Appendix

Contents

1 ivqregress iqr output

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. ivqregress iqr assets (i.p401k = i.e401k) $covariates, quantile(10(10)90)

Initial grid:
Quantile = 0.10: .........10.........20.........30 done
Quantile = 0.20: .........10.........20.........30 done
Quantile = 0.30: .........10.........20.........30 done
Quantile = 0.40: .........10.........20.........30 done
Quantile = 0.50: .........10.........20.........30 done
Quantile = 0.60: .........10.........20.........30 done
Quantile = 0.70: .........10.........20.........30 done
Quantile = 0.80: .........10.........20.........30 done
Quantile = 0.90: .........10.........20.........30 done

Adaptive grid:
Quantile = 0.10: .........10.........20.........30 done
Quantile = 0.20: .........10.........20.........30 done
Quantile = 0.30: .........10.........20.........30 done
Quantile = 0.40: .........10.........20.........30 done
Quantile = 0.50: .........10.........20.........30 done
Quantile = 0.60: .........10.........20.........30 done
Quantile = 0.70: .........10.........20.........30 done
Quantile = 0.80: .........10.........20.........30 done
Quantile = 0.90: .........10.........20.........30 done
```

IV quantile regression   Number of obs = 9,913
Estimator: Inverse quantile regression   Wald chi2(81) = 5121.46
                                          Prob > chi2 = 0.0000

assets	Coefficient	Robust std. err.	z	P>|z|	[95% conf. interval]	
q10						
1.p401k	3240.08	475.6184	6.81	0.000	2307.885	4172.275
income	.0303072	.0123138	2.46	0.014	.0061725	.0544419
age	131.5908	15.13725	8.69	0.000	101.9223	161.2592
familysize	−329.2838	123.4665	−2.67	0.008	−571.2737	−87.29385
educ	−301.1635	52.02897	−5.79	0.000	−403.1384	−199.1885
married						
Married	−1504.648	380.0373	−3.96	0.000	−2249.508	−759.7886
ira						
Yes	7864.15	344.2198	22.85	0.000	7189.492	8538.809
pension						
Receives ..	63.88643	326.6017	0.20	0.845	−576.2412	704.0141
ownhome						
Yes	969.6861	300.4319	3.23	0.001	380.8503	1558.522
_cons	−7455.806	1192.112	−6.25	0.000	−9792.302	−5119.311
q20						
1.p401k	3446.347	334.4227	10.31	0.000	2790.89	4101.803
income	.0730526	.0083383	8.76	0.000	.0567097	.0893954
age	117.4232	10.09197	11.64	0.000	97.64336	137.2031
familysize	−311.518	77.31495	−4.03	0.000	−463.0525	−159.9835

educ	-198.8986	36.72851	-5.42	0.000	-270.8852	-126.9121
married						
Married	-1023.821	245.1418	-4.18	0.000	-1504.29	-543.3515
ira						
Yes	8728.335	389.1614	22.43	0.000	7965.593	9491.077
pension						
Receives ..	8.450874	211.6773	0.04	0.968	-406.429	423.3307
ownhome						
Yes	247.107	193.7332	1.28	0.202	-132.6031	626.817
_cons	-6064.723	762.7341	-7.95	0.000	-7559.654	-4569.791
q30						
1.p401k	3674.434	318.7578	11.53	0.000	3049.68	4299.188
income	.0900328	.0080609	11.17	0.000	.0742337	.1058319
age	106.4245	8.502461	12.52	0.000	89.76	123.089
familysize	-217.4507	57.05271	-3.81	0.000	-329.272	-105.6295
educ	-122.6666	32.44148	-3.78	0.000	-186.2508	-59.08249
married						
Married	-1021.046	209.9362	-4.86	0.000	-1432.513	-609.5787
ira						
Yes	11974.65	566.1735	21.15	0.000	10864.98	13084.33
pension						
Receives ..	-149.6646	187.9519	-0.80	0.426	-518.0435	218.7144
ownhome						
Yes	118.1594	157.3384	0.75	0.453	-190.2182	426.537
_cons	-5631.287	617.0855	-9.13	0.000	-6840.752	-4421.821
q40						
1.p401k	4196.127	369.6983	11.35	0.000	3471.532	4920.722
income	.1230721	.0104554	11.77	0.000	.1025799	.1435643
age	93.83839	7.963134	11.78	0.000	78.23093	109.4458
familysize	-225.3647	51.96267	-4.34	0.000	-327.2097	-123.5198
educ	-112.4069	30.98445	-3.63	0.000	-173.1353	-51.67845
married						
Married	-1191.624	211.8386	-5.63	0.000	-1606.82	-776.4277
ira						
Yes	16997.44	803.6711	21.15	0.000	15422.28	18572.61
pension						
Receives ..	-511.7032	194.9456	-2.62	0.009	-893.7895	-129.6168
ownhome						
Yes	102.3659	148.1471	0.69	0.490	-187.997	392.7288
_cons	-4787.913	553.4111	-8.65	0.000	-5872.579	-3703.247
q50						
1.p401k	5313.397	573.2818	9.27	0.000	4189.786	6437.009
income	.1577512	.0124889	12.63	0.000	.1332735	.1822289

age	99.96526	8.561923	11.68	0.000	83.1842	116.7463
familysize	-197.8251	54.36773	-3.64	0.000	-304.3838	-91.26627
educ	-96.43983	32.09465	-3.00	0.003	-159.3442	-33.53547
married						
Married	-1359.124	227.3366	-5.98	0.000	-1804.696	-913.5528
ira						
Yes	22629.61	1022.706	22.13	0.000	20625.15	24634.08
pension						
Receives ..	-693.8347	210.6176	-3.29	0.001	-1106.638	-281.0317
ownhome						
Yes	-30.29657	154.7265	-0.20	0.845	-333.555	272.9618
_cons	-4998.673	570.1315	-8.77	0.000	-6116.11	-3881.236
q60						
1.p401k	7006.205	801.4258	8.74	0.000	5435.439	8576.97
income	.2327564	.0174037	13.37	0.000	.1986458	.2668671
age	135.4321	11.38565	11.89	0.000	113.1166	157.7475
familysize	-262.5927	65.82424	-3.99	0.000	-391.6058	-133.5795
educ	-118.7153	40.43096	-2.94	0.003	-197.9585	-39.47208
married						
Married	-1716.762	269.9874	-6.36	0.000	-2245.927	-1187.596
ira						
Yes	30301.55	1241.557	24.41	0.000	27868.15	32734.96
pension						
Receives ..	-988.7325	261.4987	-3.78	0.000	-1501.261	-476.2044
ownhome						
Yes	-122.2135	193.9046	-0.63	0.529	-502.2595	257.8324
_cons	-6290.287	688.2098	-9.14	0.000	-7639.154	-4941.421
q70						
1.p401k	9093.469	1109.745	8.19	0.000	6918.408	11268.53
income	.3459585	.0226207	15.29	0.000	.3016228	.3902942
age	191.2876	16.53737	11.57	0.000	158.875	223.7003
familysize	-242.6605	86.05014	-2.82	0.005	-411.3157	-74.00534
educ	-143.4298	51.12786	-2.81	0.005	-243.6386	-43.22104
married						
Married	-2470.874	352.4949	-7.01	0.000	-3161.751	-1779.996
ira						
Yes	39365.32	1608.07	24.48	0.000	36213.56	42517.08
pension						
Receives ..	-1796.514	344.5429	-5.21	0.000	-2471.806	-1121.222
ownhome						
Yes	-4.058645	262.5795	-0.02	0.988	-518.7051	510.5878
_cons	-8637.647	928.462	-9.30	0.000	-10457.4	-6817.894
q80						

```
      1.p401k |  10699.12    1651.062     6.48    0.000    7463.098    13935.14
        income |  .5103271    .0293056    17.41    0.000    .4528892    .5677649
           age |  280.7892    24.10894    11.65    0.000    233.5366    328.0419
    familysize |  -400.8973   117.2019    -3.42    0.001   -630.6089   -171.1858
          educ |   -130.398   68.51364    -1.90    0.057   -264.6823    3.886266
               |
       married |
       Married |  -2902.662   480.5005    -6.04    0.000   -3844.426   -1960.899
               |
           ira |
           Yes |  48875.79    2297.873    21.27    0.000    44372.04    53379.54
               |
       pension |
    Receives .. |  -3072.814   502.6944    -6.11    0.000   -4058.077   -2087.551
               |
       ownhome |
           Yes |  235.2409    402.9808     0.58    0.559   -554.5869    1025.069
         _cons |  -11871.24   1257.402    -9.44    0.000    -14335.7   -9406.775
   ------------+----------------------------------------------------------------
   q90         |
      1.p401k |  15983.42    3046.028     5.25    0.000    10013.32    21953.53
        income |  .8247356    .0570029    14.47    0.000    .713012    .9364593
           age |  485.8734    48.99224     9.92    0.000    389.8504    581.8965
    familysize |  -646.4962    185.913    -3.48    0.001   -1010.879   -282.1134
          educ |    48.4205   106.2844     0.46    0.649   -159.8931    256.7341
               |
       married |
       Married |  -3265.007   753.4701    -4.33    0.000   -4741.782   -1788.233
               |
           ira |
           Yes |  68543.44    4952.261    13.84    0.000    58837.18    78249.69
               |
       pension |
    Receives .. |  -4656.177   869.4887    -5.36    0.000   -6360.343    -2952.01
               |
       ownhome |
           Yes |  400.1957    680.2776     0.59    0.556    -933.124    1733.515
         _cons |  -20594.85   2260.983    -9.11    0.000    -25026.3   -16163.41
   ------------+----------------------------------------------------------------
```

Endogenous: 1.p401k
Exogenous: income age familysize educ 1.married 1.ira 1.pension 1.ownhome
            1.e401k

. estimates store iqr

2   ivqregress smooth output

. ivqregress smooth assets (i.p401k = i.e401k) $covariates, quantile(10(10)90)

Fitting smoothed IV quantile regression:

Quantile = .1:
Step 1: Bandwidth = 1327.0069   GMM criterion Q(b) = 9.224e-11
Step 2: Bandwidth = 1311.3131   GMM criterion Q(b) = 1.997e-10

Quantile = .2:

```
Step 1: Bandwidth = 1272.5204    GMM criterion Q(b) = 2.089e-10
Step 2: Bandwidth = 1237.7195    GMM criterion Q(b) = 3.115e-19

Quantile = .3:
Step 1: Bandwidth = 1504.4065    GMM criterion Q(b) = 5.407e-13
Step 2: Bandwidth = 1486.4224    GMM criterion Q(b) = 1.153e-10

Quantile = .4:
Step 1: Bandwidth = 1362.7753    GMM criterion Q(b) = 5.797e-17
Step 2: Bandwidth = 1362.6479    GMM criterion Q(b) = 2.271e-16

Quantile = .5:
Step 1: Bandwidth = 1302.9736    GMM criterion Q(b) = 2.617e-08
Step 2: Bandwidth = 6079.6881    GMM criterion Q(b) = 2.391e-12
Step 3: Bandwidth = 1438.3068    GMM criterion Q(b) = 9.212e-13

Quantile = .6:
Step 1: Bandwidth = 1533.5129    GMM criterion Q(b) = 2.663e-18
Step 2: Bandwidth = 1520.1182    GMM criterion Q(b) = 1.557e-19

Quantile = .7:
Step 1: Bandwidth = 2044.8617    GMM criterion Q(b) = 1.391e-10
Step 2: Bandwidth = 1977.2482    GMM criterion Q(b) = 1.825e-11

Quantile = .8:
Step 1: Bandwidth = 2503.7256    GMM criterion Q(b) = 3.623e-10
Step 2: Bandwidth = 2458.6714    GMM criterion Q(b) = 2.307e-10

Quantile = .9:
Step 1: Bandwidth = 3560.2178    GMM criterion Q(b) = 4.301e-12
Step 2: Bandwidth = 3529.3557    GMM criterion Q(b) = 2.929e-10
```

```
IV quantile regression                          Number of obs =    9,913
Estimator: Smoothed estimating equations        Wald chi2(81) = 4932.84
                                                Prob > chi2   =  0.0000
```

assets	Coefficient	Robust std. err.	z	P>|z|	[95% conf. interval]	
q10						
1.p401k	3191.667	486.2193	6.56	0.000	2238.695	4144.639
income	.0318585	.0123707	2.58	0.010	.0076124	.0561046
age	128.9268	15.42632	8.36	0.000	98.69178	159.1618
familysize	-329.8374	125.4774	-2.63	0.009	-575.7687	-83.90615
educ	-289.8807	53.06713	-5.46	0.000	-393.8904	-185.8711
married						
Married	-1480.013	386.4611	-3.83	0.000	-2237.463	-722.5635
ira						
Yes	7914.049	342.9506	23.08	0.000	7241.878	8586.22
pension						
Receives ..	-5.356704	334.9869	-0.02	0.987	-661.919	651.2056
ownhome						
Yes	1043.279	308.722	3.38	0.001	438.1945	1648.363
_cons	-7631.313	1214.725	-6.28	0.000	-10012.13	-5250.496
q20						
1.p401k	3503.744	338.8383	10.34	0.000	2839.633	4167.854
income	.0737261	.0084716	8.70	0.000	.057122	.0903302

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age	114.9688	10.38239	11.07	0.000	94.61965	135.3179
familysize	-277.8925	78.67289	-3.53	0.000	-432.0885	-123.6964
educ	-194.0516	37.98876	-5.11	0.000	-268.5082	-119.595
married						
Married	-1160.725	253.6528	-4.58	0.000	-1657.876	-663.5752
ira						
Yes	8799.905	388.3753	22.66	0.000	8038.703	9561.106
pension						
Receives ..	-33.33779	218.144	-0.15	0.879	-460.8921	394.2165
ownhome						
Yes	386.2308	201.4194	1.92	0.055	-8.543996	781.0057
_cons	-6264.968	792.0489	-7.91	0.000	-7817.356	-4712.581
q30						
1.p401k	3754.908	320.9631	11.70	0.000	3125.832	4383.984
income	.0939826	.0083408	11.27	0.000	.0776348	.1103303
age	103.8314	8.712147	11.92	0.000	86.75593	120.9069
familysize	-250.4947	59.95479	-4.18	0.000	-368.0039	-132.9855
educ	-134.7013	33.4085	-4.03	0.000	-200.1808	-69.22189
married						
Married	-1028.643	217.4311	-4.73	0.000	-1454.8	-602.4861
ira						
Yes	12008.63	563.5555	21.31	0.000	10904.08	13113.18
pension						
Receives ..	-179.5281	192.0513	-0.93	0.350	-555.9418	196.8855
ownhome						
Yes	195.7323	162.634	1.20	0.229	-123.0246	514.4891
_cons	-5536.814	637.1917	-8.69	0.000	-6785.686	-4287.941
q40						
1.p401k	4326.754	371.7419	11.64	0.000	3598.153	5055.354
income	.1288469	.0105877	12.17	0.000	.1080955	.1495983
age	99.89601	8.289602	12.05	0.000	83.64869	116.1433
familysize	-231.3411	53.94265	-4.29	0.000	-337.0668	-125.6155
educ	-114.4753	32.09266	-3.57	0.000	-177.3758	-51.57484
married						
Married	-1212.951	216.8328	-5.59	0.000	-1637.935	-787.966
ira						
Yes	16874.38	801.2841	21.06	0.000	15303.89	18444.86
pension						
Receives ..	-493.1742	198.6221	-2.48	0.013	-882.4663	-103.8821
ownhome						
Yes	105.4536	152.7777	0.69	0.490	-193.9852	404.8925
_cons	-5216.625	581.4362	-8.97	0.000	-6356.219	-4077.031
q50						

	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
1.p401k	5364.468	573.3728	9.36	0.000	4240.678	6488.258
income	.1679934	.013419	12.52	0.000	.1416925	.1942942
age	113.6318	9.352867	12.15	0.000	95.30052	131.9631
familysize	-228.7766	57.61072	-3.97	0.000	-341.6916	-115.8617
educ	-102.2889	34.18527	-2.99	0.003	-169.2908	-35.28701
married						
Married	-1362.56	238.5988	-5.71	0.000	-1830.205	-894.9153
ira						
Yes	22402.04	1043.504	21.47	0.000	20356.81	24447.27
pension						
Receives ..	-713.996	220.476	-3.24	0.001	-1146.121	-281.8709
ownhome						
Yes	-12.71396	161.3703	-0.08	0.937	-328.994	303.5661
_cons	-5672.645	619.7049	-9.15	0.000	-6887.244	-4458.045
q60						
1.p401k	6964.18	799.1829	8.71	0.000	5397.811	8530.55
income	.2422267	.0180009	13.46	0.000	.2069457	.2775078
age	145.0532	11.88882	12.20	0.000	121.7515	168.3549
familysize	-271.8402	68.28584	-3.98	0.000	-405.678	-138.0024
educ	-128.4236	41.84504	-3.07	0.002	-210.4384	-46.40883
married						
Married	-1790.19	278.6729	-6.42	0.000	-2336.379	-1244.001
ira						
Yes	30029.76	1251.554	23.99	0.000	27576.76	32482.76
pension						
Receives ..	-1063.919	269.4261	-3.95	0.000	-1591.984	-535.8533
ownhome						
Yes	-79.57029	198.2018	-0.40	0.688	-468.0387	308.8981
_cons	-6708.442	714.0485	-9.39	0.000	-8107.951	-5308.932
q70						
1.p401k	9002.846	1108.915	8.12	0.000	6829.412	11176.28
income	.3555392	.0229067	15.52	0.000	.310643	.4004354
age	203.3279	17.59732	11.55	0.000	168.8378	237.818
familysize	-314.0023	89.13006	-3.52	0.000	-488.694	-139.3106
educ	-163.099	52.90533	-3.08	0.002	-266.7916	-59.40646
married						
Married	-2396.634	359.7017	-6.66	0.000	-3101.636	-1691.631
ira						
Yes	38962.04	1621.653	24.03	0.000	35783.66	42140.42
pension						
Receives ..	-1882.868	352.3168	-5.34	0.000	-2573.396	-1192.34
ownhome						
Yes	-19.74677	271.0796	-0.07	0.942	-551.053	511.5595
_cons	-8753.875	954.0692	-9.18	0.000	-10623.82	-6883.934

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             │
q80          │
    1.p401k  │   10658.02    1665.467      6.40    0.000     7393.765    13922.27
     income  │   .5172628    .0298155     17.35    0.000     .4588255       .5757
        age  │   293.9692    24.78395     11.86    0.000     245.3935    342.5448
 familysize  │  -407.2737    119.8248     -3.40    0.001    -642.1259   -172.4214
       educ  │  -131.0776    69.87187     -1.88    0.061    -268.0239    5.868784
             │
    married  │
    Married  │   -3077.77    491.0029     -6.27    0.000    -4040.118   -2115.422
             │
        ira  │
        Yes  │   48410.11    2296.042     21.08    0.000     43909.95    52910.27
             │
    pension  │
Receives ..  │  -3049.023    515.0161     -5.92    0.000    -4058.436    -2039.61
             │
    ownhome  │
        Yes  │   272.4814    412.1642      0.66    0.509    -535.3457    1080.308
      _cons  │  -12294.73    1284.692     -9.57    0.000    -14812.68   -9776.781
─────────────┼──────────────────────────────────────────────────────────────────
q90          │
    1.p401k  │   15525.23    3035.965      5.11    0.000     9574.848    21475.61
     income  │   .8311508    .0574108     14.48    0.000     .7186277    .9436738
        age  │   486.9876    51.61654      9.43    0.000      385.821    588.1541
 familysize  │  -586.2617    193.5936     -3.03    0.002    -965.6983   -206.8252
       educ  │    14.5293    110.8781      0.13    0.896    -202.7878    231.8464
             │
    married  │
    Married  │  -3877.165    781.2296     -4.96    0.000    -5408.347   -2345.983
             │
        ira  │
        Yes  │   67888.86    4902.106     13.85    0.000     58280.91    77496.81
             │
    pension  │
Receives ..  │  -4829.506    898.9147     -5.37    0.000    -6591.346   -3067.665
             │
    ownhome  │
        Yes  │   715.6272    722.8727      0.99    0.322    -701.1773    2132.432
      _cons  │  -19953.21    2326.698     -8.58    0.000    -24513.45   -15392.96
─────────────┴──────────────────────────────────────────────────────────────────
```

Endogenous: 1.p401k

Exogenous: income age familysize educ 1.married 1.ira 1.pension 1.ownhome
            1.e401k

. estimates store smooth