xxxxxxxxxxxxxxxxxxxxxxxxxxx
    group    edu    marry    mean_age_18    mean_age_19    mean_age_20    mean_age_21    mean_age_22    mean_age_23
    _____    ___    _____    ___________    ___________    ___________    ___________    ___________    ___________

      1       0       0       -0.20644       -0.19866       -0.18731         -0.152        -0.12059      -0.092576
      2       1       0       -0.21487       -0.19821       -0.17411       -0.10932       -0.056018       -0.01185
      3       0       1        0.49975        0.50183        0.50278        0.51591        0.52735        0.53745
      4       1       1        0.45707        0.45169        0.44517         0.4615        0.47518        0.48675
```

```
% Aprime Choice
tb_az_ap = ff_summ_nd_array("MEAN(ap(EM,J) - ap(EM,J|CARESActChecks))", ap_VFI_wthtrumpchk_drop
```

```
xxx  MEAN(ap(EM,J) - ap(EM,J|CARESActChecks))  xxxxxxxxxxxxxxxxxxxxxxxxxxx
    group    edu    marry    mean_age_18    mean_age_19    mean_age_20    mean_age_21    mean_age_22    mean_age_23
    _____    ___    _____    ___________    ___________    ___________    ___________    ___________    ___________

      1       0       0        0.51372        0.51186        0.50965        0.53259        0.55496        0.57676
      2       1       0        0.49288        0.48717         0.4809        0.53405        0.58772        0.64127
      3       0       1        0.88501        0.91449        0.94426         1.0019         1.0594         1.1163
      4       1       1        0.95477        0.98885         1.0231         1.1223         1.2227         1.3231
```

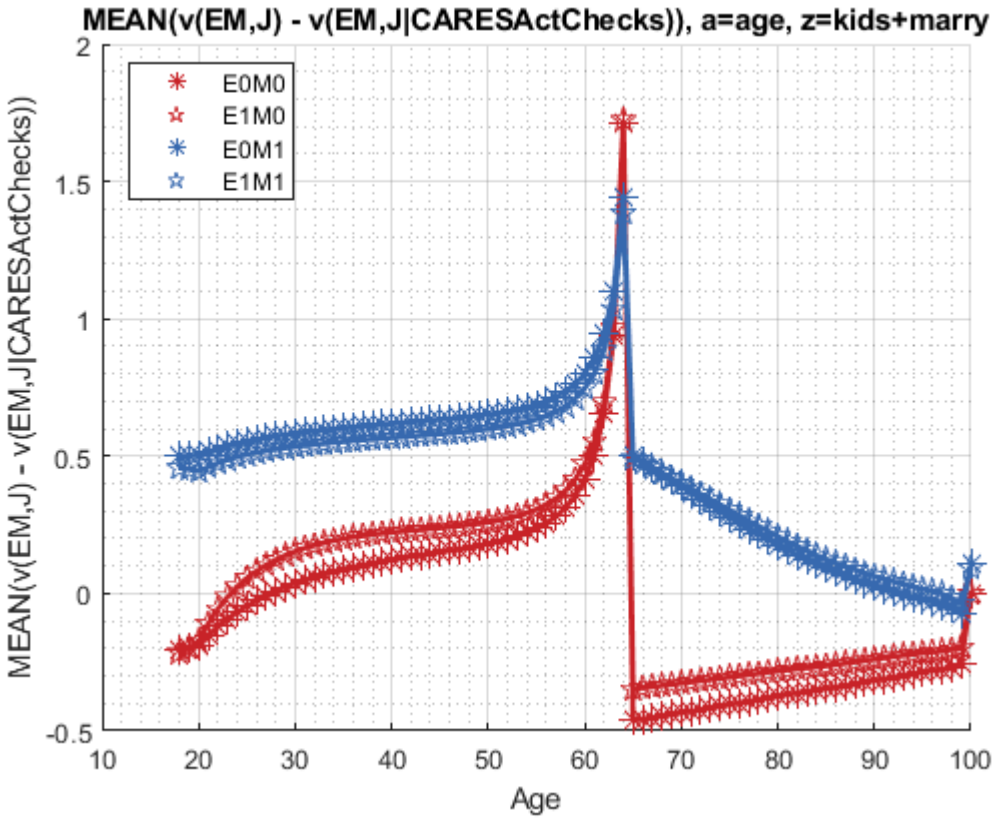
```
% Consumption Choices
tb_az_c = ff_summ_nd_array("MEAN(c(EM,J) - c(EM,J|CARESActChecks))", cons_VFI_wthtrumpchk_drop,
```

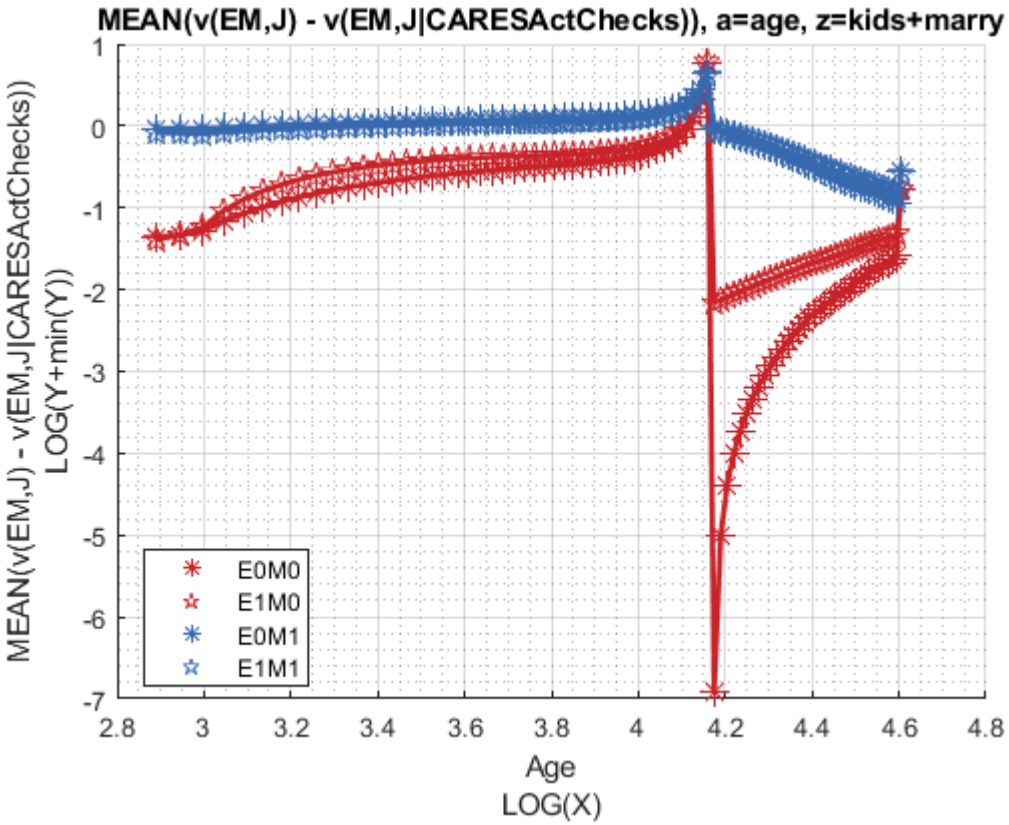
```
xxx  MEAN(c(EM,J) - c(EM,J|CARESActChecks))  xxxxxxxxxxxxxxxxxxxxxxxxxxx
    group    edu    marry    mean_age_18    mean_age_19    mean_age_20    mean_age_21    mean_age_22    mean_age_23
    _____    ___    _____    ___________    ___________    ___________    ___________    ___________    ___________

      1       0       0        0.044034       0.045896       0.048105       0.048949       0.049779       0.050534
      2       1       0        0.064877       0.070583       0.076861       0.078708       0.079934       0.080665
      3       0       1        0.068818       0.072249       0.075948       0.078738        0.08143       0.084077
      4       1       1        0.095673        0.10195        0.10867        0.11365        0.11781        0.12156
```

Graph Mean Values Change:

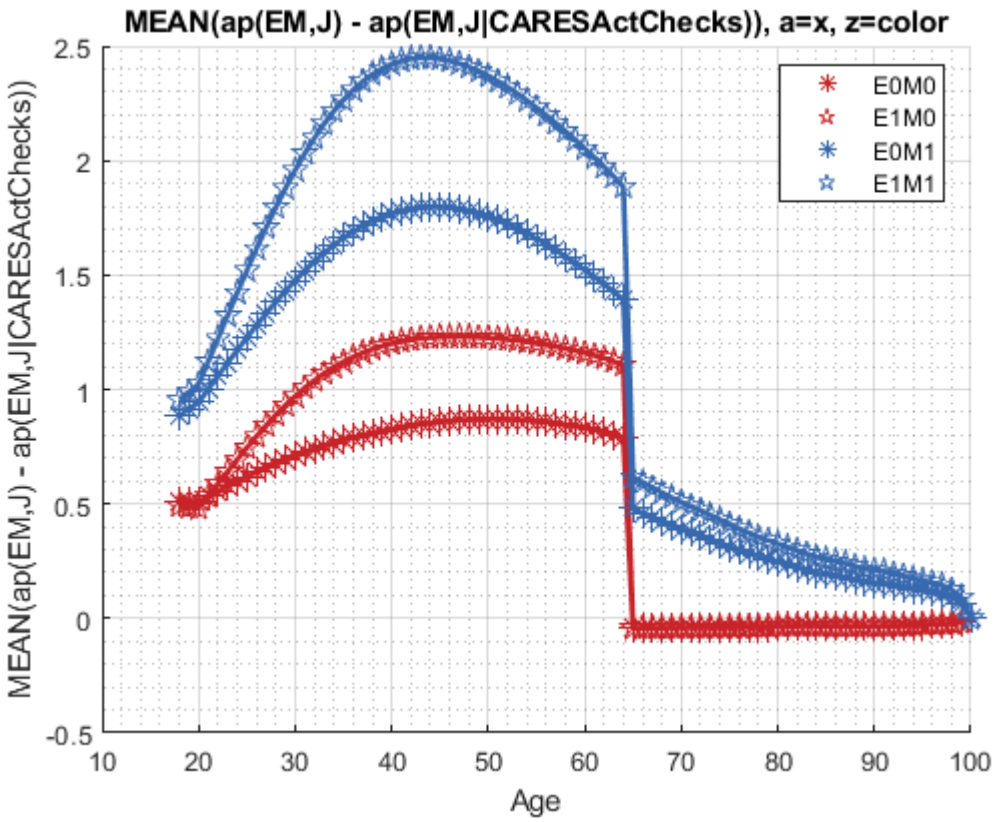
```
mp_support_graph('cl_st_graph_title') = {'MEAN(v(EM,J) - v(EM,J|CARESActChecks)), a=age, z=kids
mp_support_graph('cl_st_ytitle') = {'MEAN(v(EM,J) - v(EM,J|CARESActChecks))'};
ff_graph_grid((tb_az_v{1:end, 4:end}), ar_row_grid, age_grid, mp_support_graph);
```

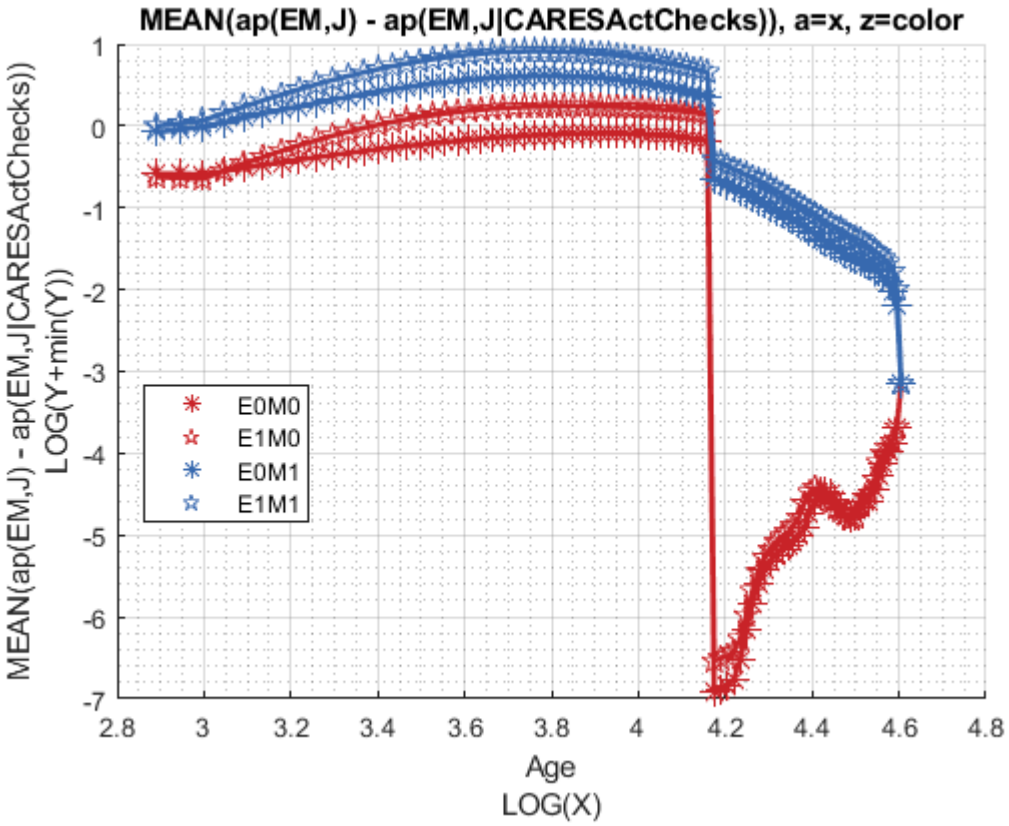




Graph Mean Savings Choices Change:

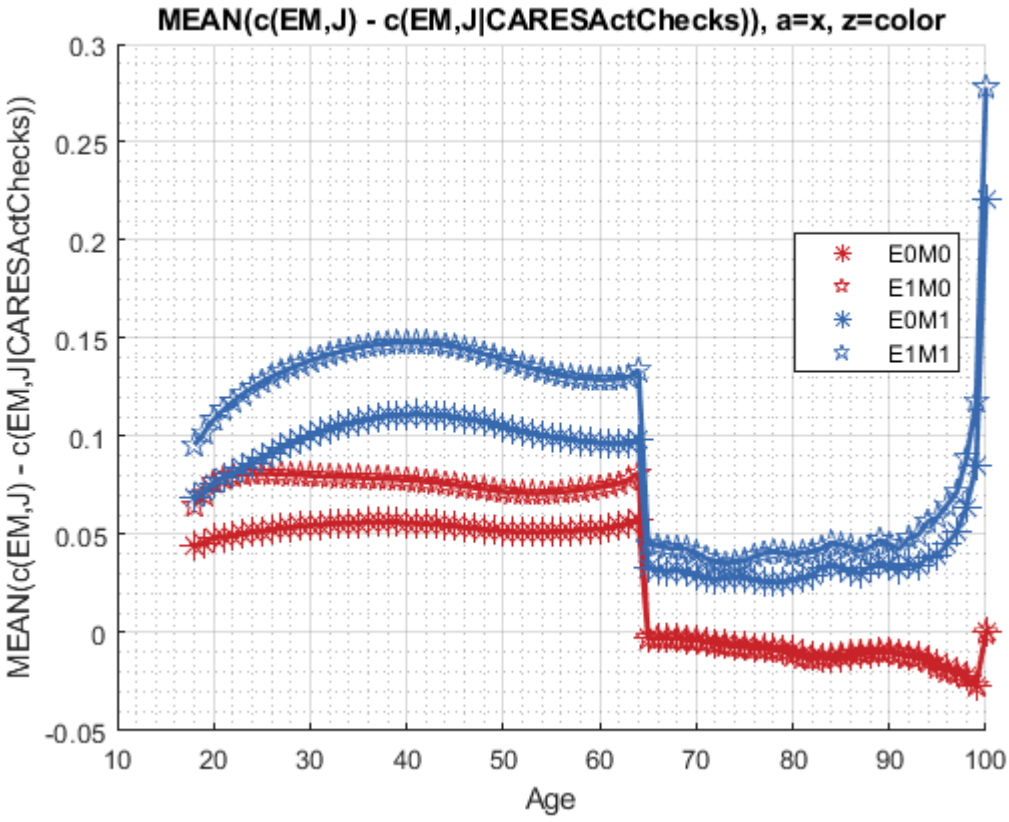
```
mp_support_graph('cl_st_graph_title') = {'MEAN(ap(EM,J) - ap(EM,J|CARESActChecks)), a=x, z=colo
mp_support_graph('cl_st_ytitle') = {'MEAN(ap(EM,J) - ap(EM,J|CARESActChecks))'};
ff_graph_grid((tb_az_ap{1:end, 4:end}), ar_row_grid, age_grid, mp_support_graph);
```

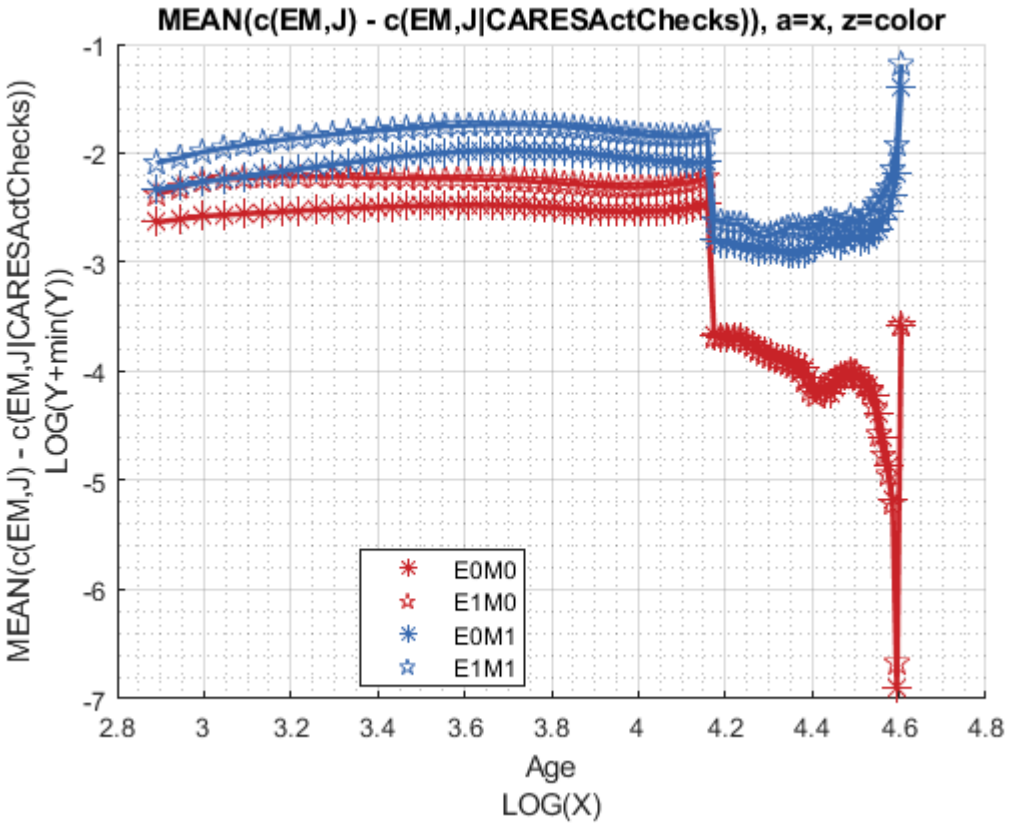




Graph Mean Consumption Change:

```
mp_support_graph('cl_st_graph_title') = {'MEAN(c(EM,J) - c(EM,J|CARESActChecks)), a=x, z=color'
mp_support_graph('cl_st_ytitle') = {'MEAN(c(EM,J) - c(EM,J|CARESActChecks))'};
ff_graph_grid((tb_az_c{1:end, 4:end}), ar_row_grid, age_grid, mp_support_graph);
```


MEAN(c(EM,J) - c(EM,J|CARESActChecks)), a=x, z=color
MEAN(c(EM,J) - c(EM,J|CARESActChecks))
Age
E0M0
E1M0
E0M1
E1M1


MEAN(c(EM,J) - c(EM,J|CARESActChecks)), a=x, z=color
MEAN(c(EM,J) - c(EM,J|CARESActChecks))
LOG(Y+min(Y))
Age
LOG(X)
E0M0
E1M0
E0M1
E1M1