

quantile regressions

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• Article where this method is introduced: https://link-springer-com.offcampus.lib.washington.edu/article/10.1007/s11222-013-9381-9	
• R package created by Geraci and accompanying JOSS paper https://www.jstatsoft.org/article/view/v057i13	

Table 1: Full Sample Extracted Coefficients for Unemployment

	pctile	base_model	model2	model3
0.10	0.10	0.1350415	0.2006711	0.1350928
0.25	0.25	0.0829585	-0.0303062	-0.0289640
0.50	0.50	-0.0757593	-0.0303062	-0.0289640
0.75	0.75	0.7442827	-0.0303062	-0.0289640
0.90	0.90	-0.0878907	0.0442082	0.0202126

- Someone's MA thesis that walks through the math behind these in a slightly more accessible way. https://tigerprints.clemson.edu/cgi/viewcontent.cgi?article=4454&context=all_theses

Table 7 Relationship between Unemployment and Log Annual Earnings (quantile regression)

Full Sample

- base = just unemployment,
- m2 = + other coeffs
- m3 = other coeffs + race”

Self-employed Sample

This here throws some convergence warnings (I believe due to the smaller sample size for this group. Need to look into further)

Table 2: Self-Employed Extracted Coefficients for Unemployment

	pctile	base_model	model2	model3
0.10	0.10	-0.0074805	0.1113393	-0.0494890
0.25	0.25	0.3772894	0.1087080	0.0643697
0.50	0.50	-0.0557757	0.0633283	0.0464167
0.75	0.75	-0.0715248	-0.0515171	-0.0624212
0.90	0.90	-0.0881499	-0.0232098	-0.0136030

Table 3: Wage and Salary Extracted Coefficients for Unemployment

	pctile	base_model	model2	model3
0.10	0.10	0.3591454	0.0417551	0.0527048
0.25	0.25	0.0857098	-0.0280080	-0.0267294
0.50	0.50	-0.0730060	-0.0280080	-0.0267294
0.75	0.75	-0.0730060	-0.0280080	-0.0267294
0.90	0.90	0.0946840	0.0630869	0.0510016

Table 4: Full Sample Extracted Coefficients for Initial Status

	pctile	base_SE	base_unemp	model2_SE	model2_unemp	model3_SE	model3_unemp
0.10	0.10	0.0400027	0.0116629	0.1086482	0.1048814	0.0487111	0.0491577
0.25	0.25	0.1225068	0.0416038	-0.0150273	-0.0303245	-0.0158537	-0.0293166
0.50	0.50	0.0034674	-0.0774356	-0.0150273	-0.0303245	-0.0158537	-0.0293166
0.75	0.75	0.4031329	0.3594298	-0.0150273	-0.0303245	-0.0158537	-0.0293166
0.90	0.90	0.1029427	-0.0826951	0.0369494	0.0280093	0.0243423	0.0225344

Table 5: Self-Employed Sample Extracted Coefficients for Initial Status

	pctile	base_SE	base_unemp	model2_SE	model2_unemp	model3_SE	model3_unemp
0.10	0.10	0.0000018	-0.0093606	0.0098833	0.0540617	-0.0251008	0.0003325
0.25	0.25	0.0070012	-0.0183049	0.0166678	0.0500566	0.0059114	0.1383518
0.50	0.50	0.1001708	0.0476770	0.0162925	0.0811006	0.1325617	0.0728034
0.75	0.75	0.0176334	-0.0544643	0.0648435	0.0022498	0.0572288	0.0182294
0.90	0.90	0.0304595	-0.0719476	0.1047895	0.0498800	0.0789513	0.0325763

Wage and Salary

Table 8 Relationship between Initial Employment Status and Log Annual Earnings (quantile regression)

Full Sample

Below variables are named as follows:

- base_SE shows the coefficients for the base model (earnings predicted only by initial status) for those who started as SE versus those who started as Wage and salaried.
- base_unemp shows the coefficients for the base model showing the difference for those who started as unemployed vs those who started as wage and salary

Self-employed Sample

Again this throws some convergence warnings that will need to be looked into further and test different optimizers.

Table 6: Wage Sample Extracted Coefficients for Initial Status

	pctile	base_SE	base_unemp	model2_SE	model2_unemp	model3_SE	model3_unemp
0.10	0.10	0.6899601	0.2157183	0.3596939	0.0094906	0.1854898	0.0471281
0.25	0.25	0.1217255	0.0440190	-0.0143608	-0.0271619	-0.0134821	-0.0262014
0.50	0.50	0.0026850	-0.0750214	-0.0143608	-0.0271619	-0.0134821	-0.0262014
0.75	0.75	0.0026850	-0.0750214	-0.0143608	-0.0271619	-0.0134821	-0.0262014
0.90	0.90	0.8879010	-0.0513579	0.0724070	0.0596059	0.0612623	0.0485429

Wage and Salary Sample

Table 11 Business Value and Unemployment (quantile Regression)

Table 27 Business value and Initial Employment Status (quantile regression)

Appendix:

Full Summary Tables

Full Sample Unemployment

```
Call: lqmm(fixed = ln_tpearn ~ unempf12_6_fct + educ3_fct + sex_fct +
    age + age2 + immigrant_fct + parent_fct + industry2_fct +
    factor(calyear) + combine_race_eth_fct, random = ~1, group = +ssuid_spanel_pnum_id,
    tau = c(0.1, 0.25, 0.5, 0.75, 0.9), data = earnings, control = lqmmControl(method = "df")
```

tau = 0.1

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2436e+01	1.3701e-02	1.2409e+01	12.4638
unempf12_6_fct1	1.3509e-01	3.3580e-02	6.7611e-02	0.2026
educ3_fct2	3.1599e-02	1.1847e-02	7.7915e-03	0.0554
educ3_fct3	4.7910e-02	1.5384e-02	1.6994e-02	0.0788
educ3_fct4	1.2826e-01	1.5962e-02	9.6187e-02	0.1603
sex_fctFemale	-4.4363e-02	1.2820e-02	-7.0126e-02	-0.0186
age	5.8081e-03	4.9382e-04	4.8158e-03	0.0068
age2	-9.5289e-05	8.0483e-06	-1.1146e-04	-0.0001
immigrant_fctImmigrant	-6.6380e-02	2.0718e-02	-1.0801e-01	-0.0247
parent_fct1	6.2171e-03	1.7478e-02	-2.8907e-02	0.0413
industry2_fct2	6.8985e-02	2.2751e-02	2.3266e-02	0.1147
industry2_fct3	1.5355e-02	1.5374e-02	-1.5541e-02	0.0463

industry2_fct4	2.1197e-01	3.0965e-02	1.4975e-01	0.2742
industry2_fct5	-2.3819e-02	1.3818e-02	-5.1587e-02	0.0039
industry2_fct6	1.3351e-01	2.2156e-02	8.8983e-02	0.1780
industry2_fct7	2.1123e-01	3.3380e-02	1.4415e-01	0.2783
industry2_fct8	8.9056e-02	2.6607e-02	3.5588e-02	0.1425
industry2_fct9	-6.5529e-03	1.8897e-02	-4.4528e-02	0.0314
industry2_fct10	-4.0062e-02	1.4003e-02	-6.8203e-02	-0.0119
industry2_fct11	-2.4989e-02	1.3282e-02	-5.1680e-02	0.0017
industry2_fct12	6.8778e-02	3.2197e-02	4.0757e-03	0.1335
industry2_fct13	7.4034e-02	2.8346e-02	1.7071e-02	0.1310
factor(calyear)2015	1.0254e-02	9.5606e-03	-8.9591e-03	0.0295
factor(calyear)2016	8.4524e-03	1.3558e-02	-1.8794e-02	0.0357
factor(calyear)2018	5.1941e-02	1.4775e-02	2.2249e-02	0.0816
factor(calyear)2019	5.6405e-02	1.3048e-02	3.0185e-02	0.0826
factor(calyear)2020	4.6387e-02	1.4302e-02	1.7646e-02	0.0751
combine_race_eth_fctBlack	3.2832e-02	1.7590e-02	-2.5160e-03	0.0682
combine_race_eth_fctAsian	9.9802e-02	2.7296e-02	4.4948e-02	0.1547
combine_race_eth_fctHispanic	-4.5185e-02	1.0492e-02	-6.6269e-02	-0.0241
combine_race_eth_fctOther	1.9325e-01	4.2639e-02	1.0757e-01	0.2789
	Pr(> t)			
(Intercept)	< 2.2e-16	***		
unempf12_6_fct1	0.0001984	***		
educ3_fct2	0.0103352	*		
educ3_fct3	0.0030783	**		
educ3_fct4	1.686e-10	***		
sex_fctFemale	0.0011268	**		
age	7.050e-16	***		
age2	5.536e-16	***		
immigrant_fctImmigrant	0.0023845	**		
parent_fct1	0.7235920			
industry2_fct2	0.0038734	**		
industry2_fct3	0.3228346			
industry2_fct4	1.151e-08	***		
industry2_fct5	0.0910497	.		
industry2_fct6	2.135e-07	***		
industry2_fct7	7.290e-08	***		
industry2_fct8	0.0015751	**		
industry2_fct9	0.7302478			
industry2_fct10	0.0061936	**		
industry2_fct11	0.0658597	.		
industry2_fct12	0.0376872	*		
industry2_fct13	0.0119217	*		
factor(calyear)2015	0.2887537			

```

factor(calyear)2016          0.5359034
factor(calyear)2018          0.0009562 ***
factor(calyear)2019          7.521e-05 ***
factor(calyear)2020          0.0021293 **
combine_race_eth_fctBlack   0.0679559 .
combine_race_eth_fctAsian   0.0006240 ***
combine_race_eth_fctHispanic 7.930e-05 ***
combine_race_eth_fctOther    3.764e-05 ***

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Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

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tau = 0.25

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2496e+01	1.1702e-02	1.2472e+01	12.5194
unempf12_6_fct1	-2.8964e-02	2.8617e-03	-3.4715e-02	-0.0232
educ3_fct2	3.0259e-02	1.4822e-03	2.7280e-02	0.0332
educ3_fct3	9.8782e-02	2.2843e-03	9.4192e-02	0.1034
educ3_fct4	1.6752e-01	3.0910e-03	1.6131e-01	0.1737
sex_fctFemale	-5.3359e-02	1.5002e-03	-5.6374e-02	-0.0503
age	8.4294e-03	4.2600e-04	7.5733e-03	0.0093
age2	-8.3249e-05	5.3089e-06	-9.3917e-05	-0.0001
immigrant_fctImmigrant	-1.0691e-02	2.6170e-03	-1.5950e-02	-0.0054
parent_fct1	1.7943e-02	1.7289e-03	1.4469e-02	0.0214
industry2_fct2	-4.8463e-02	8.8890e-03	-6.6327e-02	-0.0306
industry2_fct3	-3.5279e-02	9.0824e-03	-5.3531e-02	-0.0170
industry2_fct4	-2.3412e-02	9.1563e-03	-4.1812e-02	-0.0050
industry2_fct5	-7.0847e-02	8.9554e-03	-8.8843e-02	-0.0529
industry2_fct6	-3.4537e-02	9.8468e-03	-5.4325e-02	-0.0147
industry2_fct7	-2.9306e-02	1.0813e-02	-5.1035e-02	-0.0076
industry2_fct8	-1.5375e-02	9.0618e-03	-3.3585e-02	0.0028
industry2_fct9	-2.8945e-02	9.3632e-03	-4.7761e-02	-0.0101
industry2_fct10	-7.1478e-02	9.0827e-03	-8.9730e-02	-0.0532
industry2_fct11	-8.1374e-02	9.1771e-03	-9.9816e-02	-0.0629
industry2_fct12	-9.3131e-02	9.8027e-03	-1.1283e-01	-0.0734
industry2_fct13	-4.8936e-02	8.6835e-03	-6.6386e-02	-0.0315
factor(calyear)2015	4.6106e-03	1.3995e-03	1.7982e-03	0.0074
factor(calyear)2016	1.4504e-02	1.2885e-03	1.1914e-02	0.0171
factor(calyear)2018	2.3939e-02	1.6787e-03	2.0565e-02	0.0273
factor(calyear)2019	3.6663e-02	1.8375e-03	3.2971e-02	0.0404
factor(calyear)2020	3.6339e-02	1.8846e-03	3.2551e-02	0.0401
combine_race_eth_fctBlack	-2.8390e-02	1.9075e-03	-3.2223e-02	-0.0246

combine_race_eth_fctAsian	1.0693e-02	3.8570e-03	2.9416e-03	0.0184							
combine_race_eth_fctHispanic	-2.1814e-02	1.7885e-03	-2.5408e-02	-0.0182							
combine_race_eth_fctOther	-8.0957e-03	4.7702e-03	-1.7682e-02	0.0015							
	Pr(> t)										
(Intercept)	< 2.2e-16	***									
unempf12_6_fct1	1.347e-13	***									
educ3_fct2	< 2.2e-16	***									
educ3_fct3	< 2.2e-16	***									
educ3_fct4	< 2.2e-16	***									
sex_fctFemale	< 2.2e-16	***									
age	< 2.2e-16	***									
age2	< 2.2e-16	***									
immigrant_fctImmigrant	0.0001627	***									
parent_fct1	5.778e-14	***									
industry2_fct2	1.615e-06	***									
industry2_fct3	0.0003077	***									
industry2_fct4	0.0137089	*									
industry2_fct5	2.613e-10	***									
industry2_fct6	0.0009792	***									
industry2_fct7	0.0092401	**									
industry2_fct8	0.0961039	.									
industry2_fct9	0.0032836	**									
industry2_fct10	3.025e-10	***									
industry2_fct11	9.314e-12	***									
industry2_fct12	1.072e-12	***									
industry2_fct13	8.484e-07	***									
factor(calyear)2015	0.0018367	**									
factor(calyear)2016	3.425e-15	***									
factor(calyear)2018	< 2.2e-16	***									
factor(calyear)2019	< 2.2e-16	***									
factor(calyear)2020	< 2.2e-16	***									
combine_race_eth_fctBlack	< 2.2e-16	***									
combine_race_eth_fctAsian	0.0078493	**									
combine_race_eth_fctHispanic	< 2.2e-16	***									
combine_race_eth_fctOther	0.0960102	.									

Signif. codes:	0	'***'	0.001	'**'	0.01	'*'	0.05	'.'	0.1	' '	1

tau = 0.5

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2496e+01	1.1702e-02	1.2472e+01	12.5194

unempf12_6_fct1	-2.8964e-02	2.8617e-03	-3.4715e-02	-0.0232
educ3_fct2	3.0259e-02	1.4822e-03	2.7280e-02	0.0332
educ3_fct3	9.8782e-02	2.2843e-03	9.4192e-02	0.1034
educ3_fct4	1.6752e-01	3.0910e-03	1.6131e-01	0.1737
sex_fctFemale	-5.3359e-02	1.5002e-03	-5.6374e-02	-0.0503
age	8.4294e-03	4.2600e-04	7.5733e-03	0.0093
age2	-8.3249e-05	5.3089e-06	-9.3917e-05	-0.0001
immigrant_fctImmigrant	-1.0691e-02	2.6170e-03	-1.5950e-02	-0.0054
parent_fct1	1.7943e-02	1.7289e-03	1.4469e-02	0.0214
industry2_fct2	-4.8463e-02	8.8890e-03	-6.6327e-02	-0.0306
industry2_fct3	-3.5279e-02	9.0824e-03	-5.3531e-02	-0.0170
industry2_fct4	-2.3412e-02	9.1563e-03	-4.1812e-02	-0.0050
industry2_fct5	-7.0847e-02	8.9554e-03	-8.8843e-02	-0.0529
industry2_fct6	-3.4537e-02	9.8468e-03	-5.4325e-02	-0.0147
industry2_fct7	-2.9306e-02	1.0813e-02	-5.1035e-02	-0.0076
industry2_fct8	-1.5375e-02	9.0618e-03	-3.3585e-02	0.0028
industry2_fct9	-2.8945e-02	9.3632e-03	-4.7761e-02	-0.0101
industry2_fct10	-7.1478e-02	9.0827e-03	-8.9730e-02	-0.0532
industry2_fct11	-8.1374e-02	9.1771e-03	-9.9816e-02	-0.0629
industry2_fct12	-9.3131e-02	9.8027e-03	-1.1283e-01	-0.0734
industry2_fct13	-4.8936e-02	8.6835e-03	-6.6386e-02	-0.0315
factor(calyear)2015	4.6106e-03	1.3995e-03	1.7982e-03	0.0074
factor(calyear)2016	1.4504e-02	1.2885e-03	1.1914e-02	0.0171
factor(calyear)2018	2.3939e-02	1.6787e-03	2.0565e-02	0.0273
factor(calyear)2019	3.6663e-02	1.8375e-03	3.2971e-02	0.0404
factor(calyear)2020	3.6339e-02	1.8846e-03	3.2551e-02	0.0401
combine_race_eth_fctBlack	-2.8390e-02	1.9075e-03	-3.2223e-02	-0.0246
combine_race_eth_fctAsian	1.0693e-02	3.8570e-03	2.9416e-03	0.0184
combine_race_eth_fctHispanic	-2.1814e-02	1.7885e-03	-2.5408e-02	-0.0182
combine_race_eth_fctOther	-8.0957e-03	4.7702e-03	-1.7682e-02	0.0015
	Pr(> t)			
(Intercept)	< 2.2e-16	***		
unempf12_6_fct1	1.347e-13	***		
educ3_fct2	< 2.2e-16	***		
educ3_fct3	< 2.2e-16	***		
educ3_fct4	< 2.2e-16	***		
sex_fctFemale	< 2.2e-16	***		
age	< 2.2e-16	***		
age2	< 2.2e-16	***		
immigrant_fctImmigrant	0.0001627	***		
parent_fct1	5.778e-14	***		
industry2_fct2	1.615e-06	***		
industry2_fct3	0.0003077	***		

```

industry2_fct4          0.0137089 *
industry2_fct5          2.613e-10 ***
industry2_fct6          0.0009792 ***
industry2_fct7          0.0092401 **
industry2_fct8          0.0961039 .
industry2_fct9          0.0032836 **
industry2_fct10         3.025e-10 ***
industry2_fct11         9.314e-12 ***
industry2_fct12         1.072e-12 ***
industry2_fct13         8.484e-07 ***
factor(calyear)2015     0.0018367 **
factor(calyear)2016     3.425e-15 ***
factor(calyear)2018     < 2.2e-16 ***
factor(calyear)2019     < 2.2e-16 ***
factor(calyear)2020     < 2.2e-16 ***
combine_race_eth_fctBlack < 2.2e-16 ***
combine_race_eth_fctAsian  0.0078493 **
combine_race_eth_fctHispanic < 2.2e-16 ***
combine_race_eth_fctOther   0.0960102 .

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Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

tau = 0.75

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2496e+01	1.1702e-02	1.2472e+01	12.5194
unempf12_6_fct1	-2.8964e-02	2.8617e-03	-3.4715e-02	-0.0232
educ3_fct2	3.0259e-02	1.4822e-03	2.7280e-02	0.0332
educ3_fct3	9.8782e-02	2.2843e-03	9.4192e-02	0.1034
educ3_fct4	1.6752e-01	3.0910e-03	1.6131e-01	0.1737
sex_fctFemale	-5.3359e-02	1.5002e-03	-5.6374e-02	-0.0503
age	8.4294e-03	4.2600e-04	7.5733e-03	0.0093
age2	-8.3249e-05	5.3089e-06	-9.3917e-05	-0.0001
immigrant_fctImmigrant	-1.0691e-02	2.6170e-03	-1.5950e-02	-0.0054
parent_fct1	1.7943e-02	1.7289e-03	1.4469e-02	0.0214
industry2_fct2	-4.8463e-02	8.8890e-03	-6.6327e-02	-0.0306
industry2_fct3	-3.5279e-02	9.0824e-03	-5.3531e-02	-0.0170
industry2_fct4	-2.3412e-02	9.1563e-03	-4.1812e-02	-0.0050
industry2_fct5	-7.0847e-02	8.9554e-03	-8.8843e-02	-0.0529
industry2_fct6	-3.4537e-02	9.8468e-03	-5.4325e-02	-0.0147
industry2_fct7	-2.9306e-02	1.0813e-02	-5.1035e-02	-0.0076
industry2_fct8	-1.5375e-02	9.0618e-03	-3.3585e-02	0.0028

industry2_fct9	-2.8945e-02	9.3632e-03	-4.7761e-02	-0.0101
industry2_fct10	-7.1478e-02	9.0827e-03	-8.9730e-02	-0.0532
industry2_fct11	-8.1374e-02	9.1771e-03	-9.9816e-02	-0.0629
industry2_fct12	-9.3131e-02	9.8027e-03	-1.1283e-01	-0.0734
industry2_fct13	-4.8936e-02	8.6835e-03	-6.6386e-02	-0.0315
factor(calyear)2015	4.6106e-03	1.3995e-03	1.7982e-03	0.0074
factor(calyear)2016	1.4504e-02	1.2885e-03	1.1914e-02	0.0171
factor(calyear)2018	2.3939e-02	1.6787e-03	2.0565e-02	0.0273
factor(calyear)2019	3.6663e-02	1.8375e-03	3.2971e-02	0.0404
factor(calyear)2020	3.6339e-02	1.8846e-03	3.2551e-02	0.0401
combine_race_eth_fctBlack	-2.8390e-02	1.9075e-03	-3.2223e-02	-0.0246
combine_race_eth_fctAsian	1.0693e-02	3.8570e-03	2.9416e-03	0.0184
combine_race_eth_fctHispanic	-2.1814e-02	1.7885e-03	-2.5408e-02	-0.0182
combine_race_eth_fctOther	-8.0957e-03	4.7702e-03	-1.7682e-02	0.0015
	Pr(> t)			
(Intercept)	< 2.2e-16	***		
unempf12_6_fct1	1.347e-13	***		
educ3_fct2	< 2.2e-16	***		
educ3_fct3	< 2.2e-16	***		
educ3_fct4	< 2.2e-16	***		
sex_fctFemale	< 2.2e-16	***		
age	< 2.2e-16	***		
age2	< 2.2e-16	***		
immigrant_fctImmigrant	0.0001627	***		
parent_fct1	5.778e-14	***		
industry2_fct2	1.615e-06	***		
industry2_fct3	0.0003077	***		
industry2_fct4	0.0137089	*		
industry2_fct5	2.613e-10	***		
industry2_fct6	0.0009792	***		
industry2_fct7	0.0092401	**		
industry2_fct8	0.0961039	.		
industry2_fct9	0.0032836	**		
industry2_fct10	3.025e-10	***		
industry2_fct11	9.314e-12	***		
industry2_fct12	1.072e-12	***		
industry2_fct13	8.484e-07	***		
factor(calyear)2015	0.0018367	**		
factor(calyear)2016	3.425e-15	***		
factor(calyear)2018	< 2.2e-16	***		
factor(calyear)2019	< 2.2e-16	***		
factor(calyear)2020	< 2.2e-16	***		
combine_race_eth_fctBlack	< 2.2e-16	***		

```

combine_race_eth_fctAsian    0.0078493 **
combine_race_eth_fctHispanic < 2.2e-16 ***
combine_race_eth_fctOther    0.0960102 .
---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

tau = 0.9

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2500e+01	1.1559e-02	1.2477e+01	12.5232
unempf12_6_fct1	2.0213e-02	5.3476e-03	9.4661e-03	0.0310
educ3_fct2	3.6120e-02	8.5023e-03	1.9034e-02	0.0532
educ3_fct3	1.3528e-01	3.3776e-03	1.2849e-01	0.1421
educ3_fct4	2.2079e-01	7.5127e-03	2.0570e-01	0.2359
sex_fctFemale	-3.5875e-02	6.7312e-03	-4.9402e-02	-0.0223
age	8.5334e-03	4.3262e-04	7.6640e-03	0.0094
age2	-7.8330e-05	5.2877e-06	-8.8956e-05	-0.0001
immigrant_fctImmigrant	2.9395e-02	1.4841e-02	-4.2944e-04	0.0592
parent_fct1	3.3136e-02	3.7013e-03	2.5698e-02	0.0406
industry2_fct2	1.2381e-02	1.1719e-02	-1.1170e-02	0.0359
industry2_fct3	2.2375e-02	8.5407e-03	5.2114e-03	0.0395
industry2_fct4	7.9737e-02	1.4221e-02	5.1158e-02	0.1083
industry2_fct5	-9.4323e-03	8.7236e-03	-2.6963e-02	0.0081
industry2_fct6	3.5447e-02	1.1639e-02	1.2058e-02	0.0588
industry2_fct7	4.7692e-02	1.9115e-02	9.2777e-03	0.0861
industry2_fct8	2.6141e-02	9.4295e-03	7.1913e-03	0.0451
industry2_fct9	3.0355e-02	1.0036e-02	1.0186e-02	0.0505
industry2_fct10	-4.2590e-02	9.3725e-03	-6.1425e-02	-0.0238
industry2_fct11	-1.5757e-02	1.0032e-02	-3.5918e-02	0.0044
industry2_fct12	-1.5594e-02	1.0543e-02	-3.6782e-02	0.0056
industry2_fct13	2.3868e-02	9.8271e-03	4.1199e-03	0.0436
factor(calyear)2015	3.7013e-02	4.1758e-03	2.8621e-02	0.0454
factor(calyear)2016	7.2791e-02	1.2446e-02	4.7781e-02	0.0978
factor(calyear)2018	7.3199e-02	4.8407e-03	6.3471e-02	0.0829
factor(calyear)2019	8.5248e-02	5.0135e-03	7.5173e-02	0.0953
factor(calyear)2020	6.5782e-02	7.3004e-03	5.1111e-02	0.0805
combine_race_eth_fctBlack	1.1461e-02	4.7085e-03	1.9988e-03	0.0209
combine_race_eth_fctAsian	6.7050e-02	7.7776e-03	5.1420e-02	0.0827
combine_race_eth_fctHispanic	3.0675e-02	7.6846e-03	1.5232e-02	0.0461
combine_race_eth_fctOther	6.6724e-02	8.9294e-03	4.8780e-02	0.0847
	Pr(> t)			
(Intercept)	< 2.2e-16 ***			

```

unempf12_6_fct1          0.0004266 ***
educ3_fct2                9.601e-05 ***
educ3_fct3                < 2.2e-16 ***
educ3_fct4                < 2.2e-16 ***
sex_fctFemale              2.474e-06 ***
age                         < 2.2e-16 ***
age2                        < 2.2e-16 ***
immigrant_fctImmigrant    0.0532599 .
parent_fct1                6.939e-12 ***
industry2_fct2              0.2959358
industry2_fct3              0.0116809 *
industry2_fct4              9.383e-07 ***
industry2_fct5              0.2848837
industry2_fct6              0.0037321 **
industry2_fct7              0.0160173 *
industry2_fct8              0.0078501 **
industry2_fct9              0.0039573 **
industry2_fct10             3.619e-05 ***
industry2_fct11             0.1226899
industry2_fct12             0.1455370
industry2_fct13             0.0188628 *
factor(calyear)2015         9.419e-12 ***
factor(calyear)2016         3.999e-07 ***
factor(calyear)2018         < 2.2e-16 ***
factor(calyear)2019         < 2.2e-16 ***
factor(calyear)2020         5.683e-12 ***
combine_race_eth_fctBlack   0.0186203 *
combine_race_eth_fctAsian   2.181e-11 ***
combine_race_eth_fctHispanic 0.0002192 ***
combine_race_eth_fctOther    1.234e-09 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

AIC:

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[1] -71526 (df = 33)  -5083 (df = 33) -45069 (df = 33) -21428 (df = 33)
[5] -52277 (df = 33)

```

SE Sample Unemployment

```

Call: lqmm(fixed = ln_tpearn ~ unempf12_6_fct + educ3_fct + sex_fct +
           age + age2 + immigrant_fct + parent_fct + industry2_fct +
           factor(calyear) + combine_race_eth_fct, random = ~1, group = +ssuid_spanel_pnum_id,

```

```

tau = c(0.1, 0.25, 0.5, 0.75, 0.9), data = subset(earnings,
pct_se_after_12 == 1), control = lqmmControl(method = "df"))

tau = 0.1

Fixed effects:
            Value Std. Error lower bound upper bound
(Intercept) 1.2024e+01 1.1738e-01 1.1789e+01 12.2603
unempf12_6_fct1 -4.9489e-02 5.2684e-02 -1.5536e-01 0.0564
educ3_fct2 9.8741e-02 2.6710e-02 4.5066e-02 0.1524
educ3_fct3 1.3356e-01 4.1685e-02 4.9788e-02 0.2173
educ3_fct4 2.2755e-01 5.9679e-02 1.0763e-01 0.3475
sex_fctFemale -2.7678e-02 3.8651e-02 -1.0535e-01 0.0500
age 1.0617e-02 3.5364e-03 3.5104e-03 0.0177
age2 -1.2747e-04 3.8882e-05 -2.0561e-04 0.0000
immigrant_fctImmigrant -7.2291e-02 3.6676e-02 -1.4599e-01 0.0014
parent_fct1 4.3416e-02 2.3070e-02 -2.9435e-03 0.0898
industry2_fct2 1.9460e-01 5.6987e-02 8.0081e-02 0.3091
industry2_fct3 5.4923e-02 5.8651e-02 -6.2941e-02 0.1728
industry2_fct4 2.4216e-01 7.9958e-02 8.1482e-02 0.4028
industry2_fct5 1.5022e-01 6.4978e-02 1.9645e-02 0.2808
industry2_fct6 1.3521e-01 5.6419e-02 2.1833e-02 0.2486
industry2_fct7 1.3833e-01 6.3250e-02 1.1226e-02 0.2654
industry2_fct8 1.8240e-01 6.6631e-02 4.8496e-02 0.3163
industry2_fct9 1.1961e-01 6.0148e-02 -1.2612e-03 0.2405
industry2_fct10 1.7531e-01 6.7186e-02 4.0291e-02 0.3103
industry2_fct11 1.3733e-01 5.8348e-02 2.0071e-02 0.2546
industry2_fct12 1.6397e-01 6.2031e-02 3.9318e-02 0.2886
industry2_fct13 8.0799e-01 4.8301e-01 -1.6264e-01 1.7786
factor(calyear)2015 2.4421e-04 2.6767e-02 -5.3546e-02 0.0540
factor(calyear)2016 3.9598e-03 2.1968e-02 -4.0186e-02 0.0481
factor(calyear)2018 2.4659e-02 2.7483e-02 -3.0569e-02 0.0799
factor(calyear)2019 2.8285e-02 3.3579e-02 -3.9194e-02 0.0958
factor(calyear)2020 1.1142e-02 2.6735e-02 -4.2584e-02 0.0649
combine_race_eth_fctBlack -5.2623e-03 4.0009e-02 -8.5664e-02 0.0751
combine_race_eth_fctAsian 1.4423e-01 6.4313e-02 1.4992e-02 0.2735
combine_race_eth_fctHispanic 9.6068e-02 3.6450e-02 2.2819e-02 0.1693
combine_race_eth_fctOther 1.2332e-01 9.0048e-02 -5.7639e-02 0.3043
Pr(>|t|)

(Intercept) < 2.2e-16 ***
unempf12_6_fct1 0.3521539
educ3_fct2 0.0005510 ***
educ3_fct3 0.0023848 **

```

```

educ3_fct4          0.0003847 ***
sex_fctFemale       0.4773312
age                 0.0042097 **
age2                0.0019239 **
immigrant_fctImmigrant 0.0543789 .
parent_fct1         0.0657848 .
industry2_fct2      0.0012903 **
industry2_fct3      0.3536443
industry2_fct4      0.0039125 **
industry2_fct5      0.0250274 *
industry2_fct6      0.0204107 *
industry2_fct7      0.0335408 *
industry2_fct8      0.0086055 **
industry2_fct9      0.0523446 .
industry2_fct10     0.0119991 *
industry2_fct11     0.0226509 *
industry2_fct12     0.0109916 *
industry2_fct13     0.1007317
factor(calyear)2015 0.9927575
factor(calyear)2016 0.8576951
factor(calyear)2018 0.3739607
factor(calyear)2019 0.4036823
factor(calyear)2020 0.6786761
combine_race_eth_fctBlack 0.8958967
combine_race_eth_fctAsian 0.0294737 *
combine_race_eth_fctHispanic 0.0112145 *
combine_race_eth_fctOther   0.1770941
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

tau = 0.25

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2179e+01	1.0683e-01	1.1964e+01	12.3932
unempf12_6_fct1	6.4370e-02	6.6574e-02	-6.9416e-02	0.1982
educ3_fct2	4.4086e-02	1.7242e-02	9.4356e-03	0.0787
educ3_fct3	1.4251e-01	1.9026e-02	1.0428e-01	0.1807
educ3_fct4	1.6548e-01	2.4838e-02	1.1557e-01	0.2154
sex_fctFemale	-8.8437e-02	2.2369e-02	-1.3339e-01	-0.0435
age	1.1131e-02	3.8365e-03	3.4216e-03	0.0188
age2	-1.5200e-04	3.7434e-05	-2.2723e-04	-0.0001
immigrant_fctImmigrant	-3.4149e-02	2.6618e-02	-8.7640e-02	0.0193

parent_fct1	3.4069e-02	1.7765e-02	-1.6322e-03	0.0698
industry2_fct2	8.5409e-02	5.0413e-02	-1.5900e-02	0.1867
industry2_fct3	1.0282e-01	4.2936e-02	1.6532e-02	0.1891
industry2_fct4	2.6963e-01	6.4920e-02	1.3917e-01	0.4001
industry2_fct5	8.8388e-02	4.9596e-02	-1.1279e-02	0.1881
industry2_fct6	1.0967e-01	5.1016e-02	7.1479e-03	0.2122
industry2_fct7	1.3180e-01	6.4544e-02	2.0958e-03	0.2615
industry2_fct8	1.6484e-01	5.2199e-02	5.9945e-02	0.2697
industry2_fct9	6.3840e-02	4.9765e-02	-3.6166e-02	0.1638
industry2_fct10	1.2982e-01	5.5224e-02	1.8840e-02	0.2408
industry2_fct11	5.9669e-02	4.7380e-02	-3.5545e-02	0.1549
industry2_fct12	4.8664e-02	4.2067e-02	-3.5873e-02	0.1332
industry2_fct13	3.0491e-01	1.4964e-01	4.1987e-03	0.6056
factor(calyear)2015	2.2423e-02	4.5737e-02	-6.9489e-02	0.1143
factor(calyear)2016	5.8826e-02	2.4675e-02	9.2392e-03	0.1084
factor(calyear)2018	3.6988e-02	2.7469e-02	-1.8212e-02	0.0922
factor(calyear)2019	5.3119e-02	2.4487e-02	3.9105e-03	0.1023
factor(calyear)2020	2.1189e-02	2.3496e-02	-2.6027e-02	0.0684
combine_race_eth_fctBlack	-2.4699e-02	2.8581e-02	-8.2134e-02	0.0327
combine_race_eth_fctAsian	9.3096e-02	2.5501e-02	4.1851e-02	0.1443
combine_race_eth_fctHispanic	4.3555e-02	1.9421e-02	4.5277e-03	0.0826
combine_race_eth_fctOther	1.4840e-01	6.6674e-02	1.4415e-02	0.2824
	Pr(> t)			
(Intercept)	< 2.2e-16	***		
unempf12_6_fct1	0.3383479			
educ3_fct2	0.0137122	*		
educ3_fct3	1.158e-09	***		
educ3_fct4	2.212e-08	***		
sex_fctFemale	0.0002474	***		
age	0.0055502	**		
age2	0.0001760	***		
immigrant_fctImmigrant	0.2055459			
parent_fct1	0.0609874	.		
industry2_fct2	0.0965797	.		
industry2_fct3	0.0205073	*		
industry2_fct4	0.0001307	***		
industry2_fct5	0.0809203	.		
industry2_fct6	0.0365436	*		
industry2_fct7	0.0465485	*		
industry2_fct8	0.0027194	**		
industry2_fct9	0.2055874			
industry2_fct10	0.0228054	*		
industry2_fct11	0.2138633			

```

industry2_fct12          0.2529553
industry2_fct13          0.0470050 *
factor(calyear)2015      0.6261341
factor(calyear)2016      0.0210426 *
factor(calyear)2018      0.1843228
factor(calyear)2019      0.0349418 *
factor(calyear)2020      0.3715553
combine_race_eth_fctBlack 0.3916947
combine_race_eth_fctAsian 0.0006346 ***
combine_race_eth_fctHispanic 0.0294723 *
combine_race_eth_fctOther 0.0306613 *
---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

tau = 0.5

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2275e+01	7.3156e-02	1.2128e+01	12.4222
unempf12_6_fct1	4.6417e-02	4.1184e-02	-3.6345e-02	0.1292
educ3_fct2	3.0563e-02	1.0456e-02	9.5500e-03	0.0516
educ3_fct3	1.5824e-01	2.1511e-02	1.1501e-01	0.2015
educ3_fct4	1.7142e-01	2.0094e-02	1.3104e-01	0.2118
sex_fctFemale	-8.3758e-02	1.4010e-02	-1.1191e-01	-0.0556
age	1.1239e-02	3.7096e-03	3.7847e-03	0.0187
age2	-1.3785e-04	4.0997e-05	-2.2024e-04	-0.0001
immigrant_fctImmigrant	-3.8208e-02	1.1075e-02	-6.0464e-02	-0.0160
parent_fct1	2.7516e-02	2.1374e-02	-1.5437e-02	0.0705
industry2_fct2	1.5536e-02	4.3832e-02	-7.2547e-02	0.1036
industry2_fct3	1.1036e-01	5.1188e-02	7.4919e-03	0.2132
industry2_fct4	2.4253e-01	6.6685e-02	1.0852e-01	0.3765
industry2_fct5	6.4088e-02	4.9415e-02	-3.5216e-02	0.1634
industry2_fct6	1.1804e-01	4.8422e-02	2.0735e-02	0.2153
industry2_fct7	1.0344e-01	6.0703e-02	-1.8551e-02	0.2254
industry2_fct8	1.7301e-01	5.1015e-02	7.0493e-02	0.2755
industry2_fct9	4.1080e-02	4.3930e-02	-4.7200e-02	0.1294
industry2_fct10	9.6387e-02	5.0197e-02	-4.4863e-03	0.1973
industry2_fct11	6.8763e-02	5.1861e-02	-3.5454e-02	0.1730
industry2_fct12	9.6646e-03	4.1740e-02	-7.4215e-02	0.0935
industry2_fct13	1.5876e-01	1.2185e-01	-8.6113e-02	0.4036
factor(calyear)2015	1.1884e-02	1.2424e-02	-1.3082e-02	0.0369
factor(calyear)2016	1.4789e-02	1.8408e-02	-2.2203e-02	0.0518
factor(calyear)2018	3.5311e-02	2.0057e-02	-4.9951e-03	0.0756

```

factor(calyear)2019          4.9790e-02  2.1518e-02  6.5472e-03  0.0930
factor(calyear)2020          1.7411e-02  2.0043e-02 -2.2867e-02  0.0577
combine_race_eth_fctBlack    -1.4807e-02  2.3912e-02 -6.2859e-02  0.0332
combine_race_eth_fctAsian    1.1637e-01  3.2305e-02  5.1454e-02  0.1813
combine_race_eth_fctHispanic -3.8874e-02  1.5196e-02 -6.9412e-02 -0.0083
combine_race_eth_fctOther    1.5888e-01  4.7518e-02  6.3392e-02  0.2544
                                         Pr(>|t|)
(Intercept)                         < 2.2e-16 ***
unempf12_6_fct1                    0.2652033
educ3_fct2                          0.0052355 **
educ3_fct3                          1.866e-09 ***
educ3_fct4                          2.978e-11 ***
sex_fctFemale                       2.525e-07 ***
age                                 0.0038995 **
age2                                0.0015055 **
immigrant_fctImmigrant             0.0011629 **
parent_fct1                         0.2040184
industry2_fct2                      0.7245284
industry2_fct3                      0.0360258 *
industry2_fct4                      0.0006619 ***
industry2_fct5                      0.2007307
industry2_fct6                      0.0184514 *
industry2_fct7                      0.0947206 .
industry2_fct8                      0.0013828 **
industry2_fct9                      0.3543106
industry2_fct10                     0.0606631 .
industry2_fct11                     0.1910118
industry2_fct12                     0.8178561
industry2_fct13                     0.1987051
factor(calyear)2015                 0.3434845
factor(calyear)2016                 0.4256231
factor(calyear)2018                 0.0845581 .
factor(calyear)2019                 0.0249133 *
factor(calyear)2020                 0.3892584
combine_race_eth_fctBlack          0.5386345
combine_race_eth_fctAsian          0.0007354 ***
combine_race_eth_fctHispanic       0.0136669 *
combine_race_eth_fctOther          0.0015911 **

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

tau = 0.75

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2349e+01	7.9233e-02	1.2190e+01	12.5080
unempf12_6_fct1	-6.2421e-02	3.2776e-02	-1.2829e-01	0.0034
educ3_fct2	5.1910e-02	1.8137e-02	1.5462e-02	0.0884
educ3_fct3	1.4521e-01	1.6683e-02	1.1169e-01	0.1787
educ3_fct4	2.3516e-01	2.5187e-02	1.8455e-01	0.2858
sex_fctFemale	-9.1618e-02	1.6693e-02	-1.2516e-01	-0.0581
age	1.2036e-02	3.7100e-03	4.5807e-03	0.0195
age2	-1.2327e-04	4.0735e-05	-2.0513e-04	0.0000
immigrant_fctImmigrant	-8.1955e-02	1.9066e-02	-1.2027e-01	-0.0436
parent_fct1	4.3187e-02	1.1282e-02	2.0514e-02	0.0659
industry2_fct2	8.1353e-02	5.8443e-02	-3.6093e-02	0.1988
industry2_fct3	6.4103e-02	5.3840e-02	-4.4094e-02	0.1723
industry2_fct4	1.6123e-01	6.8847e-02	2.2879e-02	0.2996
industry2_fct5	4.7425e-02	5.3865e-02	-6.0822e-02	0.1557
industry2_fct6	6.5018e-02	6.0360e-02	-5.6281e-02	0.1863
industry2_fct7	5.2118e-03	7.2302e-02	-1.4009e-01	0.1505
industry2_fct8	1.5526e-01	6.2999e-02	2.8662e-02	0.2819
industry2_fct9	7.7445e-02	5.5998e-02	-3.5088e-02	0.1900
industry2_fct10	1.3540e-01	5.8837e-02	1.7159e-02	0.2536
industry2_fct11	4.7642e-02	5.5629e-02	-6.4148e-02	0.1594
industry2_fct12	2.6810e-02	5.2049e-02	-7.7786e-02	0.1314
industry2_fct13	5.8729e-01	4.9890e-01	-4.1529e-01	1.5899
factor(calyear)2015	2.5634e-02	1.2409e-02	6.9788e-04	0.0506
factor(calyear)2016	3.2166e-02	1.2053e-02	7.9445e-03	0.0564
factor(calyear)2018	5.8745e-02	1.6219e-02	2.6152e-02	0.0913
factor(calyear)2019	7.6608e-02	1.6916e-02	4.2614e-02	0.1106
factor(calyear)2020	4.7823e-02	1.6101e-02	1.5468e-02	0.0802
combine_race_eth_fctBlack	-8.4220e-03	2.0300e-02	-4.9216e-02	0.0324
combine_race_eth_fctAsian	5.7310e-02	2.8509e-02	1.8354e-05	0.1146
combine_race_eth_fctHispanic	-9.1836e-03	1.8537e-02	-4.6435e-02	0.0281
combine_race_eth_fctOther	2.3336e-02	3.5374e-02	-4.7751e-02	0.0944
	Pr(> t)			
(Intercept)	< 2.2e-16	***		
unempf12_6_fct1	0.0627299	.		
educ3_fct2	0.0061740	**		
educ3_fct3	1.633e-11	***		
educ3_fct4	1.867e-12	***		
sex_fctFemale	1.423e-06	***		
age	0.0021239	**		
age2	0.0039390	**		
immigrant_fctImmigrant	8.151e-05	***		

```

parent_fct1          0.0003673 ***
industry2_fct2        0.1702077
industry2_fct3        0.2395462
industry2_fct4        0.0232952 *
industry2_fct5        0.3829265
industry2_fct6        0.2866826
industry2_fct7        0.9428287
industry2_fct8        0.0172730 *
industry2_fct9        0.1729372
industry2_fct10       0.0256732 *
industry2_fct11       0.3959306
industry2_fct12       0.6088039
industry2_fct13       0.2448140
factor(calyear)2015   0.0441545 *
factor(calyear)2016   0.0102966 *
factor(calyear)2018   0.0006927 ***
factor(calyear)2019   3.810e-05 ***
factor(calyear)2020   0.0045979 **
combine_race_eth_fctBlack 0.6800448
combine_race_eth_fctAsian 0.0499295 *
combine_race_eth_fctHispanic 0.6225143
combine_race_eth_fctOther 0.5125366
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

tau = 0.9

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2396e+01	9.8277e-02	1.2198e+01	12.5931
unempf12_6_fct1	-1.3603e-02	5.0372e-02	-1.1483e-01	0.0876
educ3_fct2	1.0346e-01	2.1756e-02	5.9740e-02	0.1472
educ3_fct3	2.0722e-01	3.1807e-02	1.4330e-01	0.2711
educ3_fct4	3.0020e-01	3.7035e-02	2.2578e-01	0.3746
sex_fctFemale	-1.2542e-01	3.1051e-02	-1.8782e-01	-0.0630
age	1.0535e-02	3.5935e-03	3.3134e-03	0.0178
age2	-1.2051e-04	3.9338e-05	-1.9956e-04	0.0000
immigrant_fctImmigrant	-1.0738e-01	2.4487e-02	-1.5659e-01	-0.0582
parent_fct1	8.3239e-02	2.4731e-02	3.3540e-02	0.1329
industry2_fct2	9.6820e-02	4.5153e-02	6.0808e-03	0.1876
industry2_fct3	1.0632e-01	5.7651e-02	-9.5356e-03	0.2222
industry2_fct4	2.9830e-01	8.2034e-02	1.3345e-01	0.4632
industry2_fct5	1.1635e-01	4.4974e-02	2.5976e-02	0.2067

industry2_fct6	1.9501e-01	5.0648e-02	9.3234e-02	0.2968
industry2_fct7	1.1149e-01	7.1522e-02	-3.2242e-02	0.2552
industry2_fct8	2.5541e-01	5.2635e-02	1.4964e-01	0.3612
industry2_fct9	8.6035e-02	5.0393e-02	-1.5232e-02	0.1873
industry2_fct10	1.8273e-01	5.7799e-02	6.6575e-02	0.2989
industry2_fct11	8.5774e-02	4.7066e-02	-8.8084e-03	0.1804
industry2_fct12	7.4175e-02	4.8865e-02	-2.4024e-02	0.1724
industry2_fct13	9.2110e-01	4.3658e-01	4.3761e-02	1.7984
factor(calyear)2015	3.8467e-02	1.5723e-02	6.8710e-03	0.0701
factor(calyear)2016	5.7439e-02	1.4000e-02	2.9305e-02	0.0856
factor(calyear)2018	1.1561e-01	2.0011e-02	7.5398e-02	0.1558
factor(calyear)2019	1.3047e-01	2.3364e-02	8.3513e-02	0.1774
factor(calyear)2020	1.0958e-01	1.6911e-02	7.5592e-02	0.1436
combine_race_eth_fctBlack	-1.6205e-02	3.0576e-02	-7.7649e-02	0.0452
combine_race_eth_fctAsian	7.4089e-02	5.2387e-02	-3.1187e-02	0.1794
combine_race_eth_fctHispanic	-1.1734e-03	3.9012e-02	-7.9571e-02	0.0772
combine_race_eth_fctOther	8.6384e-02	8.8257e-02	-9.0975e-02	0.2637
	Pr(> t)			
(Intercept)	< 2.2e-16	***		
unempf12_6_fct1	0.7882555			
educ3_fct2	1.779e-05	***		
educ3_fct3	3.745e-08	***		
educ3_fct4	1.317e-10	***		
sex_fctFemale	0.0001884	***		
age	0.0051118	**		
age2	0.0035512	**		
immigrant_fctImmigrant	6.129e-05	***		
parent_fct1	0.0014910	**		
industry2_fct2	0.0370001	*		
industry2_fct3	0.0712082	.		
industry2_fct4	0.0006632	***		
industry2_fct5	0.0126960	*		
industry2_fct6	0.0003422	***		
industry2_fct7	0.1254849			
industry2_fct8	1.280e-05	***		
industry2_fct9	0.0940958	.		
industry2_fct10	0.0026928	**		
industry2_fct11	0.0744958	.		
industry2_fct12	0.1354544			
industry2_fct13	0.0400055	*		
factor(calyear)2015	0.0180561	*		
factor(calyear)2016	0.0001537	***		
factor(calyear)2018	5.145e-07	***		

```

factor(calyear)2019      1.017e-06 ***
factor(calyear)2020      4.247e-08 ***
combine_race_eth_fctBlack 0.5985125
combine_race_eth_fctAsian 0.1636095
combine_race_eth_fctHispanic 0.9761263
combine_race_eth_fctOther 0.3324981
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC:
[1] -351.8 (df = 33) -1022.2 (df = 33) -466.0 (df = 33) 788.4 (df = 33)
[5] 2300.4 (df = 33)

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WS Sample Unemployment

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Call: lqmm(fixed = ln_tpearn ~ unempf12_6_fct + educ3_fct + sex_fct +
  age + age2 + immigrant_fct + parent_fct + industry2_fct +
  factor(calyear) + combine_race_eth_fct, random = ~1, group = +ssuid_spanel_pnum_id,
  tau = c(0.1, 0.25, 0.5, 0.75, 0.9), data = subset(earnings,
  pct_ws_after_12 == 1), control = lqmmControl(method = "df"))

tau = 0.1

```

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2172e+01	1.1467e-01	1.1942e+01	12.4027
unempf12_6_fct1	5.2705e-02	8.5564e-03	3.5510e-02	0.0699
educ3_fct2	4.2167e-02	9.6731e-03	2.2728e-02	0.0616
educ3_fct3	1.1190e-01	1.4801e-02	8.2162e-02	0.1416
educ3_fct4	2.4571e-01	3.5755e-02	1.7386e-01	0.3176
sex_fctFemale	-4.0870e-02	7.2219e-03	-5.5383e-02	-0.0264
age	7.9402e-03	1.2607e-03	5.4068e-03	0.0105
age2	-3.4134e-05	2.5341e-05	-8.5059e-05	0.0000
immigrant_fctImmigrant	1.4353e-02	1.7931e-02	-2.1682e-02	0.0504
parent_fct1	2.4501e-02	9.6996e-03	5.0084e-03	0.0440
industry2_fct2	2.7643e-02	1.2206e-02	3.1137e-03	0.0522
industry2_fct3	-2.7424e-02	1.5257e-02	-5.8085e-02	0.0032
industry2_fct4	4.1407e-02	3.1591e-02	-2.2078e-02	0.1049
industry2_fct5	-1.2595e-03	2.1998e-02	-4.5466e-02	0.0429
industry2_fct6	3.5821e-02	1.5202e-02	5.2706e-03	0.0664
industry2_fct7	4.6617e-02	3.1534e-02	-1.6752e-02	0.1100
industry2_fct8	4.7271e-02	1.2097e-02	2.2961e-02	0.0716

industry2_fct9	4.4801e-02	2.7312e-02	-1.0084e-02	0.0997
industry2_fct10	-7.8002e-02	1.1552e-02	-1.0122e-01	-0.0548
industry2_fct11	-1.2445e-02	1.8991e-02	-5.0609e-02	0.0257
industry2_fct12	-1.4385e-02	2.2073e-02	-5.8742e-02	0.0300
industry2_fct13	1.9075e-02	1.1729e-02	-4.4958e-03	0.0426
factor(calyear)2015	7.2611e-03	8.6312e-03	-1.0084e-02	0.0246
factor(calyear)2016	1.9725e-02	8.0298e-03	3.5885e-03	0.0359
factor(calyear)2018	3.9181e-02	8.4496e-03	2.2201e-02	0.0562
factor(calyear)2019	4.8128e-02	8.1215e-03	3.1808e-02	0.0644
factor(calyear)2020	4.8798e-02	8.1349e-03	3.2450e-02	0.0651
combine_race_eth_fctBlack	5.3302e-02	1.6315e-02	2.0515e-02	0.0861
combine_race_eth_fctAsian	8.8090e-02	9.7552e-03	6.8486e-02	0.1077
combine_race_eth_fctHispanic	5.7778e-02	3.4061e-02	-1.0670e-02	0.1262
combine_race_eth_fctOther	7.2494e-02	2.3173e-02	2.5926e-02	0.1191
	Pr(> t)			
(Intercept)	< 2.2e-16	***		
unempf12_6_fct1	1.327e-07	***		
educ3_fct2	6.678e-05	***		
educ3_fct3	9.020e-10	***		
educ3_fct4	1.047e-08	***		
sex_fctFemale	7.806e-07	***		
age	8.102e-08	***		
age2	0.1841795			
immigrant_fctImmigrant	0.4273232			
parent_fct1	0.0148218	*		
industry2_fct2	0.0279920	*		
industry2_fct3	0.0784295	.		
industry2_fct4	0.1960687			
industry2_fct5	0.9545758			
industry2_fct6	0.0225032	*		
industry2_fct7	0.1457215			
industry2_fct8	0.0002859	***		
industry2_fct9	0.1073366			
industry2_fct10	1.605e-08	***		
industry2_fct11	0.5153565			
industry2_fct12	0.5176444			
industry2_fct13	0.1103056			
factor(calyear)2015	0.4042883			
factor(calyear)2016	0.0176210	*		
factor(calyear)2018	2.653e-05	***		
factor(calyear)2019	3.042e-07	***		
factor(calyear)2020	2.352e-07	***		
combine_race_eth_fctBlack	0.0019889	**		

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combine_race_eth_fctAsian    5.319e-12 ***
combine_race_eth_fctHispanic 0.0961731 .
combine_race_eth_fctOther    0.0029578 **
---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

tau = 0.25

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2505e+01	1.1195e-02	1.2482e+01	12.5274
unempf12_6_fct1	-2.6729e-02	3.0898e-03	-3.2939e-02	-0.0205
educ3_fct2	3.1420e-02	1.2381e-03	2.8932e-02	0.0339
educ3_fct3	9.8082e-02	1.8156e-03	9.4434e-02	0.1017
educ3_fct4	1.6628e-01	3.0644e-03	1.6012e-01	0.1724
sex_fctFemale	-4.9181e-02	1.7185e-03	-5.2635e-02	-0.0457
age	8.3804e-03	3.9471e-04	7.5872e-03	0.0092
age2	-8.1147e-05	4.6245e-06	-9.0440e-05	-0.0001
immigrant_fctImmigrant	-6.1348e-03	2.2957e-03	-1.0748e-02	-0.0015
parent_fct1	1.4891e-02	1.7998e-03	1.1274e-02	0.0185
industry2_fct2	-5.1791e-02	7.9167e-03	-6.7700e-02	-0.0359
industry2_fct3	-4.5149e-02	7.4273e-03	-6.0075e-02	-0.0302
industry2_fct4	-3.8027e-02	8.4505e-03	-5.5009e-02	-0.0210
industry2_fct5	-8.0694e-02	6.9171e-03	-9.4594e-02	-0.0668
industry2_fct6	-4.3613e-02	6.7100e-03	-5.7097e-02	-0.0301
industry2_fct7	-3.2817e-02	1.0041e-02	-5.2995e-02	-0.0126
industry2_fct8	-3.2164e-02	7.5334e-03	-4.7303e-02	-0.0170
industry2_fct9	-3.4634e-02	7.6371e-03	-4.9981e-02	-0.0193
industry2_fct10	-8.5529e-02	7.1035e-03	-9.9804e-02	-0.0713
industry2_fct11	-9.1879e-02	7.2598e-03	-1.0647e-01	-0.0773
industry2_fct12	-9.3819e-02	6.8462e-03	-1.0758e-01	-0.0801
industry2_fct13	-6.0359e-02	7.2700e-03	-7.4969e-02	-0.0457
factor(calyear)2015	5.7741e-03	1.1399e-03	3.4834e-03	0.0081
factor(calyear)2016	1.4748e-02	1.3364e-03	1.2062e-02	0.0174
factor(calyear)2018	2.1737e-02	1.8272e-03	1.8065e-02	0.0254
factor(calyear)2019	3.3591e-02	1.9069e-03	2.9759e-02	0.0374
factor(calyear)2020	3.7302e-02	1.5195e-03	3.4249e-02	0.0404
combine_race_eth_fctBlack	-2.6132e-02	1.9349e-03	-3.0021e-02	-0.0222
combine_race_eth_fctAsian	8.6557e-03	3.7455e-03	1.1289e-03	0.0162
combine_race_eth_fctHispanic	-2.1656e-02	1.9007e-03	-2.5476e-02	-0.0178
combine_race_eth_fctOther	-6.9400e-03	4.0959e-03	-1.5171e-02	0.0013
	Pr(> t)			
(Intercept)	< 2.2e-16	***		

```

unempf12_6_fct1          1.965e-11 ***
educ3_fct2                < 2.2e-16 ***
educ3_fct3                < 2.2e-16 ***
educ3_fct4                < 2.2e-16 ***
sex_fctFemale              < 2.2e-16 ***
age                         < 2.2e-16 ***
age2                        < 2.2e-16 ***
immigrant_fctImmigrant    0.010202 *
parent_fct1                7.311e-11 ***
industry2_fct2              3.400e-08 ***
industry2_fct3              1.770e-07 ***
industry2_fct4              4.193e-05 ***
industry2_fct5              9.487e-16 ***
industry2_fct6              3.953e-08 ***
industry2_fct7              0.001982 **
industry2_fct8              8.959e-05 ***
industry2_fct9              3.732e-05 ***
industry2_fct10             2.987e-16 ***
industry2_fct11             < 2.2e-16 ***
industry2_fct12             < 2.2e-16 ***
industry2_fct13             6.611e-11 ***
factor(calyear)2015         6.177e-06 ***
factor(calyear)2016         6.922e-15 ***
factor(calyear)2018         4.651e-16 ***
factor(calyear)2019         < 2.2e-16 ***
factor(calyear)2020         < 2.2e-16 ***
combine_race_eth_fctBlack   < 2.2e-16 ***
combine_race_eth_fctAsian   0.025083 *
combine_race_eth_fctHispanic 2.220e-15 ***
combine_race_eth_fctOther   0.096544 .

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Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

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tau = 0.5

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2505e+01	1.1195e-02	1.2482e+01	12.5274
unempf12_6_fct1	-2.6729e-02	3.0898e-03	-3.2939e-02	-0.0205
educ3_fct2	3.1420e-02	1.2381e-03	2.8932e-02	0.0339
educ3_fct3	9.8082e-02	1.8156e-03	9.4434e-02	0.1017
educ3_fct4	1.6628e-01	3.0644e-03	1.6012e-01	0.1724
sex_fctFemale	-4.9181e-02	1.7185e-03	-5.2635e-02	-0.0457

age	8.3804e-03	3.9471e-04	7.5872e-03	0.0092
age2	-8.1147e-05	4.6245e-06	-9.0440e-05	-0.0001
immigrant_fctImmigrant	-6.1348e-03	2.2957e-03	-1.0748e-02	-0.0015
parent_fct1	1.4891e-02	1.7998e-03	1.1274e-02	0.0185
industry2_fct2	-5.1791e-02	7.9167e-03	-6.7700e-02	-0.0359
industry2_fct3	-4.5149e-02	7.4273e-03	-6.0075e-02	-0.0302
industry2_fct4	-3.8027e-02	8.4505e-03	-5.5009e-02	-0.0210
industry2_fct5	-8.0694e-02	6.9171e-03	-9.4594e-02	-0.0668
industry2_fct6	-4.3613e-02	6.7100e-03	-5.7097e-02	-0.0301
industry2_fct7	-3.2817e-02	1.0041e-02	-5.2995e-02	-0.0126
industry2_fct8	-3.2164e-02	7.5334e-03	-4.7303e-02	-0.0170
industry2_fct9	-3.4634e-02	7.6371e-03	-4.9981e-02	-0.0193
industry2_fct10	-8.5529e-02	7.1035e-03	-9.9804e-02	-0.0713
industry2_fct11	-9.1879e-02	7.2598e-03	-1.0647e-01	-0.0773
industry2_fct12	-9.3819e-02	6.8462e-03	-1.0758e-01	-0.0801
industry2_fct13	-6.0359e-02	7.2700e-03	-7.4969e-02	-0.0457
factor(calyear)2015	5.7741e-03	1.1399e-03	3.4834e-03	0.0081
factor(calyear)2016	1.4748e-02	1.3364e-03	1.2062e-02	0.0174
factor(calyear)2018	2.1737e-02	1.8272e-03	1.8065e-02	0.0254
factor(calyear)2019	3.3591e-02	1.9069e-03	2.9759e-02	0.0374
factor(calyear)2020	3.7302e-02	1.5195e-03	3.4249e-02	0.0404
combine_race_eth_fctBlack	-2.6132e-02	1.9349e-03	-3.0021e-02	-0.0222
combine_race_eth_fctAsian	8.6557e-03	3.7455e-03	1.1289e-03	0.0162
combine_race_eth_fctHispanic	-2.1656e-02	1.9007e-03	-2.5476e-02	-0.0178
combine_race_eth_fctOther	-6.9400e-03	4.0959e-03	-1.5171e-02	0.0013
	Pr(> t)			
(Intercept)	< 2.2e-16	***		
unempf12_6_fct1	1.965e-11	***		
educ3_fct2	< 2.2e-16	***		
educ3_fct3	< 2.2e-16	***		
educ3_fct4	< 2.2e-16	***		
sex_fctFemale	< 2.2e-16	***		
age	< 2.2e-16	***		
age2	< 2.2e-16	***		
immigrant_fctImmigrant	0.010202	*		
parent_fct1	7.311e-11	***		
industry2_fct2	3.400e-08	***		
industry2_fct3	1.770e-07	***		
industry2_fct4	4.193e-05	***		
industry2_fct5	9.487e-16	***		
industry2_fct6	3.953e-08	***		
industry2_fct7	0.001982	**		
industry2_fct8	8.959e-05	***		

```

industry2_fct9          3.732e-05 ***  

industry2_fct10         2.987e-16 ***  

industry2_fct11         < 2.2e-16 ***  

industry2_fct12         < 2.2e-16 ***  

industry2_fct13         6.611e-11 ***  

factor(calyear)2015     6.177e-06 ***  

factor(calyear)2016     6.922e-15 ***  

factor(calyear)2018     4.651e-16 ***  

factor(calyear)2019     < 2.2e-16 ***  

factor(calyear)2020     < 2.2e-16 ***  

combine_race_eth_fctBlack < 2.2e-16 ***  

combine_race_eth_fctAsian   0.025083 *  

combine_race_eth_fctHispanic 2.220e-15 ***  

combine_race_eth_fctOther    0.096544 .  

---  

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

tau = 0.75

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2505e+01	1.1195e-02	1.2482e+01	12.5274
unempf12_6_fct1	-2.6729e-02	3.0898e-03	-3.2939e-02	-0.0205
educ3_fct2	3.1420e-02	1.2381e-03	2.8932e-02	0.0339
educ3_fct3	9.8082e-02	1.8156e-03	9.4434e-02	0.1017
educ3_fct4	1.6628e-01	3.0644e-03	1.6012e-01	0.1724
sex_fctFemale	-4.9181e-02	1.7185e-03	-5.2635e-02	-0.0457
age	8.3804e-03	3.9471e-04	7.5872e-03	0.0092
age2	-8.1147e-05	4.6245e-06	-9.0440e-05	-0.0001
immigrant_fctImmigrant	-6.1348e-03	2.2957e-03	-1.0748e-02	-0.0015
parent_fct1	1.4891e-02	1.7998e-03	1.1274e-02	0.0185
industry2_fct2	-5.1791e-02	7.9167e-03	-6.7700e-02	-0.0359
industry2_fct3	-4.5149e-02	7.4273e-03	-6.0075e-02	-0.0302
industry2_fct4	-3.8027e-02	8.4505e-03	-5.5009e-02	-0.0210
industry2_fct5	-8.0694e-02	6.9171e-03	-9.4594e-02	-0.0668
industry2_fct6	-4.3613e-02	6.7100e-03	-5.7097e-02	-0.0301
industry2_fct7	-3.2817e-02	1.0041e-02	-5.2995e-02	-0.0126
industry2_fct8	-3.2164e-02	7.5334e-03	-4.7303e-02	-0.0170
industry2_fct9	-3.4634e-02	7.6371e-03	-4.9981e-02	-0.0193
industry2_fct10	-8.5529e-02	7.1035e-03	-9.9804e-02	-0.0713
industry2_fct11	-9.1879e-02	7.2598e-03	-1.0647e-01	-0.0773
industry2_fct12	-9.3819e-02	6.8462e-03	-1.0758e-01	-0.0801
industry2_fct13	-6.0359e-02	7.2700e-03	-7.4969e-02	-0.0457

factor(calyear)2015	5.7741e-03	1.1399e-03	3.4834e-03	0.0081							
factor(calyear)2016	1.4748e-02	1.3364e-03	1.2062e-02	0.0174							
factor(calyear)2018	2.1737e-02	1.8272e-03	1.8065e-02	0.0254							
factor(calyear)2019	3.3591e-02	1.9069e-03	2.9759e-02	0.0374							
factor(calyear)2020	3.7302e-02	1.5195e-03	3.4249e-02	0.0404							
combine_race_eth_fctBlack	-2.6132e-02	1.9349e-03	-3.0021e-02	-0.0222							
combine_race_eth_fctAsian	8.6557e-03	3.7455e-03	1.1289e-03	0.0162							
combine_race_eth_fctHispanic	-2.1656e-02	1.9007e-03	-2.5476e-02	-0.0178							
combine_race_eth_fctOther	-6.9400e-03	4.0959e-03	-1.5171e-02	0.0013							
	Pr(> t)										
(Intercept)	< 2.2e-16	***									
unempf12_6_fct1	1.965e-11	***									
educ3_fct2	< 2.2e-16	***									
educ3_fct3	< 2.2e-16	***									
educ3_fct4	< 2.2e-16	***									
sex_fctFemale	< 2.2e-16	***									
age	< 2.2e-16	***									
age2	< 2.2e-16	***									
immigrant_fctImmigrant	0.010202	*									
parent_fct1	7.311e-11	***									
industry2_fct2	3.400e-08	***									
industry2_fct3	1.770e-07	***									
industry2_fct4	4.193e-05	***									
industry2_fct5	9.487e-16	***									
industry2_fct6	3.953e-08	***									
industry2_fct7	0.001982	**									
industry2_fct8	8.959e-05	***									
industry2_fct9	3.732e-05	***									
industry2_fct10	2.987e-16	***									
industry2_fct11	< 2.2e-16	***									
industry2_fct12	< 2.2e-16	***									
industry2_fct13	6.611e-11	***									
factor(calyear)2015	6.177e-06	***									
factor(calyear)2016	6.922e-15	***									
factor(calyear)2018	4.651e-16	***									
factor(calyear)2019	< 2.2e-16	***									
factor(calyear)2020	< 2.2e-16	***									
combine_race_eth_fctBlack	< 2.2e-16	***									
combine_race_eth_fctAsian	0.025083	*									
combine_race_eth_fctHispanic	2.220e-15	***									
combine_race_eth_fctOther	0.096544	.									

Signif. codes:	0	'***'	0.001	'**'	0.01	'*'	0.05	'..'	0.1	' '	1

tau = 0.9

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2526e+01	1.1223e-02	1.2504e+01	12.5488
unempf12_6_fct1	5.1002e-02	3.0550e-03	4.4862e-02	0.0571
educ3_fct2	7.3307e-02	1.1949e-03	7.0905e-02	0.0757
educ3_fct3	1.4160e-01	1.7771e-03	1.3803e-01	0.1452
educ3_fct4	2.4401e-01	3.0188e-03	2.3794e-01	0.2501
sex_fctFemale	-8.4237e-03	1.7685e-03	-1.1978e-02	-0.0049
age	8.7762e-03	3.9396e-04	7.9845e-03	0.0096
age2	-7.0769e-05	4.6435e-06	-8.0100e-05	-0.0001
immigrant_fct1Immigrant	3.8936e-02	2.2375e-03	3.4439e-02	0.0434
parent_fct1	3.9383e-02	1.8214e-03	3.5723e-02	0.0430
industry2_fct2	2.5940e-02	7.9455e-03	9.9731e-03	0.0419
industry2_fct3	3.2582e-02	8.9312e-03	1.4635e-02	0.0505
industry2_fct4	3.9704e-02	8.4355e-03	2.2752e-02	0.0567
industry2_fct5	-2.9626e-03	6.9423e-03	-1.6914e-02	0.0110
industry2_fct6	3.4118e-02	6.7116e-03	2.0630e-02	0.0476
industry2_fct7	4.4914e-02	1.0014e-02	2.4790e-02	0.0650
industry2_fct8	4.5567e-02	7.5238e-03	3.0448e-02	0.0607
industry2_fct9	4.3097e-02	7.6453e-03	2.7734e-02	0.0585
industry2_fct10	-4.2548e-02	7.1222e-03	-5.6861e-02	-0.0282
industry2_fct11	-1.4148e-02	7.2548e-03	-2.8727e-02	0.0004
industry2_fct12	-1.6088e-02	6.8652e-03	-2.9884e-02	-0.0023
industry2_fct13	1.7372e-02	7.2792e-03	2.7438e-03	0.0320
factor(calyear)2015	4.9816e-02	1.1576e-03	4.7490e-02	0.0521
factor(calyear)2016	6.0321e-02	1.3710e-03	5.7566e-02	0.0631
factor(calyear)2018	6.8772e-02	1.8044e-03	6.5146e-02	0.0724
factor(calyear)2019	8.1098e-02	7.2220e-03	6.6584e-02	0.0956
factor(calyear)2020	8.1863e-02	1.4903e-03	7.8868e-02	0.0849
combine_race_eth_fctBlack	5.1599e-02	2.0039e-03	4.7572e-02	0.0556
combine_race_eth_fctAsian	8.6387e-02	3.8532e-03	7.8644e-02	0.0941
combine_race_eth_fctHispanic	2.4412e-02	1.9288e-03	2.0536e-02	0.0283
combine_race_eth_fctOther	7.0791e-02	4.1346e-03	6.2482e-02	0.0791
	Pr(> t)			
(Intercept)	< 2.2e-16	***		
unempf12_6_fct1	< 2.2e-16	***		
educ3_fct2	< 2.2e-16	***		
educ3_fct3	< 2.2e-16	***		
educ3_fct4	< 2.2e-16	***		
sex_fctFemale	1.734e-05	***		

```

age < 2.2e-16 ***
age2 < 2.2e-16 ***
immigrant_fctImmigrant < 2.2e-16 ***
parent_fct1 < 2.2e-16 ***
industry2_fct2 0.0020018 **
industry2_fct3 0.0006396 ***
industry2_fct4 2.098e-05 ***
industry2_fct5 0.6714328
industry2_fct6 5.808e-06 ***
industry2_fct7 4.405e-05 ***
industry2_fct8 1.915e-07 ***
industry2_fct9 8.437e-07 ***
industry2_fct10 2.567e-07 ***
industry2_fct11 0.0568940 .
industry2_fct12 0.0232104 *
industry2_fct13 0.0209151 *
factor(calyear)2015 < 2.2e-16 ***
factor(calyear)2016 < 2.2e-16 ***
factor(calyear)2018 < 2.2e-16 ***
factor(calyear)2019 3.734e-15 ***
factor(calyear)2020 < 2.2e-16 ***
combine_race_eth_fctBlack < 2.2e-16 ***
combine_race_eth_fctAsian < 2.2e-16 ***
combine_race_eth_fctHispanic < 2.2e-16 ***
combine_race_eth_fctOther < 2.2e-16 ***
---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

AIC:

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[1] -2303 (df = 33) -15688 (df = 33) -51867 (df = 33) -28103 (df = 33)
[5] -34328 (df = 33)

```

Full Sample Initial Status

```

Call: lqmm(fixed = ln_tpearn ~ mode_status_f12v2_fct + educ3_fct +
    sex_fct + age + age2 + immigrant_fct + parent_fct + industry2_fct +
    factor(calyear) + combine_race_eth_fct, random = ~1, group = +ssuid_spanel_pnum_id,
    tau = c(0.1, 0.25, 0.5, 0.75, 0.9), data = earnings, control = lqmmControl(method = "df"))

```

```
tau = 0.1
```

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2452e+01	1.5064e-02	1.2421e+01	12.4818
mode_status_f12v2_fctSE	4.8711e-02	1.9356e-02	9.8128e-03	0.0876
mode_status_f12v2_fctUnemp	4.9158e-02	2.0093e-02	8.7790e-03	0.0895
educ3_fct2	4.4541e-02	7.6640e-03	2.9140e-02	0.0599
educ3_fct3	8.4509e-02	9.7732e-03	6.4869e-02	0.1041
educ3_fct4	1.6081e-01	1.5075e-02	1.3051e-01	0.1911
sex_fctFemale	-4.2112e-02	5.6144e-03	-5.3395e-02	-0.0308
age	5.8976e-03	4.5772e-04	4.9777e-03	0.0068
age2	-1.0657e-04	8.9785e-06	-1.2461e-04	-0.0001
immigrant_fctImmigrant	-2.9910e-02	1.0930e-02	-5.1874e-02	-0.0079
parent_fct1	1.1131e-03	1.1257e-02	-2.1508e-02	0.0237
industry2_fct2	3.5363e-02	2.2267e-02	-9.3847e-03	0.0801
industry2_fct3	6.8657e-03	1.3358e-02	-1.9978e-02	0.0337
industry2_fct4	1.1730e-01	2.6665e-02	6.3717e-02	0.1709
industry2_fct5	-2.9632e-02	1.4996e-02	-5.9767e-02	0.0005
industry2_fct6	6.8800e-02	2.6054e-02	1.6443e-02	0.1212
industry2_fct7	1.1818e-01	5.7038e-02	3.5595e-03	0.2328
industry2_fct8	5.9004e-02	2.1376e-02	1.6046e-02	0.1020
industry2_fct9	-1.1309e-02	1.4429e-02	-4.0306e-02	0.0177
industry2_fct10	-3.9063e-02	1.5046e-02	-6.9298e-02	-0.0088
industry2_fct11	-2.6764e-02	1.0688e-02	-4.8242e-02	-0.0053
industry2_fct12	1.0865e-02	2.8899e-02	-4.7211e-02	0.0689
industry2_fct13	2.8944e-02	2.3948e-02	-1.9181e-02	0.0771
factor(calyear)2015	9.2517e-03	7.8643e-03	-6.5523e-03	0.0251
factor(calyear)2016	1.7071e-02	6.8211e-03	3.3634e-03	0.0308
factor(calyear)2018	1.0906e-02	1.6425e-02	-2.2101e-02	0.0439
factor(calyear)2019	7.2188e-02	1.8251e-02	3.5510e-02	0.1089
factor(calyear)2020	3.6421e-02	1.4237e-02	7.8105e-03	0.0650
combine_race_eth_fctBlack	2.0269e-02	1.1339e-02	-2.5180e-03	0.0431
combine_race_eth_fctAsian	6.9071e-02	2.1689e-02	2.5485e-02	0.1127
combine_race_eth_fctHispanic	-1.6301e-02	1.1808e-02	-4.0030e-02	0.0074
combine_race_eth_fctOther	1.0975e-01	2.6189e-02	5.7116e-02	0.1624
	Pr(> t)			
(Intercept)	< 2.2e-16	***		
mode_status_f12v2_fctSE	0.0151755	*		
mode_status_f12v2_fctUnemp	0.0180605	*		
educ3_fct2	4.557e-07	***		
educ3_fct3	1.992e-11	***		
educ3_fct4	2.261e-14	***		
sex_fctFemale	1.116e-09	***		
age	< 2.2e-16	***		
age2	5.051e-16	***		

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immigrant_fctImmigrant      0.0086262  **
parent_fct1                  0.9216311
industry2_fct2                0.1186920
industry2_fct3                0.6095739
industry2_fct4                5.855e-05 ***
industry2_fct5                0.0537950 .
industry2_fct6                0.0110697 *
industry2_fct7                0.0435515 *
industry2_fct8                0.0081028 **
industry2_fct9                0.4369539
industry2_fct10               0.0124028 *
industry2_fct11               0.0156524 *
industry2_fct12               0.7085794
industry2_fct13               0.2326057
factor(calyear)2015            0.2451133
factor(calyear)2016            0.0157108 *
factor(calyear)2018            0.5098189
factor(calyear)2019            0.0002461 ***
factor(calyear)2020            0.0136650 *
combine_race_eth_fctBlack     0.0800405 .
combine_race_eth_fctAsian     0.0025206 **
combine_race_eth_fctHispanic   0.1736812
combine_race_eth_fctOther      0.0001158 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

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tau = 0.25

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2498e+01	1.0471e-02	1.2477e+01	12.5195
mode_status_f12v2_fctSE	-1.5854e-02	4.8026e-03	-2.5505e-02	-0.0062
mode_status_f12v2_fctUnemp	-2.9317e-02	2.8919e-03	-3.5128e-02	-0.0235
educ3_fct2	3.0459e-02	1.5586e-03	2.7327e-02	0.0336
educ3_fct3	9.8909e-02	1.9693e-03	9.4952e-02	0.1029
educ3_fct4	1.6783e-01	2.6208e-03	1.6256e-01	0.1731
sex_fctFemale	-5.3665e-02	1.6925e-03	-5.7067e-02	-0.0503
age	8.3678e-03	3.9575e-04	7.5725e-03	0.0092
age2	-8.2130e-05	4.7954e-06	-9.1767e-05	-0.0001
immigrant_fctImmigrant	-1.0378e-02	2.8809e-03	-1.6167e-02	-0.0046
parent_fct1	1.8154e-02	2.0225e-03	1.4089e-02	0.0222
industry2_fct2	-4.7165e-02	1.0211e-02	-6.7685e-02	-0.0266
industry2_fct3	-3.7018e-02	8.9422e-03	-5.4988e-02	-0.0190

industry2_fct4	-2.4299e-02	1.0682e-02	-4.5765e-02	-0.0028
industry2_fct5	-7.1686e-02	9.0420e-03	-8.9856e-02	-0.0535
industry2_fct6	-3.5552e-02	9.4236e-03	-5.4490e-02	-0.0166
industry2_fct7	-3.0154e-02	1.1845e-02	-5.3958e-02	-0.0063
industry2_fct8	-1.5994e-02	9.4184e-03	-3.4921e-02	0.0029
industry2_fct9	-2.8651e-02	8.5006e-03	-4.5733e-02	-0.0116
industry2_fct10	-7.3010e-02	9.0384e-03	-9.1174e-02	-0.0548
industry2_fct11	-8.1882e-02	9.3485e-03	-1.0067e-01	-0.0631
industry2_fct12	-9.1477e-02	9.2216e-03	-1.1001e-01	-0.0729
industry2_fct13	-5.0963e-02	9.2147e-03	-6.9481e-02	-0.0324
factor(calyear)2015	4.5343e-03	1.7479e-03	1.0218e-03	0.0080
factor(calyear)2016	1.4376e-02	1.5461e-03	1.1269e-02	0.0175
factor(calyear)2018	2.3907e-02	1.9541e-03	1.9980e-02	0.0278
factor(calyear)2019	3.6581e-02	1.6582e-03	3.3249e-02	0.0399
factor(calyear)2020	3.6278e-02	1.8888e-03	3.2482e-02	0.0401
combine_race_eth_fctBlack	-2.8692e-02	2.0053e-03	-3.2721e-02	-0.0247
combine_race_eth_fctAsian	1.0428e-02	4.0979e-03	2.1927e-03	0.0187
combine_race_eth_fctHispanic	-2.2140e-02	2.4286e-03	-2.7021e-02	-0.0173
combine_race_eth_fctOther	-8.2629e-03	4.5651e-03	-1.7437e-02	0.0009
	Pr(> t)			
(Intercept)	< 2.2e-16	***		
mode_status_f12v2_fctSE	0.0018016	**		
mode_status_f12v2_fctUnemp	1.277e-13	***		
educ3_fct2	< 2.2e-16	***		
educ3_fct3	< 2.2e-16	***		
educ3_fct4	< 2.2e-16	***		
sex_fctFemale	< 2.2e-16	***		
age	< 2.2e-16	***		
age2	< 2.2e-16	***		
immigrant_fctImmigrant	0.0007358	***		
parent_fct1	6.401e-12	***		
industry2_fct2	2.818e-05	***		
industry2_fct3	0.0001365	***		
industry2_fct4	0.0273261	*		
industry2_fct5	2.461e-10	***		
industry2_fct6	0.0004361	***		
industry2_fct7	0.0141052	*		
industry2_fct8	0.0958305	.		
industry2_fct9	0.0014710	**		
industry2_fct10	1.453e-10	***		
industry2_fct11	1.353e-11	***		
industry2_fct12	2.628e-13	***		
industry2_fct13	1.226e-06	***		

```

factor(calyear)2015          0.0124704 *
factor(calyear)2016          2.127e-12 ***
factor(calyear)2018          < 2.2e-16 ***
factor(calyear)2019          < 2.2e-16 ***
factor(calyear)2020          < 2.2e-16 ***
combine_race_eth_fctBlack   < 2.2e-16 ***
combine_race_eth_fctAsian   0.0141391 *
combine_race_eth_fctHispanic 3.954e-12 ***
combine_race_eth_fctOther    0.0764277 .

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

$\tau = 0.5$

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2498e+01	1.0471e-02	1.2477e+01	12.5195
mode_status_f12v2_fctSE	-1.5854e-02	4.8026e-03	-2.5505e-02	-0.0062
mode_status_f12v2_fctUnemp	-2.9317e-02	2.8919e-03	-3.5128e-02	-0.0235
educ3_fct2	3.0459e-02	1.5586e-03	2.7327e-02	0.0336
educ3_fct3	9.8909e-02	1.9693e-03	9.4952e-02	0.1029
educ3_fct4	1.6783e-01	2.6208e-03	1.6256e-01	0.1731
sex_fctFemale	-5.3665e-02	1.6925e-03	-5.7067e-02	-0.0503
age	8.3678e-03	3.9575e-04	7.5725e-03	0.0092
age2	-8.2130e-05	4.7954e-06	-9.1767e-05	-0.0001
immigrant_fctImmigrant	-1.0378e-02	2.8809e-03	-1.6167e-02	-0.0046
parent_fct1	1.8154e-02	2.0225e-03	1.4089e-02	0.0222
industry2_fct2	-4.7165e-02	1.0211e-02	-6.7685e-02	-0.0266
industry2_fct3	-3.7018e-02	8.9422e-03	-5.4988e-02	-0.0190
industry2_fct4	-2.4299e-02	1.0682e-02	-4.5765e-02	-0.0028
industry2_fct5	-7.1686e-02	9.0420e-03	-8.9856e-02	-0.0535
industry2_fct6	-3.5552e-02	9.4236e-03	-5.4490e-02	-0.0166
industry2_fct7	-3.0154e-02	1.1845e-02	-5.3958e-02	-0.0063
industry2_fct8	-1.5994e-02	9.4184e-03	-3.4921e-02	0.0029
industry2_fct9	-2.8651e-02	8.5006e-03	-4.5733e-02	-0.0116
industry2_fct10	-7.3010e-02	9.0384e-03	-9.1174e-02	-0.0548
industry2_fct11	-8.1882e-02	9.3485e-03	-1.0067e-01	-0.0631
industry2_fct12	-9.1477e-02	9.2216e-03	-1.1001e-01	-0.0729
industry2_fct13	-5.0963e-02	9.2147e-03	-6.9481e-02	-0.0324
factor(calyear)2015	4.5343e-03	1.7479e-03	1.0218e-03	0.0080
factor(calyear)2016	1.4376e-02	1.5461e-03	1.1269e-02	0.0175
factor(calyear)2018	2.3907e-02	1.9541e-03	1.9980e-02	0.0278
factor(calyear)2019	3.6581e-02	1.6582e-03	3.3249e-02	0.0399

```

factor(calyear)2020          3.6278e-02  1.8888e-03  3.2482e-02  0.0401
combine_race_eth_fctBlack   -2.8692e-02  2.0053e-03 -3.2721e-02 -0.0247
combine_race_eth_fctAsian   1.0428e-02  4.0979e-03  2.1927e-03  0.0187
combine_race_eth_fctHispanic -2.2140e-02  2.4286e-03 -2.7021e-02 -0.0173
combine_race_eth_fctOther    -8.2629e-03  4.5651e-03 -1.7437e-02  0.0009
                                         Pr(>|t|)

(Intercept) < 2.2e-16 ***
mode_status_f12v2_fctSE     0.0018016 **
mode_status_f12v2_fctUnemp   1.277e-13 ***
educ3_fct2                  < 2.2e-16 ***
educ3_fct3                  < 2.2e-16 ***
educ3_fct4                  < 2.2e-16 ***
sex_fctFemale                < 2.2e-16 ***
age                         < 2.2e-16 ***
age2                        < 2.2e-16 ***
immigrant_fctImmigrant      0.0007358 ***
parent_fct1                 6.401e-12 ***
industry2_fct2               2.818e-05 ***
industry2_fct3               0.0001365 ***
industry2_fct4               0.0273261 *
industry2_fct5               2.461e-10 ***
industry2_fct6               0.0004361 ***
industry2_fct7               0.0141052 *
industry2_fct8               0.0958305 .
industry2_fct9               0.0014710 **
industry2_fct10              1.453e-10 ***
industry2_fct11              1.353e-11 ***
industry2_fct12              2.628e-13 ***
industry2_fct13              1.226e-06 ***
factor(calyear)2015           0.0124704 *
factor(calyear)2016           2.127e-12 ***
factor(calyear)2018           < 2.2e-16 ***
factor(calyear)2019           < 2.2e-16 ***
factor(calyear)2020           < 2.2e-16 ***
combine_race_eth_fctBlack   < 2.2e-16 ***
combine_race_eth_fctAsian   0.0141391 *
combine_race_eth_fctHispanic 3.954e-12 ***
combine_race_eth_fctOther    0.0764277 .

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

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tau = 0.75

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2498e+01	1.0471e-02	1.2477e+01	12.5195
mode_status_f12v2_fctSE	-1.5854e-02	4.8026e-03	-2.5505e-02	-0.0062
mode_status_f12v2_fctUnemp	-2.9317e-02	2.8919e-03	-3.5128e-02	-0.0235
educ3_fct2	3.0459e-02	1.5586e-03	2.7327e-02	0.0336
educ3_fct3	9.8909e-02	1.9693e-03	9.4952e-02	0.1029
educ3_fct4	1.6783e-01	2.6208e-03	1.6256e-01	0.1731
sex_fctFemale	-5.3665e-02	1.6925e-03	-5.7067e-02	-0.0503
age	8.3678e-03	3.9575e-04	7.5725e-03	0.0092
age2	-8.2130e-05	4.7954e-06	-9.1767e-05	-0.0001
immigrant_fctImmigrant	-1.0378e-02	2.8809e-03	-1.6167e-02	-0.0046
parent_fct1	1.8154e-02	2.0225e-03	1.4089e-02	0.0222
industry2_fct2	-4.7165e-02	1.0211e-02	-6.7685e-02	-0.0266
industry2_fct3	-3.7018e-02	8.9422e-03	-5.4988e-02	-0.0190
industry2_fct4	-2.4299e-02	1.0682e-02	-4.5765e-02	-0.0028
industry2_fct5	-7.1686e-02	9.0420e-03	-8.9856e-02	-0.0535
industry2_fct6	-3.5552e-02	9.4236e-03	-5.4490e-02	-0.0166
industry2_fct7	-3.0154e-02	1.1845e-02	-5.3958e-02	-0.0063
industry2_fct8	-1.5994e-02	9.4184e-03	-3.4921e-02	0.0029
industry2_fct9	-2.8651e-02	8.5006e-03	-4.5733e-02	-0.0116
industry2_fct10	-7.3010e-02	9.0384e-03	-9.1174e-02	-0.0548
industry2_fct11	-8.1882e-02	9.3485e-03	-1.0067e-01	-0.0631
industry2_fct12	-9.1477e-02	9.2216e-03	-1.1001e-01	-0.0729
industry2_fct13	-5.0963e-02	9.2147e-03	-6.9481e-02	-0.0324
factor(calyear)2015	4.5343e-03	1.7479e-03	1.0218e-03	0.0080
factor(calyear)2016	1.4376e-02	1.5461e-03	1.1269e-02	0.0175
factor(calyear)2018	2.3907e-02	1.9541e-03	1.9980e-02	0.0278
factor(calyear)2019	3.6581e-02	1.6582e-03	3.3249e-02	0.0399
factor(calyear)2020	3.6278e-02	1.8888e-03	3.2482e-02	0.0401
combine_race_eth_fctBlack	-2.8692e-02	2.0053e-03	-3.2721e-02	-0.0247
combine_race_eth_fctAsian	1.0428e-02	4.0979e-03	2.1927e-03	0.0187
combine_race_eth_fctHispanic	-2.2140e-02	2.4286e-03	-2.7021e-02	-0.0173
combine_race_eth_fctOther	-8.2629e-03	4.5651e-03	-1.7437e-02	0.0009
	Pr(> t)			
(Intercept)	< 2.2e-16	***		
mode_status_f12v2_fctSE	0.0018016	**		
mode_status_f12v2_fctUnemp	1.277e-13	***		
educ3_fct2	< 2.2e-16	***		
educ3_fct3	< 2.2e-16	***		
educ3_fct4	< 2.2e-16	***		
sex_fctFemale	< 2.2e-16	***		
age	< 2.2e-16	***		

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age2 < 2.2e-16 ***
immigrant_fctImmigrant 0.0007358 ***
parent_fct1 6.401e-12 ***
industry2_fct2 2.818e-05 ***
industry2_fct3 0.0001365 ***
industry2_fct4 0.0273261 *
industry2_fct5 2.461e-10 ***
industry2_fct6 0.0004361 ***
industry2_fct7 0.0141052 *
industry2_fct8 0.0958305 .
industry2_fct9 0.0014710 **
industry2_fct10 1.453e-10 ***
industry2_fct11 1.353e-11 ***
industry2_fct12 2.628e-13 ***
industry2_fct13 1.226e-06 ***
factor(calyear)2015 0.0124704 *
factor(calyear)2016 2.127e-12 ***
factor(calyear)2018 < 2.2e-16 ***
factor(calyear)2019 < 2.2e-16 ***
factor(calyear)2020 < 2.2e-16 ***
combine_race_eth_fctBlack < 2.2e-16 ***
combine_race_eth_fctAsian 0.0141391 *
combine_race_eth_fctHispanic 3.954e-12 ***
combine_race_eth_fctOther 0.0764277 .

---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

tau = 0.9

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2504e+01	1.0690e-02	1.2483e+01	12.5260
mode_status_f12v2_fctSE	2.4342e-02	1.0194e-02	3.8562e-03	0.0448
mode_status_f12v2_fctUnemp	2.2534e-02	6.6151e-03	9.2409e-03	0.0358
educ3_fct2	4.0120e-02	8.0209e-03	2.4001e-02	0.0562
educ3_fct3	1.3307e-01	3.4530e-03	1.2613e-01	0.1400
educ3_fct4	2.1722e-01	5.7540e-03	2.0566e-01	0.2288
sex_fctFemale	-2.8410e-02	7.5865e-03	-4.3656e-02	-0.0132
age	8.4650e-03	3.9845e-04	7.6643e-03	0.0093
age2	-7.7524e-05	4.6836e-06	-8.6936e-05	-0.0001
immigrant_fctImmigrant	1.9857e-02	1.8081e-02	-1.6479e-02	0.0562
parent_fct1	2.5848e-02	3.7240e-03	1.8364e-02	0.0333
industry2_fct2	7.9975e-03	1.2226e-02	-1.6572e-02	0.0326

industry2_fct3	1.6813e-02	9.9727e-03	-3.2281e-03	0.0369
industry2_fct4	4.4676e-02	1.2313e-02	1.9932e-02	0.0694
industry2_fct5	-1.5511e-02	9.6891e-03	-3.4982e-02	0.0040
industry2_fct6	3.6362e-02	1.0029e-02	1.6208e-02	0.0565
industry2_fct7	4.5468e-02	2.2973e-02	-6.9839e-04	0.0916
industry2_fct8	3.1995e-02	1.3849e-02	4.1641e-03	0.0598
industry2_fct9	3.2730e-02	1.0027e-02	1.2580e-02	0.0529
industry2_fct10	-4.1337e-02	9.8973e-03	-6.1226e-02	-0.0214
industry2_fct11	-3.7311e-02	9.9904e-03	-5.7388e-02	-0.0172
industry2_fct12	-1.6547e-02	9.8643e-03	-3.6370e-02	0.0033
industry2_fct13	2.3377e-02	1.2197e-02	-1.1349e-03	0.0479
factor(calyear)2015	3.9594e-02	4.6154e-03	3.0319e-02	0.0489
factor(calyear)2016	7.1092e-02	1.1294e-02	4.8396e-02	0.0938
factor(calyear)2018	7.2654e-02	4.4923e-03	6.3626e-02	0.0817
factor(calyear)2019	8.9979e-02	4.2066e-03	8.1526e-02	0.0984
factor(calyear)2020	6.3799e-02	6.9967e-03	4.9739e-02	0.0779
combine_race_eth_fctBlack	2.1979e-02	1.2306e-02	-2.7509e-03	0.0467
combine_race_eth_fctAsian	6.4557e-02	9.1648e-03	4.6140e-02	0.0830
combine_race_eth_fctHispanic	3.2527e-02	1.0958e-02	1.0507e-02	0.0545
combine_race_eth_fctOther	7.2735e-02	8.0762e-03	5.6506e-02	0.0890
	Pr(> t)			
(Intercept)	< 2.2e-16	***		
mode_status_f12v2_fctSE	0.0208476	*		
mode_status_f12v2_fctUnemp	0.0013224	**		
educ3_fct2	7.685e-06	***		
educ3_fct3	< 2.2e-16	***		
educ3_fct4	< 2.2e-16	***		
sex_fctFemale	0.0004753	***		
age	< 2.2e-16	***		
age2	< 2.2e-16	***		
immigrant_fctImmigrant	0.2774904			
parent_fct1	8.192e-09	***		
industry2_fct2	0.5160888			
industry2_fct3	0.0981783	.		
industry2_fct4	0.0006794	***		
industry2_fct5	0.1158420			
industry2_fct6	0.0006850	***		
industry2_fct7	0.0534298	.		
industry2_fct8	0.0251265	*		
industry2_fct9	0.0020050	**		
industry2_fct10	0.0001212	***		
industry2_fct11	0.0004903	***		
industry2_fct12	0.0998180	.		

```

industry2_fct13          0.0611395 .
factor(calyear)2015      2.526e-11 ***
factor(calyear)2016      8.211e-08 ***
factor(calyear)2018      < 2.2e-16 ***
factor(calyear)2019      < 2.2e-16 ***
factor(calyear)2020      3.930e-12 ***
combine_race_eth_fctBlack 0.0802823 .
combine_race_eth_fctAsian 5.669e-09 ***
combine_race_eth_fctHispanic 0.0046216 **
combine_race_eth_fctOther   5.773e-12 ***
---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

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AIC:

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[1] -32600 (df = 34) -5205 (df = 34) -45321 (df = 34) -21760 (df = 34)
[5] -51564 (df = 34)

```

SE Sample Initial Status

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Call: lqmm(fixed = ln_tpearn ~ mode_status_f12v2_fct + educ3_fct +
sex_fct + age + age2 + immigrant_fct + parent_fct + industry2_fct +
factor(calyear) + combine_race_eth_fct, random = ~1, group = +ssuid_spanel_pnum_id,
tau = c(0.1, 0.25, 0.5, 0.75, 0.9), data = subset(earnings,
pct_se_after_12 == 1), control = lqmmControl(method = "df"))

```

tau = 0.1

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2210e+01	1.3937e-01	1.1929e+01	12.4896
mode_status_f12v2_fctSE	-2.5101e-02	3.9627e-02	-1.0473e-01	0.0545
mode_status_f12v2_fctUnemp	3.3250e-04	7.4365e-02	-1.4911e-01	0.1498
educ3_fct2	9.1794e-02	2.4387e-02	4.2786e-02	0.1408
educ3_fct3	1.3290e-01	3.1497e-02	6.9604e-02	0.1962
educ3_fct4	1.6508e-01	6.4395e-02	3.5674e-02	0.2945
sex_fctFemale	-3.4116e-02	3.6521e-02	-1.0751e-01	0.0393
age	9.7415e-03	4.0844e-03	1.5336e-03	0.0179
age2	-1.7078e-04	3.9419e-05	-2.5000e-04	-0.0001
immigrant_fctImmigrant	7.9686e-03	4.1328e-02	-7.5083e-02	0.0910
parent_fct1	-7.7509e-03	3.7624e-02	-8.3360e-02	0.0679
industry2_fct2	1.7091e-01	4.4945e-02	8.0586e-02	0.2612
industry2_fct3	1.5489e-01	4.9896e-02	5.4621e-02	0.2552

industry2_fct4	1.8756e-01	5.2634e-02	8.1792e-02	0.2933
industry2_fct5	1.9868e-01	3.9285e-02	1.1973e-01	0.2776
industry2_fct6	2.0099e-01	4.1890e-02	1.1681e-01	0.2852
industry2_fct7	7.4846e-02	7.7926e-02	-8.1753e-02	0.2314
industry2_fct8	2.0613e-01	4.2600e-02	1.2052e-01	0.2917
industry2_fct9	1.4396e-01	5.4105e-02	3.5234e-02	0.2527
industry2_fct10	1.4562e-01	5.1245e-02	4.2641e-02	0.2486
industry2_fct11	1.9490e-01	4.7453e-02	9.9542e-02	0.2903
industry2_fct12	1.3374e-01	4.2718e-02	4.7891e-02	0.2196
industry2_fct13	7.6938e-01	5.2191e-01	-2.7944e-01	1.8182
factor(calyear)2015	1.3176e-03	2.2422e-02	-4.3741e-02	0.0464
factor(calyear)2016	-4.1834e-03	1.9078e-02	-4.2523e-02	0.0342
factor(calyear)2018	2.6548e-02	2.5125e-02	-2.3942e-02	0.0770
factor(calyear)2019	4.1175e-02	3.0490e-02	-2.0097e-02	0.1024
factor(calyear)2020	2.6663e-02	2.3657e-02	-2.0878e-02	0.0742
combine_race_eth_fctBlack	4.7476e-02	3.7804e-02	-2.8495e-02	0.1234
combine_race_eth_fctAsian	8.1619e-02	4.5734e-02	-1.0287e-02	0.1735
combine_race_eth_fctHispanic	1.6673e-02	2.7506e-02	-3.8601e-02	0.0719
combine_race_eth_fctOther	6.7417e-02	1.0084e-01	-1.3523e-01	0.2701
	Pr(> t)			
(Intercept)	< 2.2e-16	***		
mode_status_f12v2_fctSE	0.5293975			
mode_status_f12v2_fctUnemp	0.9964506			
educ3_fct2	0.0004479	***		
educ3_fct3	0.0001054	***		
educ3_fct4	0.0134794	*		
sex_fctFemale	0.3548119			
age	0.0209892	*		
age2	7.292e-05	***		
immigrant_fctImmigrant	0.8479020			
parent_fct1	0.8376389			
industry2_fct2	0.0003973	***		
industry2_fct3	0.0031659	**		
industry2_fct4	0.0008271	***		
industry2_fct5	6.352e-06	***		
industry2_fct6	1.540e-05	***		
industry2_fct7	0.3415317			
industry2_fct8	1.342e-05	***		
industry2_fct9	0.0105093	*		
industry2_fct10	0.0065226	**		
industry2_fct11	0.0001515	***		
industry2_fct12	0.0029384	**		
industry2_fct13	0.1468359			

```

factor(calyear)2015          0.9533795
factor(calyear)2016          0.8273465
factor(calyear)2018          0.2958549
factor(calyear)2019          0.1830758
factor(calyear)2020          0.2652170
combine_race_eth_fctBlack    0.2151345
combine_race_eth_fctAsian    0.0805109 .
combine_race_eth_fctHispanic 0.5472013
combine_race_eth_fctOther    0.5069133
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

tau = 0.25

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2170e+01	9.6870e-02	1.1976e+01	12.3651
mode_status_f12v2_fctSE	5.9114e-03	2.7295e-02	-4.8939e-02	0.0608
mode_status_f12v2_fctUnemp	1.3835e-01	4.8448e-02	4.0991e-02	0.2357
educ3_fct2	5.5909e-02	2.5657e-02	4.3491e-03	0.1075
educ3_fct3	1.2517e-01	2.1629e-02	8.1700e-02	0.1686
educ3_fct4	1.9694e-01	2.5149e-02	1.4640e-01	0.2475
sex_fctFemale	-1.1521e-01	2.1897e-02	-1.5921e-01	-0.0712
age	1.0406e-02	4.1942e-03	1.9778e-03	0.0188
age2	-1.3935e-04	4.5131e-05	-2.3005e-04	0.0000
immigrant_fctImmigrant	-3.6666e-02	2.2245e-02	-8.1368e-02	0.0080
parent_fct1	3.5619e-02	2.7041e-02	-1.8723e-02	0.0900
industry2_fct2	5.7856e-02	3.9808e-02	-2.2141e-02	0.1379
industry2_fct3	1.1887e-01	4.5523e-02	2.7393e-02	0.2104
industry2_fct4	2.8465e-01	5.9874e-02	1.6433e-01	0.4050
industry2_fct5	6.7921e-02	5.0789e-02	-3.4144e-02	0.1700
industry2_fct6	1.3316e-01	4.4432e-02	4.3875e-02	0.2225
industry2_fct7	1.7374e-01	5.4592e-02	6.4035e-02	0.2834
industry2_fct8	1.9443e-01	5.7530e-02	7.8819e-02	0.3100
industry2_fct9	6.4259e-02	3.7232e-02	-1.0562e-02	0.1391
industry2_fct10	1.5246e-01	4.6916e-02	5.8177e-02	0.2467
industry2_fct11	7.6730e-02	4.4901e-02	-1.3502e-02	0.1670
industry2_fct12	7.1748e-02	4.5311e-02	-1.9307e-02	0.1628
industry2_fct13	2.8967e-01	1.8232e-01	-7.6707e-02	0.6561
factor(calyear)2015	1.8872e-02	2.9983e-02	-4.1381e-02	0.0791
factor(calyear)2016	6.9866e-02	2.4343e-02	2.0948e-02	0.1188
factor(calyear)2018	2.5645e-02	2.7447e-02	-2.9511e-02	0.0808
factor(calyear)2019	5.0271e-02	3.6830e-02	-2.3742e-02	0.1243

```

factor(calyear)2020          2.8200e-02  2.7093e-02 -2.6246e-02  0.0826
combine_race_eth_fctBlack    1.8249e-03  3.0641e-02 -5.9750e-02  0.0634
combine_race_eth_fctAsian    1.3455e-01  2.5050e-02  8.4213e-02  0.1849
combine_race_eth_fctHispanic 1.3399e-02  2.8847e-02 -4.4571e-02  0.0714
combine_race_eth_fctOther    1.8318e-01  5.5090e-02  7.2476e-02  0.2939
Pr(>|t|)

(Intercept)                  < 2.2e-16 ***
mode_status_f12v2_fctSE      0.829438
mode_status_f12v2_fctUnemp   0.006282 **
educ3_fct2                   0.034163 *
educ3_fct3                   4.976e-07 ***
educ3_fct4                   3.467e-10 ***
sex_fctFemale                3.135e-06 ***
age                          0.016577 *
age2                         0.003316 **
immigrant_fctImmigrant       0.105689
parent_fct1                  0.193899
industry2_fct2               0.152496
industry2_fct3               0.011936 *
industry2_fct4               1.788e-05 ***
industry2_fct5               0.187297
industry2_fct6               0.004271 **
industry2_fct7               0.002535 **
industry2_fct8               0.001432 **
industry2_fct9               0.090666 .
industry2_fct10              0.002092 **
industry2_fct11              0.093803 .
industry2_fct12              0.119749
industry2_fct13              0.118529
factor(calyear)2015           0.532002
factor(calyear)2016           0.006042 **
factor(calyear)2018           0.354700
factor(calyear)2019           0.178509
factor(calyear)2020           0.303058
combine_race_eth_fctBlack    0.952749
combine_race_eth_fctAsian    2.140e-06 ***
combine_race_eth_fctHispanic 0.644364
combine_race_eth_fctOther    0.001679 **

---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

```

tau = 0.5

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2240e+01	9.2906e-02	1.2053e+01	12.4268
mode_status_f12v2_fctSE	1.3256e-01	2.8685e-02	7.4916e-02	0.1902
mode_status_f12v2_fctUnemp	7.2803e-02	3.7890e-02	-3.3401e-03	0.1489
educ3_fct2	2.0562e-02	1.1061e-02	-1.6658e-03	0.0428
educ3_fct3	5.9046e-02	2.7000e-02	4.7881e-03	0.1133
educ3_fct4	1.7404e-01	2.0313e-02	1.3322e-01	0.2149
sex_fctFemale	-9.2882e-02	1.1335e-02	-1.1566e-01	-0.0701
age	1.1107e-02	4.1182e-03	2.8310e-03	0.0194
age2	-1.2835e-04	4.5154e-05	-2.1909e-04	0.0000
immigrant_fctImmigrant	-8.4496e-02	1.8783e-02	-1.2224e-01	-0.0467
parent_fct1	1.5696e-02	1.0633e-02	-5.6721e-03	0.0371
industry2_fct2	1.1807e-02	3.8518e-02	-6.5599e-02	0.0892
industry2_fct3	1.5365e-01	5.7081e-02	3.8938e-02	0.2684
industry2_fct4	2.5056e-01	5.8327e-02	1.3335e-01	0.3678
industry2_fct5	5.3130e-02	3.6790e-02	-2.0802e-02	0.1271
industry2_fct6	1.5154e-01	3.8452e-02	7.4273e-02	0.2288
industry2_fct7	1.1440e-01	4.2454e-02	2.9089e-02	0.1997
industry2_fct8	1.9313e-01	4.6149e-02	1.0039e-01	0.2859
industry2_fct9	1.1815e-02	3.7852e-02	-6.4251e-02	0.0879
industry2_fct10	1.0659e-01	4.0568e-02	2.5067e-02	0.1881
industry2_fct11	8.1518e-02	4.4098e-02	-7.1004e-03	0.1701
industry2_fct12	1.3213e-02	3.8041e-02	-6.3233e-02	0.0897
industry2_fct13	2.6826e-01	1.3147e-01	4.0612e-03	0.5325
factor(calyear)2015	-3.0902e-03	1.2640e-02	-2.8491e-02	0.0223
factor(calyear)2016	2.0226e-02	1.3312e-02	-6.5253e-03	0.0470
factor(calyear)2018	2.3204e-02	1.8487e-02	-1.3947e-02	0.0604
factor(calyear)2019	1.0512e-02	2.2729e-02	-3.5163e-02	0.0562
factor(calyear)2020	1.4888e-02	1.9168e-02	-2.3633e-02	0.0534
combine_race_eth_fctBlack	8.7905e-04	1.9698e-02	-3.8705e-02	0.0405
combine_race_eth_fctAsian	1.3974e-01	2.6811e-02	8.5858e-02	0.1936
combine_race_eth_fctHispanic	-3.8519e-02	1.8416e-02	-7.5527e-02	-0.0015
combine_race_eth_fctOther	1.2543e-01	4.4286e-02	3.6434e-02	0.2144
	Pr(> t)			
(Intercept)	< 2.2e-16	***		
mode_status_f12v2_fctSE	2.797e-05	***		
mode_status_f12v2_fctUnemp	0.0605048	.		
educ3_fct2	0.0690412	.		
educ3_fct3	0.0335520	*		
educ3_fct4	2.622e-11	***		
sex_fctFemale	9.664e-11	***		
age	0.0095658	**		

```

age2                      0.0065106  **
immigrant_fctImmigrant    4.215e-05 *** 
parent_fct1                 0.1463055
industry2_fct2                0.7604991
industry2_fct3                0.0096983  **
industry2_fct4                8.219e-05 *** 
industry2_fct5                0.1550607
industry2_fct6                0.0002573 *** 
industry2_fct7                0.0096219  **
industry2_fct8                0.0001180 *** 
industry2_fct9                0.7562610
industry2_fct10               0.0114520  *
industry2_fct11               0.0705600 .
industry2_fct12               0.7298251
industry2_fct13               0.0467115  *
factor(calyear)2015            0.8078806
factor(calyear)2016            0.1350910
factor(calyear)2018            0.2153803
factor(calyear)2019            0.6457635
factor(calyear)2020            0.4410834
combine_race_eth_fctBlack     0.9645858
combine_race_eth_fctAsian     3.726e-06 *** 
combine_race_eth_fctHispanic   0.0416795  *
combine_race_eth_fctOther      0.0066892 **

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Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

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tau = 0.75

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2290e+01	9.6507e-02	1.2096e+01	12.4838
mode_status_f12v2_fctSE	5.7229e-02	2.6220e-02	4.5368e-03	0.1099
mode_status_f12v2_fctUnemp	1.8229e-02	2.9163e-02	-4.0376e-02	0.0768
educ3_fct2	4.7432e-02	1.8378e-02	1.0501e-02	0.0844
educ3_fct3	1.3704e-01	2.0085e-02	9.6680e-02	0.1774
educ3_fct4	2.2560e-01	2.8101e-02	1.6913e-01	0.2821
sex_fctFemale	-1.0361e-01	1.1897e-02	-1.2752e-01	-0.0797
age	1.1739e-02	4.1369e-03	3.4255e-03	0.0201
age2	-1.2253e-04	4.6128e-05	-2.1523e-04	0.0000
immigrant_fctImmigrant	-7.0535e-02	1.5133e-02	-1.0095e-01	-0.0401
parent_fct1	5.6154e-02	1.4469e-02	2.7076e-02	0.0852
industry2_fct2	6.6377e-02	3.7941e-02	-9.8675e-03	0.1426

industry2_fct3	9.4515e-02	4.7091e-02	-1.1754e-04	0.1891
industry2_fct4	1.7707e-01	5.2255e-02	7.2057e-02	0.2821
industry2_fct5	6.5582e-02	3.4595e-02	-3.9387e-03	0.1351
industry2_fct6	1.0396e-01	4.2045e-02	1.9464e-02	0.1884
industry2_fct7	3.8325e-02	6.2424e-02	-8.7120e-02	0.1638
industry2_fct8	1.7084e-01	5.3544e-02	6.3238e-02	0.2784
industry2_fct9	7.7771e-02	3.8927e-02	-4.5630e-04	0.1560
industry2_fct10	1.2762e-01	4.7769e-02	3.1626e-02	0.2236
industry2_fct11	4.9241e-02	3.8769e-02	-2.8668e-02	0.1271
industry2_fct12	2.6253e-02	3.9753e-02	-5.3634e-02	0.1061
industry2_fct13	7.2365e-01	5.6989e-01	-4.2158e-01	1.8689
factor(calyear)2015	2.4519e-02	1.2936e-02	-1.4763e-03	0.0505
factor(calyear)2016	3.7795e-02	1.2654e-02	1.2366e-02	0.0632
factor(calyear)2018	6.7405e-02	1.5630e-02	3.5995e-02	0.0988
factor(calyear)2019	8.4306e-02	1.8729e-02	4.6668e-02	0.1219
factor(calyear)2020	4.1057e-02	1.2921e-02	1.5091e-02	0.0670
combine_race_eth_fctBlack	-1.2983e-02	1.9249e-02	-5.1665e-02	0.0257
combine_race_eth_fctAsian	6.3071e-02	2.8763e-02	5.2689e-03	0.1209
combine_race_eth_fctHispanic	-2.1875e-03	1.2259e-02	-2.6823e-02	0.0224
combine_race_eth_fctOther	5.1770e-02	4.3090e-02	-3.4824e-02	0.1384
	Pr(> t)			
(Intercept)	< 2.2e-16	***		
mode_status_f12v2_fctSE	0.0338874	*		
mode_status_f12v2_fctUnemp	0.5348155			
educ3_fct2	0.0128978	*		
educ3_fct3	1.247e-08	***		
educ3_fct4	1.731e-10	***		
sex_fctFemale	1.608e-11	***		
age	0.0065939	**		
age2	0.0106303	*		
immigrant_fctImmigrant	2.448e-05	***		
parent_fct1	0.0003111	***		
industry2_fct2	0.0864663	.		
industry2_fct3	0.0502743	.		
industry2_fct4	0.0013945	**		
industry2_fct5	0.0639024	.		
industry2_fct6	0.0169355	*		
industry2_fct7	0.5420874			
industry2_fct8	0.0024776	**		
industry2_fct9	0.0512992	.		
industry2_fct10	0.0102183	*		
industry2_fct11	0.2100393			
industry2_fct12	0.5120889			

```

industry2_fct13          0.2101464
factor(calyear)2015      0.0639399 .
factor(calyear)2016      0.0043925 **
factor(calyear)2018      7.783e-05 ***
factor(calyear)2019      4.175e-05 ***
factor(calyear)2020      0.0025726 **
combine_race_eth_fctBlack 0.5031853
combine_race_eth_fctAsian 0.0331028 *
combine_race_eth_fctHispanic 0.8591159
combine_race_eth_fctOther 0.2353628
---
Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

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tau = 0.9

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	12.37636847	0.12562044	12.12392474	12.6288
mode_status_f12v2_fctSE	0.07895125	0.03295063	0.01273449	0.1452
mode_status_f12v2_fctUnemp	0.03257633	0.04309509	-0.05402649	0.1192
educ3_fct2	0.09493390	0.02662161	0.04143577	0.1484
educ3_fct3	0.19061154	0.03512246	0.12003031	0.2612
educ3_fct4	0.28567229	0.03733525	0.21064429	0.3607
sex_fctFemale	-0.11946436	0.03304771	-0.18587622	-0.0531
age	0.00889438	0.00429711	0.00025901	0.0175
age2	-0.00011606	0.00004636	-0.00020922	0.0000
immigrant_fctImmigrant	-0.07831257	0.03403359	-0.14670563	-0.0099
parent_fct1	0.07283390	0.01789981	0.03686289	0.1088
industry2_fct2	0.13444914	0.05019144	0.03358567	0.2353
industry2_fct3	0.14298955	0.05662564	0.02919607	0.2568
industry2_fct4	0.32153386	0.08212392	0.15649967	0.4866
industry2_fct5	0.12496755	0.04175903	0.04104963	0.2089
industry2_fct6	0.21405688	0.05375796	0.10602622	0.3221
industry2_fct7	0.11906773	0.07506461	-0.03178025	0.2699
industry2_fct8	0.29570202	0.06382729	0.16743629	0.4240
industry2_fct9	0.11874550	0.04709267	0.02410924	0.2134
industry2_fct10	0.23503227	0.06130540	0.11183445	0.3582
industry2_fct11	0.08941527	0.04754839	-0.00613681	0.1850
industry2_fct12	0.08802672	0.04543587	-0.00328008	0.1793
industry2_fct13	0.98465559	0.45162136	0.07708849	1.8922
factor(calyear)2015	0.03358522	0.01375430	0.00594492	0.0612
factor(calyear)2016	0.04958526	0.01698032	0.01546202	0.0837
factor(calyear)2018	0.12200642	0.02386453	0.07404885	0.1700

factor(calyear)2019	0.13908503	0.03105989	0.07666784	0.2015							
factor(calyear)2020	0.11907083	0.02029973	0.07827700	0.1599							
combine_race_eth_fctBlack	-0.03430819	0.03664810	-0.10795530	0.0393							
combine_race_eth_fctAsian	0.05566362	0.04592327	-0.03662266	0.1479							
combine_race_eth_fctHispanic	-0.02988797	0.03527154	-0.10076878	0.0410							
combine_race_eth_fctOther	0.10527454	0.08703106	-0.06962093	0.2802							
	Pr(> t)										
(Intercept)	< 2.2e-16	***									
mode_status_f12v2_fctSE	0.0204358	*									
mode_status_f12v2_fctUnemp	0.4533175										
educ3_fct2	0.0008209	***									
educ3_fct3	1.762e-06	***									
educ3_fct4	6.539e-10	***									
sex_fctFemale	0.0007079	***									
age	0.0437591	*									
age2	0.0156819	*									
immigrant_fctImmigrant	0.0256839	*									
parent_fct1	0.0001713	***									
industry2_fct2	0.0100319	*									
industry2_fct3	0.0148499	*									
industry2_fct4	0.0002792	***									
industry2_fct5	0.0043236	**									
industry2_fct6	0.0002261	***									
industry2_fct7	0.1191263										
industry2_fct8	2.690e-05	***									
industry2_fct9	0.0149864	*									
industry2_fct10	0.0003605	***									
industry2_fct11	0.0659889	.									
industry2_fct12	0.0584738	.									
industry2_fct13	0.0340698	*									
factor(calyear)2015	0.0182704	*									
factor(calyear)2016	0.0052745	**									
factor(calyear)2018	5.254e-06	***									
factor(calyear)2019	4.511e-05	***									
factor(calyear)2020	3.767e-07	***									
combine_race_eth_fctBlack	0.3537861										
combine_race_eth_fctAsian	0.2312863										
combine_race_eth_fctHispanic	0.4009101										
combine_race_eth_fctOther	0.2322284										

Signif. codes:	0	'****'	0.001	'**'	0.01	'*'	0.05	'.'	0.1	' '	1

AIC:

```
[1] 37.32 (df = 34) -674.76 (df = 34) -512.91 (df = 34) 815.35 (df = 34)
[5] 2303.93 (df = 34)
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WS Sample Initial Status

```
Call: lqmm(fixed = ln_tpearn ~ mode_status_f12v2_fct, random = ~1,
           group = +ssuid_spanel_pnum_id, tau = c(0.1, 0.25, 0.5, 0.75,
           0.9), data = subset(earnings, pct_ws_after_12 == 1),
           control = lqmmControl(method = "df"))
```

tau = 0.1

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	12.501539	0.033953	12.433309	12.5698
mode_status_f12v2_fctSE	0.689960	0.246338	0.194926	1.1850
mode_status_f12v2_fctUnemp	0.215718	0.212328	-0.210972	0.6424
	Pr(> t)			
(Intercept)	< 2.2e-16 ***			
mode_status_f12v2_fctSE	0.007275 **			
mode_status_f12v2_fctUnemp	0.314636			

Signif. codes:	0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1			

tau = 0.25

Fixed effects:

	Value	Std. Error	lower bound	upper bound
(Intercept)	1.2539e+01	8.6407e-04	1.2537e+01	12.5407
mode_status_f12v2_fctSE	1.2173e-01	1.0588e-02	1.0045e-01	0.1430
mode_status_f12v2_fctUnemp	4.4019e-02	2.6072e-03	3.8780e-02	0.0493
	Pr(> t)			
(Intercept)	< 2.2e-16 ***			
mode_status_f12v2_fctSE	1.608e-15 ***			
mode_status_f12v2_fctUnemp	< 2.2e-16 ***			

Signif. codes:	0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1			

tau = 0.5

Fixed effects:

Value	Std. Error	lower bound	upper bound
-------	------------	-------------	-------------

```

(Intercept)           12.69765217  0.00087501 12.69589377    12.6994
mode_status_f12v2_fctSE   0.00268500  0.01058722 -0.01859082    0.0240
mode_status_f12v2_fctUnemp -0.07502145  0.00261092 -0.08026828   -0.0698
Pr(>|t|)
(Intercept)           <2e-16 ***
mode_status_f12v2_fctSE   0.8009
mode_status_f12v2_fctUnemp <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

tau = 0.75

Fixed effects:
            Value Std. Error lower bound upper bound
(Intercept)           12.69765217  0.00087501 12.69589377    12.6994
mode_status_f12v2_fctSE   0.00268500  0.01058722 -0.01859082    0.0240
mode_status_f12v2_fctUnemp -0.07502145  0.00261092 -0.08026828   -0.0698
Pr(>|t|)
(Intercept)           <2e-16 ***
mode_status_f12v2_fctSE   0.8009
mode_status_f12v2_fctUnemp <2e-16 ***
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

tau = 0.9

Fixed effects:
            Value Std. Error lower bound upper bound
(Intercept)           12.8424054  0.0090702 12.8241782    12.8606
mode_status_f12v2_fctSE   0.8879010  0.1745849  0.5370595    1.2387
mode_status_f12v2_fctUnemp -0.0513579  0.0627366 -0.1774318    0.0747
Pr(>|t|)
(Intercept)           < 2.2e-16 ***
mode_status_f12v2_fctSE   5.76e-06 ***
mode_status_f12v2_fctUnemp     0.417
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

AIC:
[1] -28177 (df = 5) -17553 (df = 5) -25288 (df = 5) -5068 (df = 5)
[5] -57073 (df = 5)

```

Code

```
library(tidyverse)
library(haven)
library(lqmm)
library(lme4)
library(kableExtra)

earnings <- read_dta("/Users/toddnobles/Documents/sipp_analyses/earnings_models.dta")
earnings <- earnings %>%
  mutate(across(c(sex, immigrant, combine_race_eth, unempf12_6,
                 pct_se_after_12, mode_status_f12v2, educ3,
                 industry2, parent),
                as_factor,
                .names = "{col}_fct"),
        ssuid_sppanel_pnum_id = factor(ssuid_sppanel_pnum_id))

earnings_multi_obs <- earnings %>%
  add_count(ssuid_sppanel_pnum_id) %>%
  filter(n < 2)
data("Orthodont")
Orthodont <- Orthodont %>%
  mutate(age.c = age -11)

Orthodont2 <- Orthodont %>%
  mutate(age.c = age - mean(age))

summary(fit.lmer <- lmer(distance ~ age + (1 | Subject), data = Orthodont)) ##

y = Orthodont$distance
x = cbind(1, Orthodont$age)
groups = Orthodont$Subject
z = cbind(1, Orthodont$Subject )

library(qrLMM)
model = QRLMM(y, x, z, groups = groups, MaxIter = 100)

y = earnings$ln_tpearn
x = cbind(1, earnings$unempf12_6_fct)
```

```

groups = earnings$ssuid_sppanel_pnum_id
z = cbind(1, earnings$ssuid_sppanel_pnum_id )

model = QRLLM(y, x, z, groups = groups, p = c(.5),MaxIter = 100)
summary(fit.lqmm <- lqmm(fixed = distance ~
                           age + Sex,
                           random = ~1,
                           group = + Subject,
                           data = Orthodont))

sample_ids = sample(unique(earnigns$ssuid_sppanel_pnum_id),
                     round(.25 * length(unique(earnigns$ssuid_sppanel_pnum_id)))))

test_data <- earnings %>%
  filter(ssuid_sppanel_pnum_id %in% sample_ids)

unemp_earnings <- lqmm(fixed = ln_tpearn ~ unempf12_6_fct,
                        random = ~1,
                        group = + ssuid_sppanel_pnum_id,
                        tau = c(.1, 0.25, 0.5, .75, .9),
                        data = earnings,
                        control = lqmmControl(method = "df"))

unemp_earnings2 <- lqmm(fixed = ln_tpearn ~ unempf12_6_fct + educ3_fct +
                          sex_fct + age + age2 + immigrant_fct +
                          parent_fct + industry2_fct + factor(calyear),
                          random = ~1,
                          group = + ssuid_sppanel_pnum_id,
                          tau = c(.1, 0.25, 0.5, .75, .9),
                          data = earnings,
                          control = lqmmControl(method = "df"))

unemp_earnings3 <- lqmm(fixed = ln_tpearn ~ unempf12_6_fct + educ3_fct +
                          sex_fct + age + age2 + immigrant_fct +
                          parent_fct + industry2_fct + factor(calyear) + combine_race_eth
                          random = ~1,
                          group = + ssuid_sppanel_pnum_id,
                          tau = c(.1, 0.25, 0.5, .75, .9),
                          data = earnings,
                          control = lqmmControl(method = "df"))

status_earnings <- lqmm(fixed = ln_tpearn ~ mode_status_f12v2_fct, random = ~1,

```

```

group = + ssuid_spanel_pnum_id,
tau = c(.1, 0.25, 0.5, .75, .9),
data = earnings,
control = lqmmControl(method = "df"))

status_earnings2 <- lqmm(fixed = ln_tpearn ~ mode_status_f12v2_fct + educ3_fct +
                           sex_fct + age + age2 + immigrant_fct +
                           parent_fct + industry2_fct + factor(calyear),
                           random = ~1,
                           group = + ssuid_spanel_pnum_id,
                           tau = c(.1, 0.25, 0.5, .75, .9),
                           data = earnings,
                           control = lqmmControl(method = "df"))

status_earnings3 <- lqmm(fixed = ln_tpearn ~ mode_status_f12v2_fct + educ3_fct +
                           sex_fct + age + age2 + immigrant_fct +
                           parent_fct + industry2_fct + factor(calyear) + combine_race_eth_
                           random = ~1,
                           group = + ssuid_spanel_pnum_id,
                           tau = c(.1, 0.25, 0.5, .75, .9),
                           data = earnings,
                           control = lqmmControl(method = "df"))

unemp_earnings_se <- lqmm(fixed = ln_tpearn ~ unempf12_6_fct, random = ~1,
                             group = + ssuid_spanel_pnum_id,
                             tau = c(.1, 0.25, 0.5, .75, .9),
                             data = subset(earnings, pct_se_after_12 ==1),
                             control = lqmmControl(method = "df"))

unemp_earnings2_se <- lqmm(fixed = ln_tpearn ~ unempf12_6_fct + educ3_fct +
                             sex_fct + age + age2 + immigrant_fct +
                             parent_fct + industry2_fct + factor(calyear),
                             random = ~1,
                             group = + ssuid_spanel_pnum_id,
                             tau = c(.1, 0.25, 0.5, .75, .9),
                             data = subset(earnings, pct_se_after_12 ==1 ),
                             control = lqmmControl(method = "df"))

unemp_earnings3_se <- lqmm(fixed = ln_tpearn ~ unempf12_6_fct + educ3_fct +
                             sex_fct + age + age2 + immigrant_fct +
                             parent_fct + industry2_fct + factor(calyear) + combine_race_eth_
                             random = ~1,

```

```

group = + ssuid_spanel_pnum_id,
tau = c(.1, 0.25, 0.5, .75, .9),
data = subset(earnings, pct_se_after_12 ==1 ),
control = lqmmControl(method = "df"))

status_earnings_se <- lqmm(fixed = ln_tpearn ~ mode_status_f12v2_fct, random = ~1,
                             group = + ssuid_spanel_pnum_id,
                             tau = c(.1, 0.25, 0.5, .75, .9),
                             data = subset(earnings, pct_se_after_12 ==1 ),
                             control = lqmmControl(method = "df"))

status_earnings2_se <- lqmm(fixed = ln_tpearn ~ mode_status_f12v2_fct + educ3_fct +
                             sex_fct + age + age2 + immigrant_fct +
                             parent_fct + industry2_fct + factor(calyear),
                             random = ~1,
                             group = + ssuid_spanel_pnum_id,
                             tau = c(.1, 0.25, 0.5, .75, .9),
                             data = subset(earnings, pct_se_after_12 ==1 ),
                             control = lqmmControl(method = "df"))

status_earnings3_se <- lqmm(fixed = ln_tpearn ~ mode_status_f12v2_fct + educ3_fct +
                             sex_fct + age + age2 + immigrant_fct +
                             parent_fct + industry2_fct + factor(calyear) + combine_race_eth_
                             random = ~1,
                             group = + ssuid_spanel_pnum_id,
                             tau = c(.1, 0.25, 0.5, .75, .9),
                             data = subset(earnings, pct_se_after_12 ==1 ),
                             control = lqmmControl(method = "df"))

unemp_earnings_ws <- lqmm(fixed = ln_tpearn ~ unempf12_6_fct, random = ~1,
                            group = + ssuid_spanel_pnum_id,
                            tau = c(.1, 0.25, 0.5, .75, .9),
                            data = subset(earnings, pct_ws_after_12 ==1 ),
                            control = lqmmControl(method = "df"))

unemp_earnings2_ws <- lqmm(fixed = ln_tpearn ~ unempf12_6_fct + educ3_fct +
                             sex_fct + age + age2 + immigrant_fct +
                             parent_fct + industry2_fct + factor(calyear),
                             random = ~1,
                             group = + ssuid_spanel_pnum_id,
                             tau = c(.1, 0.25, 0.5, .75, .9),
                             data = subset(earnings, pct_ws_after_12 ==1 ),
                             control = lqmmControl(method = "df"))

```

```

unemp_earnings3_ws <- lqmm(fixed = ln_tpearn ~ unempf12_6_fct + educ3_fct +
                           sex_fct + age + age2 + immigrant_fct +
                           parent_fct + industry2_fct + factor(calyear) + combine_race_eth_
                           random = ~1,
                           group = + ssuid_spanel_pnum_id,
                           tau = c(.1, 0.25, 0.5, .75, .9),
                           data = subset(earnings, pct_ws_after_12 ==1 ),
                           control = lqmmControl(method = "df"))

status_earnings_ws <- lqmm(fixed = ln_tpearn ~ mode_status_f12v2_fct, random = ~1,
                            group = + ssuid_spanel_pnum_id,
                            tau = c(.1, 0.25, 0.5, .75, .9),
                            data = subset(earnings, pct_ws_after_12 ==1 ),
                            control = lqmmControl(method = "df"))

status_earnings2_ws <- lqmm(fixed = ln_tpearn ~ mode_status_f12v2_fct + educ3_fct +
                           sex_fct + age + age2 + immigrant_fct +
                           parent_fct + industry2_fct + factor(calyear),
                           random = ~1,
                           group = + ssuid_spanel_pnum_id,
                           tau = c(.1, 0.25, 0.5, .75, .9),
                           data = subset(earnings, pct_ws_after_12 ==1 ),
                           control = lqmmControl(method = "df"))

status_earnings3_ws <- lqmm(fixed = ln_tpearn ~ mode_status_f12v2_fct + educ3_fct +
                           sex_fct + age + age2 + immigrant_fct +
                           parent_fct + industry2_fct + factor(calyear) + combine_race_eth_
                           random = ~1,
                           group = + ssuid_spanel_pnum_id,
                           tau = c(.1, 0.25, 0.5, .75, .9),
                           data = subset(earnings, pct_ws_after_12 ==1 ),
                           control = lqmmControl(method = "df"))

data.frame(pctile = c(.1, .25, .5, .75, .9),
           base_model = coef(unemp_earnings)[["unempf12_6_fct1",]],
           model2 = coef(unemp_earnings2)[["unempf12_6_fct1",]],
           model3 = coef(unemp_earnings3)[["unempf12_6_fct1",]]) %>%
knitr::kable(caption = "Full Sample Extracted Coefficients for Unemployment") %>%
kable_styling(latex_options = "scale_down")

data.frame(pctile = c(.1, .25, .5, .75, .9),
           base_model = coef(unemp_earnings_se)[["unempf12_6_fct1",]],

```

```

model2 = coef(unemp_earnings2_se)[ "unempf12_6_fct1", ],
model3 = coef(unemp_earnings3_se)[ "unempf12_6_fct1", ]) %>%
knitr::kable(caption = "Self-Employed Extracted Coefficients for Unemployment") %>%
kable_styling(latex_options = "scale_down")

data.frame(pctile = c(.1, .25, .5, .75, .9),
           base_model = coef(unemp_earnings_ws)[ "unempf12_6_fct1", ],
           model2 = coef(unemp_earnings2_ws)[ "unempf12_6_fct1", ],
           model3 = coef(unemp_earnings3_ws)[ "unempf12_6_fct1", ]) %>%
knitr::kable(caption = "Wage and Salary Extracted Coefficients for Unemployment") %>%
kable_styling(latex_options = "scale_down")
data.frame(pctile = c(.1, .25, .5, .75, .9),
           base_SE = coef(status_earnings)[ "mode_status_f12v2_fctSE", ],
           base_unemp = coef(status_earnings)[ "mode_status_f12v2_fctUnemp", ],
           model2_SE = coef(status_earnings2)[ "mode_status_f12v2_fctSE", ],
           model2_unemp = coef(status_earnings2)[ "mode_status_f12v2_fctUnemp", ],
           model3_SE = coef(status_earnings3)[ "mode_status_f12v2_fctSE", ],
           model3_unemp = coef(status_earnings3)[ "mode_status_f12v2_fctUnemp", ]) %>%
knitr::kable(caption = "Full Sample Extracted Coefficients for Initial Status") %>%
kable_styling(latex_options = "scale_down")
data.frame(pctile = c(.1, .25, .5, .75, .9),
           base_SE = coef(status_earnings_se)[ "mode_status_f12v2_fctSE", ],
           base_unemp = coef(status_earnings_se)[ "mode_status_f12v2_fctUnemp", ],
           model2_SE = coef(status_earnings2_se)[ "mode_status_f12v2_fctSE", ],
           model2_unemp = coef(status_earnings2_se)[ "mode_status_f12v2_fctUnemp", ],
           model3_SE = coef(status_earnings3_se)[ "mode_status_f12v2_fctSE", ],
           model3_unemp = coef(status_earnings3_se)[ "mode_status_f12v2_fctUnemp", ]) %>%
knitr::kable(caption = "Self-Employed Sample Extracted Coefficients for Initial Status")
kable_styling(latex_options = "scale_down")
data.frame(pctile = c(.1, .25, .5, .75, .9),
           base_SE = coef(status_earnings_ws)[ "mode_status_f12v2_fctSE", ],
           base_unemp = coef(status_earnings_ws)[ "mode_status_f12v2_fctUnemp", ],
           model2_SE = coef(status_earnings2_ws)[ "mode_status_f12v2_fctSE", ],
           model2_unemp = coef(status_earnings2_ws)[ "mode_status_f12v2_fctUnemp", ],
           model3_SE = coef(status_earnings3_ws)[ "mode_status_f12v2_fctSE", ],
           model3_unemp = coef(status_earnings3_ws)[ "mode_status_f12v2_fctUnemp", ]) %>%
knitr::kable(caption = "Wage Sample Extracted Coefficients for Initial Status") %>%
kable_styling(latex_options = "scale_down")
summary(unemp_earnings3)
summary(unemp_earnings3_se)
summary(unemp_earnings3_ws)

```

```
summary(status_earnings3)
summary(status_earnings3_se)
summary(status_earnings_ws)
```