P6 Penultimate Analyses

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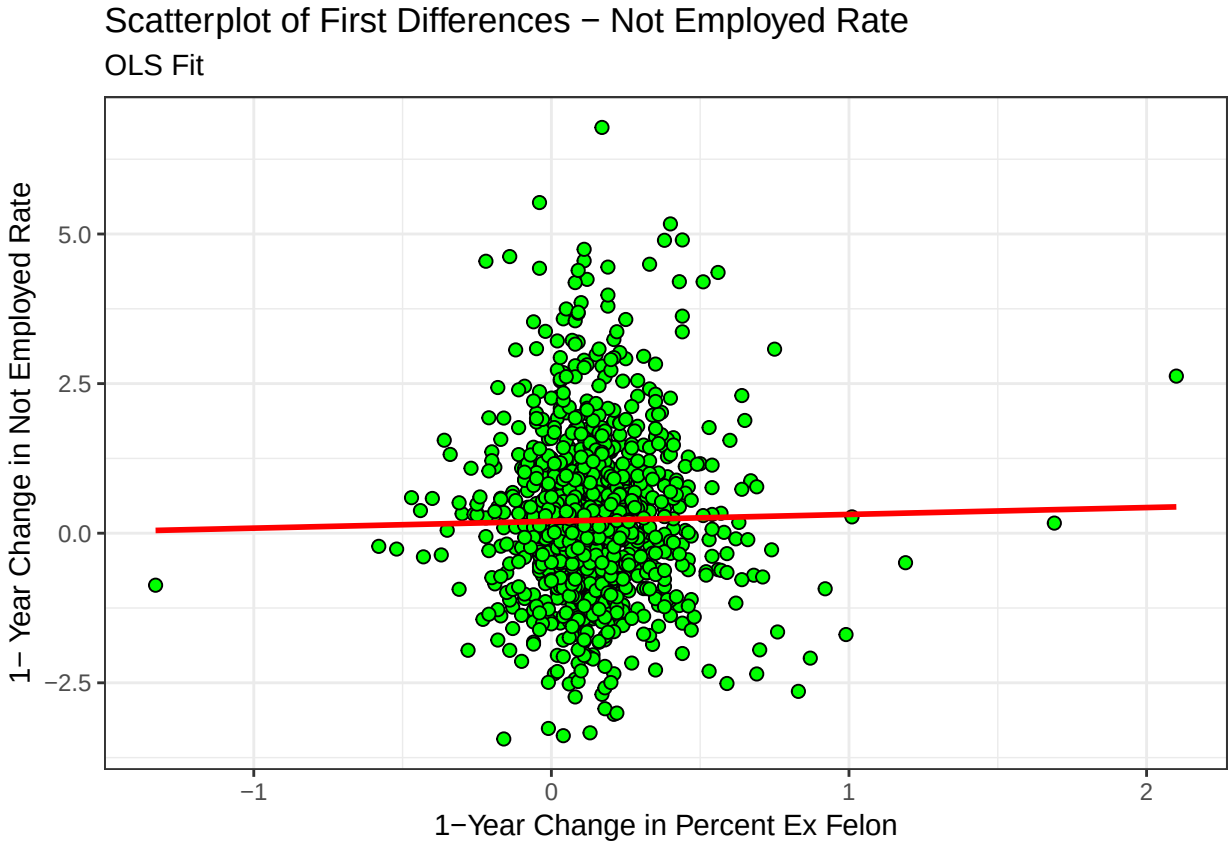
Table 1: Unweighted Descriptive Statistics

Statistic	N	Mean	St. Dev.	Min	Pctl(25)	Median	Pctl(75)	Max
Felony History Pct.	1,150	4.275	1.718	1.200	3.030	3.960	5.188	12.340
Not Employed Rate	1,150	22.230	4.237	12.986	19.323	21.935	24.869	37.585
Population Share 16-25	1,150	18.318	1.780	13.331	17.218	18.183	19.343	27.342
Population Share 26-35	1,150	19.068	2.792	12.553	16.760	18.732	21.314	29.370
Population Share 36-45	1,150	19.705	1.996	13.676	18.315	19.768	21.020	29.022
Population Share 46-55	1,150	16.306	2.482	10.655	14.069	16.740	18.344	23.034
Population Share 56-65	1,150	11.838	1.749	7.055	10.545	11.517	12.931	17.791
Population Share 66+	1,150	14.764	2.117	5.395	13.761	14.937	15.928	20.551
Bachelor's Degree Rate	1,150	21.609	7.688	4.539	18.459	22.703	26.425	41.208
Marriage Rate	1,150	57.067	4.227	44.599	54.123	56.793	59.817	71.036
Ovr. Unemployment Rate t	1,150	5.505	1.780	2.219	4.282	5.229	6.376	14.523
Ovr. Unemployment Rate t-1	1,150	5.391	1.643	2.219	4.259	5.206	6.307	13.243
Ovr. Unemployment Rate t-2	1,150	5.320	1.553	2.219	4.250	5.180	6.224	13.287
Ovr. Unemployment Rate t-3	1,150	5.394	1.624	2.219	4.267	5.210	6.291	13.287
Self-Report Disability Rate	1,150	6.229	1.624	2.565	5.099	6.003	7.154	12.952
SSI Rate	1,150	2.739	1.161	0.765	1.893	2.402	3.324	7.110
Effective Wage	1,150	5.190	1.166	3.350	4.250	5.150	5.750	8.550
Mean TANF Maximum	1,150	403.792	155.250	117.667	289.333	376.333	507.667	925.333
Unemployment Compensation	1,150	358.496	65.844	157.124	311.618	356.399	400.119	581.813

Table 2: Pairwise Correlations

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
Felony History Pct.	1												
Not Employed Rate	0.14	1											
Population Share 16-25	-0.25	0	1										
Population Share 26-35	-0.37	-0.05	0.37	1									
Population Share 36-45	-0.18	-0.27	-0.13	0.28	1								
Population Share 46-55	0.49	0.06	-0.4	-0.83	-0.21	1							
Population Share 56-65	0.34	0.33	-0.37	-0.61	-0.7	0.54	1						
Population Share 66+	0.01	-0.02	-0.43	-0.42	-0.38	0	0.32	1					
Bachelor's Degree Rate	0.45	-0.15	-0.4	-0.56	0.1	0.68	0.19	0.03	1				
Marriage Rate	-0.49	-0.26	0.36	0.46	0.27	-0.55	-0.47	-0.14	-0.55	1			
Ovr. Unemployment Rate t	0.11	0.76	0	0.06	-0.2	-0.01	0.23	-0.07	-0.1	-0.22	1		
Ovr. Unemployment Rate t-1	-0.01	0.69	0.06	0.18	-0.07	-0.13	0.06	-0.1	-0.16	-0.07	0.82	1	
Ovr. Unemployment Rate t-2	-0.15	0.55	0.13	0.32	0.07	-0.28	-0.14	-0.15	-0.31	0.14	0.51	0.79	1
Ovr. Unemployment Rate t-3	-0.21	0.46	0.14	0.35	0.09	-0.32	-0.18	-0.14	-0.4	0.21	0.33	0.57	0.88
Self-Report Disability Rate	-0.04	0.47	-0.22	-0.31	-0.09	0.21	0.24	0.23	-0.05	-0.1	0.25	0.28	0.29
SSI Rate	0.08	0.65	-0.05	-0.2	-0.15	0.09	0.18	0.19	-0.05	-0.27	0.3	0.32	0.33
Effective Wage	0.54	0.19	-0.32	-0.69	-0.34	0.78	0.62	0.06	0.65	-0.64	0.23	0	-0.28
Mean TANF Maximum	0.01	-0.25	-0.15	-0.04	0.23	0.2	-0.06	-0.21	0.36	-0.21	-0.03	-0.07	-0.12
Unemployment Compensation	0.03	0.12	-0.18	-0.18	-0.06	0.21	0.14	0.07	0.25	-0.11	0.1	0.07	0.03


Scatterplot of First Differences − Not Employed Rate
OLS Fit
1− Year Change in Not Employed Rate
5.0
2.5
0.0
−2.5
−1
0
1
2
1−Year Change in Percent Ex Felon

p6 Overall Models

Table 3: Panel Models of Not Employed Rate, 1988-2010

	(1)	(2)	(3)	(4)
Felony History Pct.	0.319* (0.154)	0.324* (0.157)	0.304** (0.103)	0.331*** (0.100)
Pop. Share 26-35		0.089 (0.078)	0.060 (0.051)	0.031 (0.052)
Pop. Share 36-45		0.026 (0.077)	0.067 (0.051)	0.034 (0.050)
Pop. Share 46-55		0.033 (0.076)	−0.081 (0.058)	−0.113 (0.058)
Pop. Share 56-65		0.175 (0.095)	0.153** (0.056)	0.146** (0.055)
Pop. Share 66+		0.084 (0.068)	0.041 (0.048)	0.012 (0.049)
Degree Rate		0.020 (0.038)	−0.055* (0.023)	−0.044* (0.022)
Marriage Rate		−0.001 (0.044)	−0.007 (0.028)	0.017 (0.027)
Ovr. Unemp. Rate t			0.892*** (0.052)	0.883*** (0.050)
Ovr. Unemp. Rate t-1			0.092* (0.037)	0.101** (0.038)
Ovr. Unemp. Rate t-2			−0.016 (0.037)	−0.033 (0.037)
Ovr. Unemp. Rate t-3			0.225*** (0.038)	0.220*** (0.040)
Disab. Rate				0.149*** (0.032)
Effective Wage				−0.043 (0.109)
Mean TANF Maximum				0.000 (0.002)
Unemployment Comp.				−0.000 (0.001)
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	1,150	1,150	1,150	1,150
R^2	0.015	0.008	0.566	0.574
Adjusted R^2	−0.051	−0.065	0.532	0.539

Notes:
***Significant at the 0.1 percent level.
**Significant at the 1 percent level.
*Significant at the 5 percent level.
Clustered Standard Errors by State and Year.
Weighted by State-Year total pop.

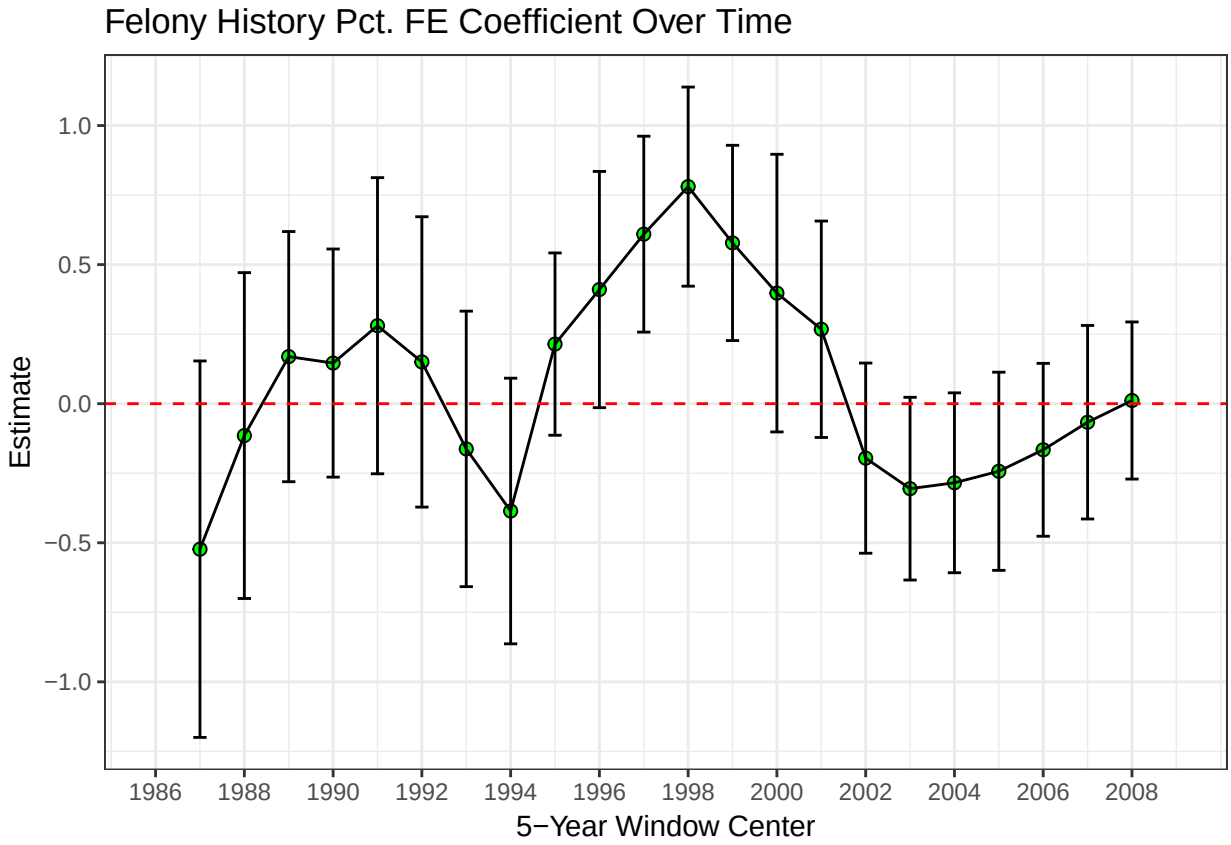
Alternative Sample Models

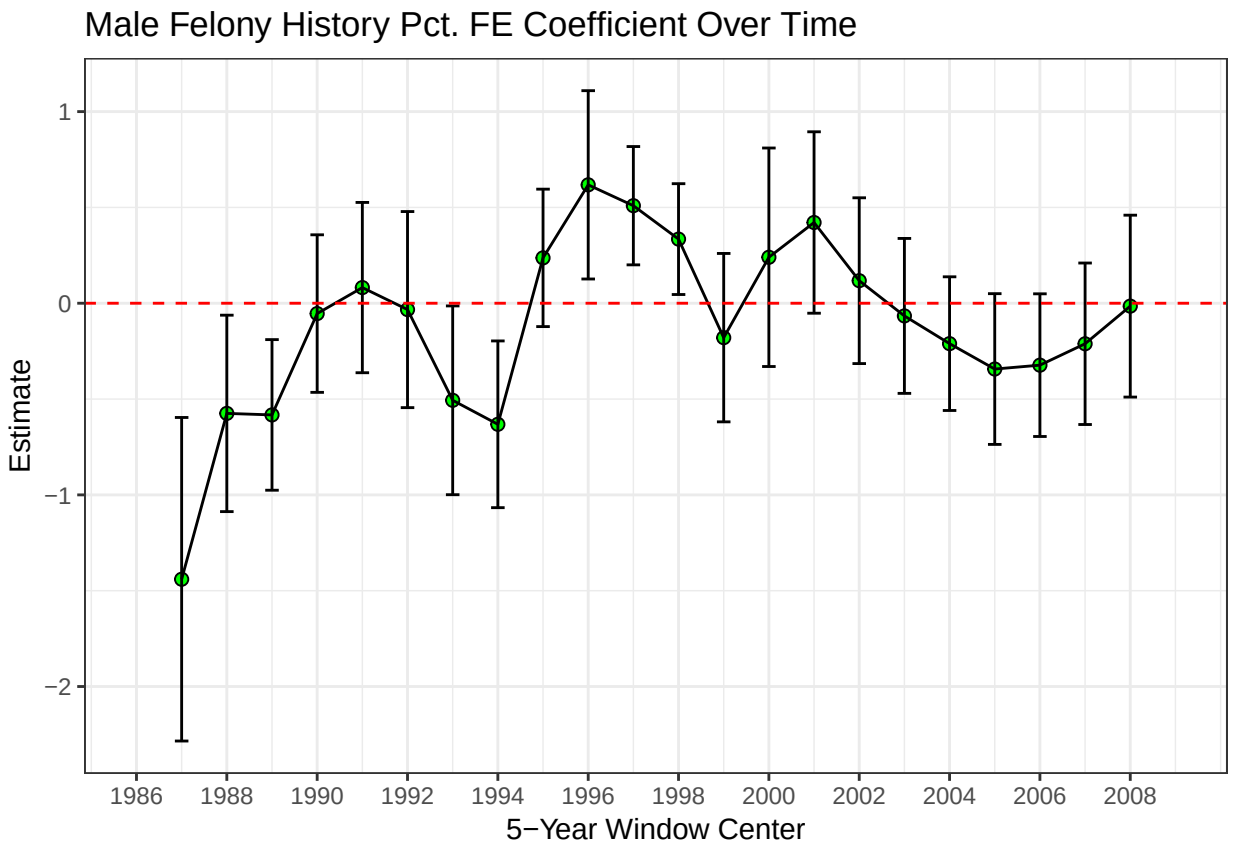
Table 4: Alternative Sample Models

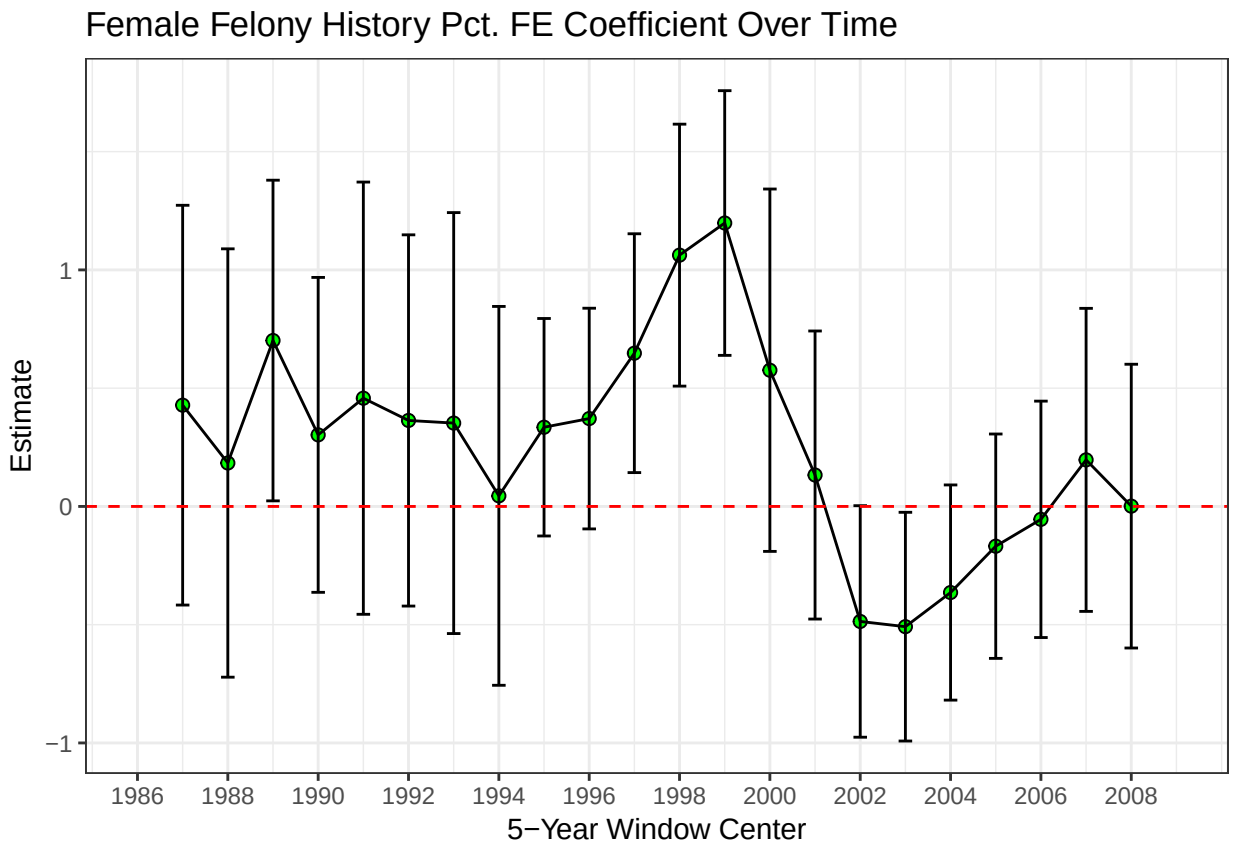
	Male	Female	Black	White
	(1)	(2)	(3)	(4)
Felony History Pct.	0.109 (0.088)	0.555*** (0.167)	0.058 (0.058)	0.406*** (0.118)
Pop. Share 26-35	0.082 (0.045)	0.023 (0.074)	0.333** (0.120)	0.062 (0.054)
Pop. Share 36-45	0.245*** (0.052)	−0.099 (0.070)	0.218 (0.118)	0.103 (0.053)
Pop. Share 46-55	0.062 (0.040)	−0.241* (0.099)	−0.127 (0.172)	−0.065 (0.068)
Pop. Share 56-65	0.107* (0.049)	0.178* (0.089)	0.495** (0.170)	0.172** (0.063)
Pop. Share 66+	0.203*** (0.046)	−0.131 (0.076)	0.042 (0.120)	0.051 (0.054)
Degree Rate	1.108*** (0.049)	0.670*** (0.076)	1.196*** (0.122)	0.850*** (0.054)
Marriage Rate	0.109*** (0.033)	0.092 (0.059)	0.005 (0.129)	0.131** (0.040)
Ovr. Unemp. Rate t	−0.021 (0.034)	−0.026 (0.058)	−0.001 (0.147)	−0.057 (0.040)
Ovr. Unemp. Rate t-1	0.056 (0.031)	0.373*** (0.069)	0.679*** (0.125)	0.115* (0.046)
Ovr. Unemp. Rate t-2	−0.008 (0.016)	−0.079* (0.038)	−0.089*** (0.011)	−0.080*** (0.022)
Ovr. Unemp. Rate t-3	−0.143*** (0.022)	0.107** (0.034)	−0.175*** (0.009)	0.015 (0.031)
Disab. Rate	0.180*** (0.020)	0.058 (0.048)	0.155*** (0.008)	0.137*** (0.034)
Effective Wage	0.218** (0.075)	−0.278 (0.201)	−0.535 (0.276)	0.011 (0.129)
Mean TANF Maximum	0.001 (0.001)	−0.000 (0.003)	0.004 (0.004)	−0.001 (0.002)
Unemployment Comp.	−0.002 (0.001)	0.002 (0.002)	−0.006 (0.004)	−0.000 (0.001)
Disab. Imputed			1.946*** (0.317)	
Marriage Imputed			13.639*** (0.962)	
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	1,150	1,150	1,118	1,150
R^2	0.608	0.335	0.068	0.514
Adjusted R^2	0.576	0.280	−0.013	0.474

Notes:
***Significant at the 0.1 percent level.
**Significant at the 1 percent level.
*Significant at the 5 percent level.
Clustered Standard Errors by State and Year.
Weighted by State-Year total pop.

Rolling-Window Models and Plot




Male Felony History Pct. FE Coefficient Over Time
Estimate
1
0
−1
−2
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
5−Year Window Center


Female Felony History Pct. FE Coefficient Over Time
Estimate
1
0
−1
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
5−Year Window Center

Alternative Specifications of Disabiility

Table 5: Alternative Specifications of Disability

	with SSI	Imputed	Imputed no SSI
	(1)	(2)	(3)
Felon History Pct.	0.315** (0.099)	0.321*** (0.084)	0.332*** (0.088)
Pop. Share 26-35	0.025 (0.051)	0.042 (0.048)	0.044 (0.049)
Pop. Share 36-45	0.034 (0.049)	−0.013 (0.047)	−0.008 (0.048)
Pop. Share 46-55	−0.115* (0.057)	−0.197** (0.062)	−0.193** (0.062)
Pop. Share 56-65	0.124* (0.053)	0.057 (0.052)	0.088 (0.054)
Pop. Share 66+	0.019 (0.049)	0.025 (0.050)	0.017 (0.049)
Degree Rate	0.853*** (0.050)	0.918*** (0.044)	0.937*** (0.044)
Marriage Rate	0.105** (0.038)	0.084** (0.030)	0.082** (0.029)
Ovr. Unemp. Rate t	−0.026 (0.037)	−0.011 (0.026)	−0.015 (0.026)
Ovr. Unemp. Rate t-1	0.217*** (0.037)	0.234*** (0.043)	0.236*** (0.044)
Ovr. Unemp. Rate t-2	−0.046* (0.022)	−0.066* (0.026)	−0.066* (0.026)
Ovr. Unemp. Rate t-3	0.018 (0.026)	0.055* (0.025)	0.051* (0.025)
Disab.rate	0.162*** (0.030)	0.165*** (0.038)	0.155*** (0.038)
SSI Rate	−0.487* (0.192)	−0.344 (0.198)	
Effective Wage	−0.002 (0.110)	0.138 (0.119)	0.107 (0.124)
Mean TANF Maximum	0.000 (0.002)	0.001 (0.001)	0.000 (0.001)
Unemployment Comp.	−0.000 (0.001)	−0.001 (0.001)	−0.001 (0.001)
State FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	1,150	1,400	1,400
R^2	0.576	0.601	0.600
Adjusted R^2	0.541	0.573	0.572

Notes: ***Significant at the 0.1 percent level.
**Significant at the 1 percent level.
*Significant at the 5 percent level.
Clustered Standard Errors by State and Year.
Weighted by State-Year total pop.

Time-Subset Models (Pre-Post 1997 PRWORA Enactment)

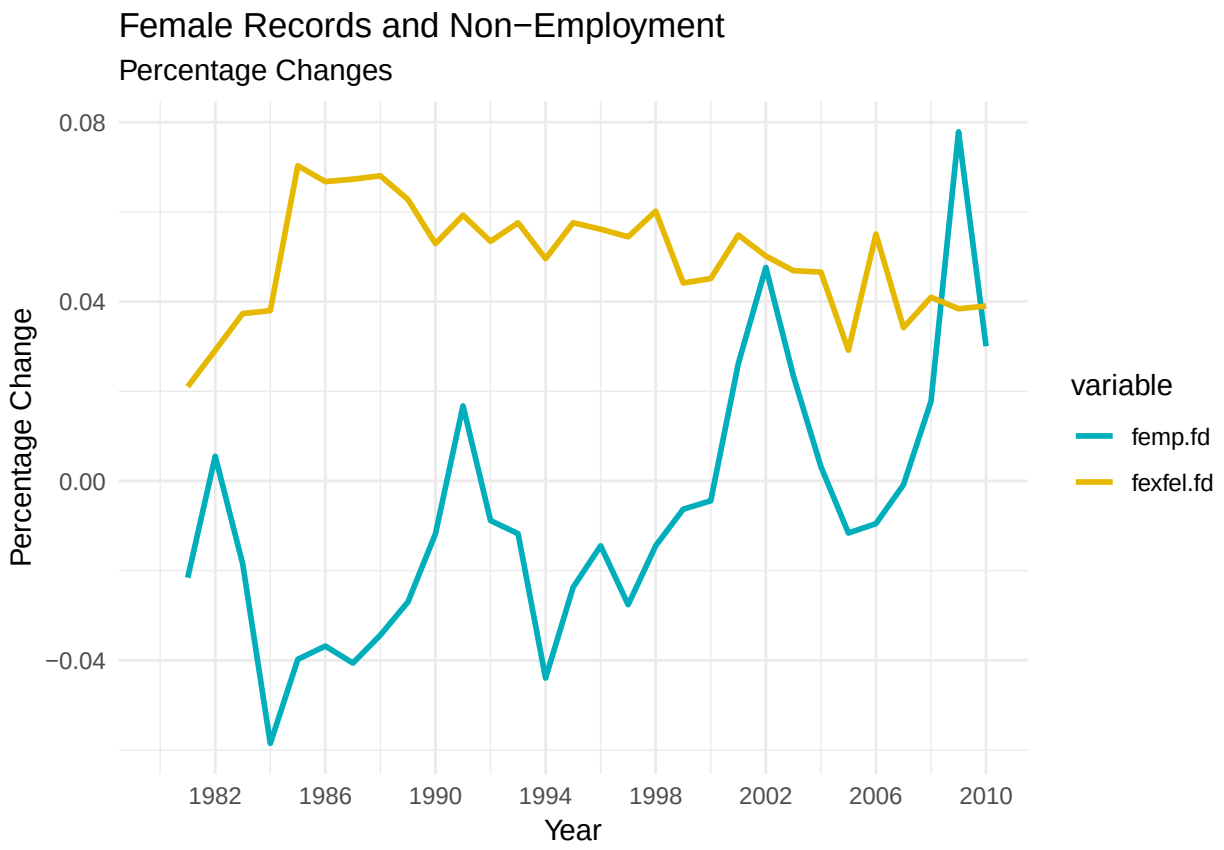
Table 6: Pre-Post PRWORA Subset Models

	Male Pre	Male Post	Female Pre	Female Post
	(1)	(2)	(3)	(4)
Felony History Pct.	−0.028 (0.187)	0.032 (0.115)	1.041*** (0.312)	0.201 (0.197)
Pop. Share 26-35	0.096 (0.071)	0.034 (0.073)	−0.070 (0.081)	0.042 (0.075)
Pop. Share 36-45	0.081 (0.081)	0.223** (0.070)	−0.264* (0.110)	0.030 (0.074)
Pop. Share 46-55	−0.005 (0.076)	0.133 (0.075)	−0.019 (0.115)	−0.164 (0.088)
Pop. Share 56-65	0.093 (0.084)	0.136 (0.072)	0.128 (0.113)	−0.067 (0.093)
Pop. Share 66+	0.010 (0.058)	0.208* (0.081)	−0.154 (0.098)	−0.056 (0.088)
Ovr. Unemp. Rate t	1.022*** (0.052)	1.146*** (0.058)	0.830*** (0.081)	0.466*** (0.082)
Ovr. Unemp. Rate t-1	0.138* (0.059)	0.101 (0.070)	−0.012 (0.066)	0.234*** (0.070)
Ovr. Unemp. Rate t-2	−0.033 (0.058)	0.043 (0.050)	0.111 (0.090)	−0.109 (0.078)
Ovr. Unemp. Rate t-3	0.109** (0.041)	0.084 (0.076)	0.319*** (0.074)	0.330*** (0.076)
Disab. Rate	0.114*** (0.023)	0.194*** (0.028)	0.080* (0.038)	0.155** (0.051)
Marriage Rate	−0.133*** (0.019)	−0.203*** (0.030)	0.025 (0.043)	0.062 (0.033)
Effective Wage	−0.371 (0.201)	0.341*** (0.097)	−0.306 (0.609)	−0.193 (0.170)
Mean TANF Maximum	0.000 (0.002)	0.002 (0.002)	0.001 (0.002)	0.001 (0.003)
Unemployment Comp.	−0.003 (0.002)	0.000 (0.001)	−0.001 (0.005)	0.003 (0.002)
Degree Rate	0.011 (0.029)	0.011 (0.025)	−0.145*** (0.043)	−0.052 (0.047)
State FE	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Observations	450	700	450	700
R^2	0.628	0.622	0.391	0.252
Adjusted R^2	0.556	0.575	0.273	0.158

Notes:
***Significant at the 0.1 percent level.
**Significant at the 1 percent level.
*Significant at the 5 percent level.
Clustered Standard Errors by State and Year.
Weighted by State-Year total pop.

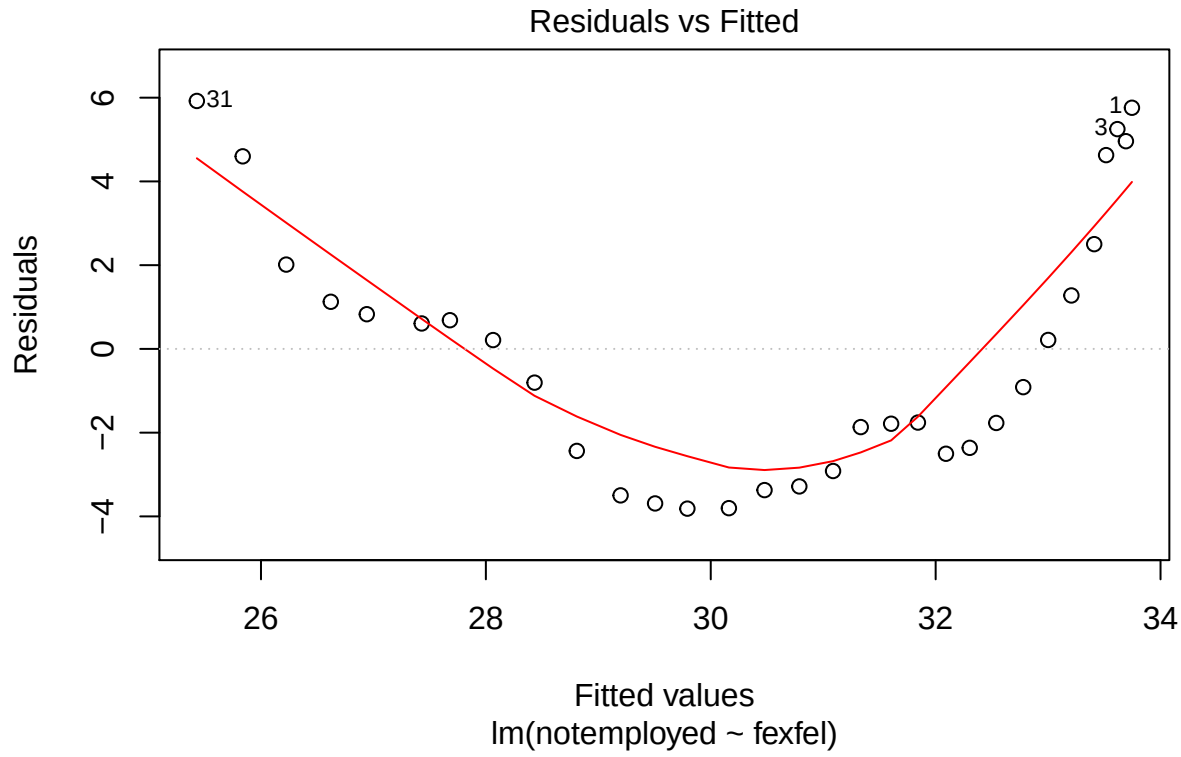
Time Series Plots

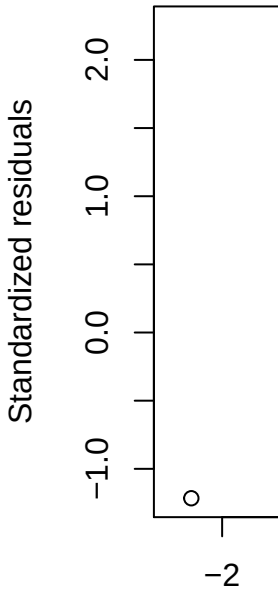
```
## Warning: Removed 2 rows containing missing values (geom_path).
```

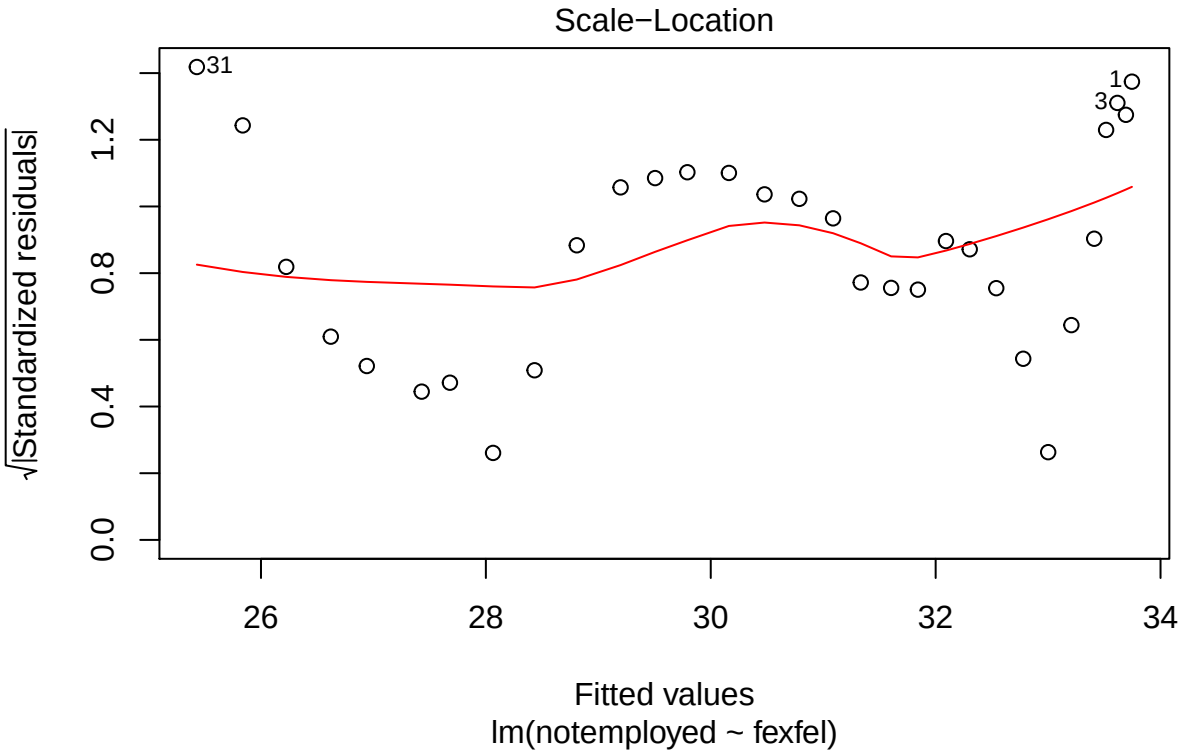


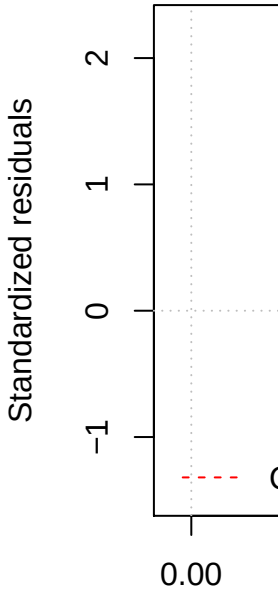
Preliminary TS Analyses

```
# Time Series Analyses
library(astsa)
library(tseries)
fe.ts.2 <- as.ts(fe.ts$notemployed, start = c(1980,1))

#Autocorrelation?
  #Durbin-Watson Test - checks for AR(1) in residuals
m <- lm(notemployed~fexfel, data=fe.ts)

plot(m)
```

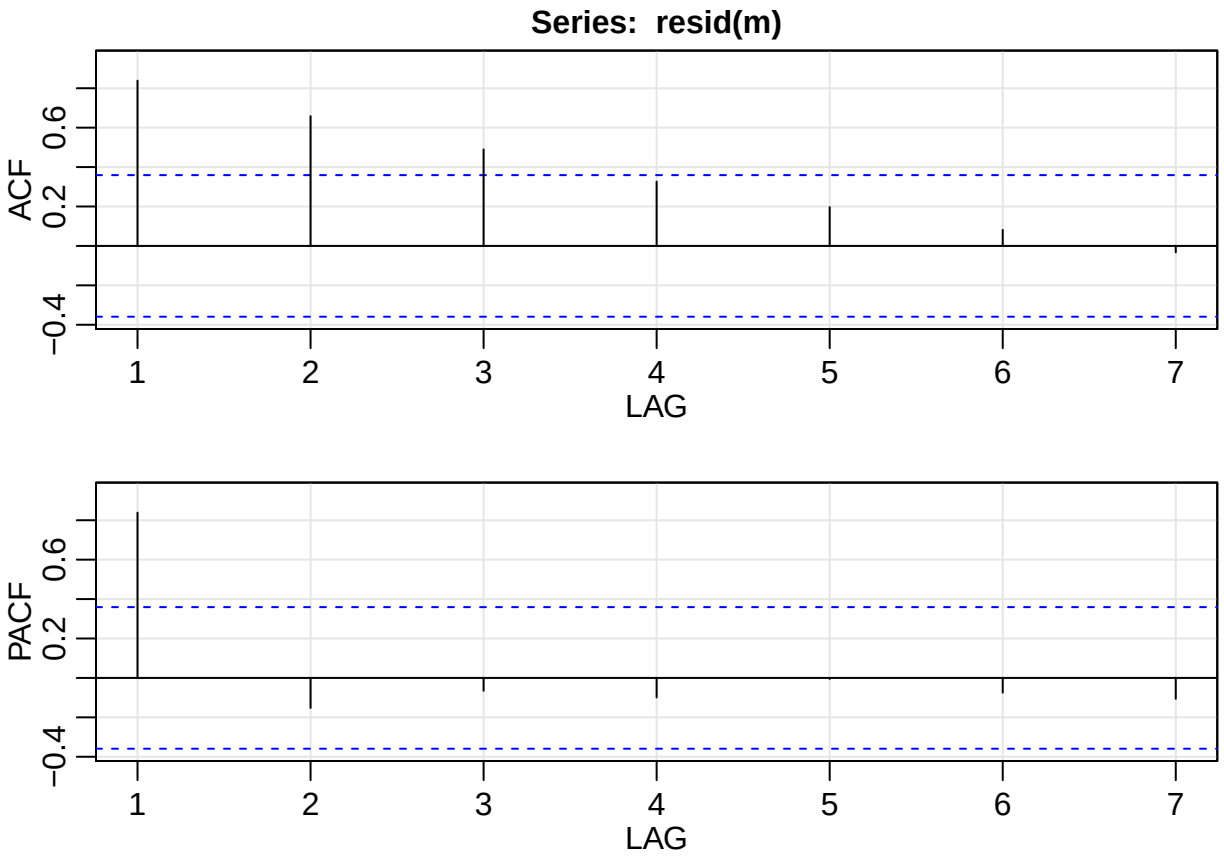









```
acf2(resid(m)) #residuals appear AR(1)
```




```
##        ACF  PACF
## [1,]  0.84  0.84
## [2,]  0.66 -0.15
## [3,]  0.49 -0.07
## [4,]  0.33 -0.10
## [5,]  0.20 -0.01
## [6,]  0.08 -0.07
## [7,] -0.03 -0.11
```

```
dwtest(m, alternative = "two.sided") #durbin-wqatson
```

```
##
##  Durbin-Watson test
##
## data:  m
## DW = 0.091667, p-value < 2.2e-16
## alternative hypothesis: true autocorrelation is not 0
```

```
#Stationarity? DF unit root test
adf.test(fe.ts.2, k=0) #standard DF test
```

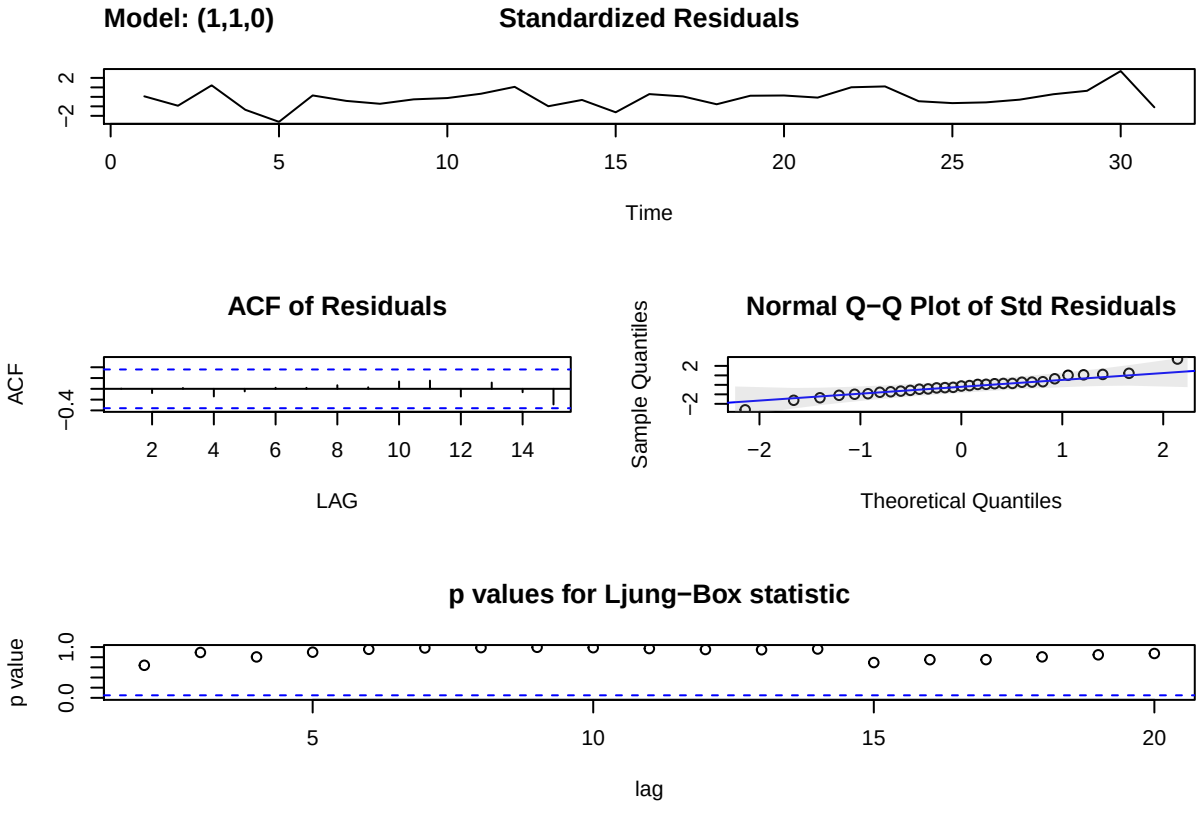
```
##
##  Augmented Dickey-Fuller Test
##
## data:  fe.ts.2
## Dickey-Fuller = 0.46148, Lag order = 0, p-value = 0.99
## alternative hypothesis: stationary
```

```
#high correlation with year
with(as.data.frame(fe.ts), cor(fexfel, YEAR, method = "pearson"))
```

```
## [1] 0.9898742
```

```
#preliminary model
fe.ts.2 <- as.ts(fe.ts$notemployed, start = 1980, end = 2010)
sarima(fe.ts.2, 1,1,0, xreg = fe.ts$fexfel)
```

```
## initial  value -0.076213
## iter   2 value -0.406302
## iter   3 value -0.414205
## iter   4 value -0.414362
## iter   5 value -0.414444
## iter   6 value -0.414445
## iter   6 value -0.414445
## final  value -0.414445
## converged
## initial  value -0.404520
## iter   2 value -0.404594
## iter   3 value -0.404620
## iter   4 value -0.404624
## iter   5 value -0.404624
## iter   5 value -0.404624
## iter   5 value -0.404624
## final  value -0.404624
## converged
```




```
## $fit
##
## Call:
## stats::arima(x = xdata, order = c(p, d, q), seasonal = list(order = c(P, D,
##     Q), period = S), xreg = xreg, optim.control = list(trace = trc, REPORT = 1,
```

```
##     reltol = tol))
##
## Coefficients:
##          ar1    xreg
##       0.7143  1.1042
## s.e.  0.1335  2.5525
##
## sigma^2 estimated as 0.4347:  log likelihood = -30.43,  aic = 66.86
##
## $degrees_of_freedom
## [1] 28
##
## $ttable
##      Estimate     SE t.value p.value
## ar1    0.7143 0.1335  5.3520  0.0000
## xreg   1.1042 2.5525  0.4326  0.6686
##
## $AIC
## [1] 0.2959867
##
## $AICc
## [1] 0.3891767
##
## $BIC
## [1] -0.611498
```

Table 7: Ages 18-40 Models

	Overall	Male	Female
	(1)	(2)	(3)
Felony History Pct.	0.371*** (0.103)	0.164 (0.098)	0.588*** (0.168)
Pop. Share 26-35	−0.044 (0.065)	−0.038 (0.054)	−0.010 (0.087)
Pop. Share 36-45	0.059 (0.064)	0.234*** (0.062)	−0.101 (0.082)
Pop. Share 46-55	−0.052 (0.067)	−0.009 (0.050)	−0.071 (0.104)
Pop. Share 56-65	0.099 (0.064)	0.065 (0.060)	0.159 (0.107)
Pop. Share 66+	0.027 (0.061)	0.174** (0.053)	−0.115 (0.095)
Ovr. Unemp. Rate t	0.940*** (0.062)	1.225*** (0.061)	0.670*** (0.091)
Ovr. Unemp. Rate t-1	0.108* (0.047)	0.102* (0.044)	0.101 (0.075)
Ovr. Unemp. Rate t-2	−0.001 (0.047)	0.009 (0.046)	−0.013 (0.077)
Ovr. Unemp. Rate t-3	0.220*** (0.042)	0.093* (0.042)	0.364*** (0.074)
Disab. Rate	0.119*** (0.033)	0.181*** (0.025)	0.077 (0.045)
Marriage Rate	0.011 (0.018)	−0.110*** (0.018)	0.102*** (0.026)
Effective Wage	−0.087 (0.112)	0.285** (0.100)	−0.457* (0.219)
Mean TANF Maximum	−0.001 (0.002)	0.001 (0.001)	−0.002 (0.003)
Unemployment Comp.	−0.001 (0.001)	−0.003 (0.002)	0.001 (0.002)
Degree Rate	−0.085*** (0.021)	−0.031 (0.020)	−0.157*** (0.033)
State FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	1,150	1,149	1,150
R^2	0.512	0.540	0.270
Adjusted R^2	0.472	0.503	0.210

Notes:
***Significant at the 0.1 percent level.
**Significant at the 1 percent level.
*Significant at the 5 percent level.
Clustered Standard Errors by State and Year.
Weighted by State-Year total pop.

Table 8: Working Age Models

	Overall	Male	Female
	(1)	(2)	(3)
Felony History Pct.	0.326** (0.104)	0.092 (0.089)	0.556*** (0.166)
Pop. Share 26-35	0.106* (0.043)	0.143*** (0.039)	0.093 (0.063)
Pop. Share 36-45	0.079 (0.049)	0.246*** (0.051)	−0.042 (0.068)
Pop. Share 46-55	−0.102 (0.056)	0.079 (0.043)	−0.247** (0.090)
Pop. Share 56-65	0.414*** (0.061)	0.430*** (0.057)	0.403*** (0.086)
Pop. Share 66+	0.121** (0.044)	0.277*** (0.043)	−0.023 (0.072)
Ovr. Unemp. Rate t	0.825*** (0.043)	1.044*** (0.052)	0.613*** (0.070)
Ovr. Unemp. Rate t-1	0.109** (0.034)	0.136*** (0.036)	0.089 (0.053)
Ovr. Unemp. Rate t-2	−0.011 (0.035)	−0.017 (0.035)	−0.005 (0.053)
Ovr. Unemp. Rate t-3	0.229*** (0.037)	0.092** (0.034)	0.366*** (0.062)
Disab. Rate	0.102*** (0.027)	0.157*** (0.019)	0.014 (0.041)
Marriage Rate	0.011 (0.030)	−0.119*** (0.026)	0.089* (0.038)
Effective Wage	0.011 (0.104)	0.195* (0.089)	−0.168 (0.181)
Mean TANF Maximum	0.001 (0.001)	0.002* (0.001)	−0.000 (0.002)
Unemployment Comp.	0.000 (0.001)	−0.002 (0.001)	0.002 (0.002)
Degree Rate	−0.045 (0.027)	−0.031 (0.017)	−0.064 (0.044)
State FE	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Observations	1,150	1,150	1,150
R^2	0.575	0.589	0.348
Adjusted R^2	0.541	0.555	0.294

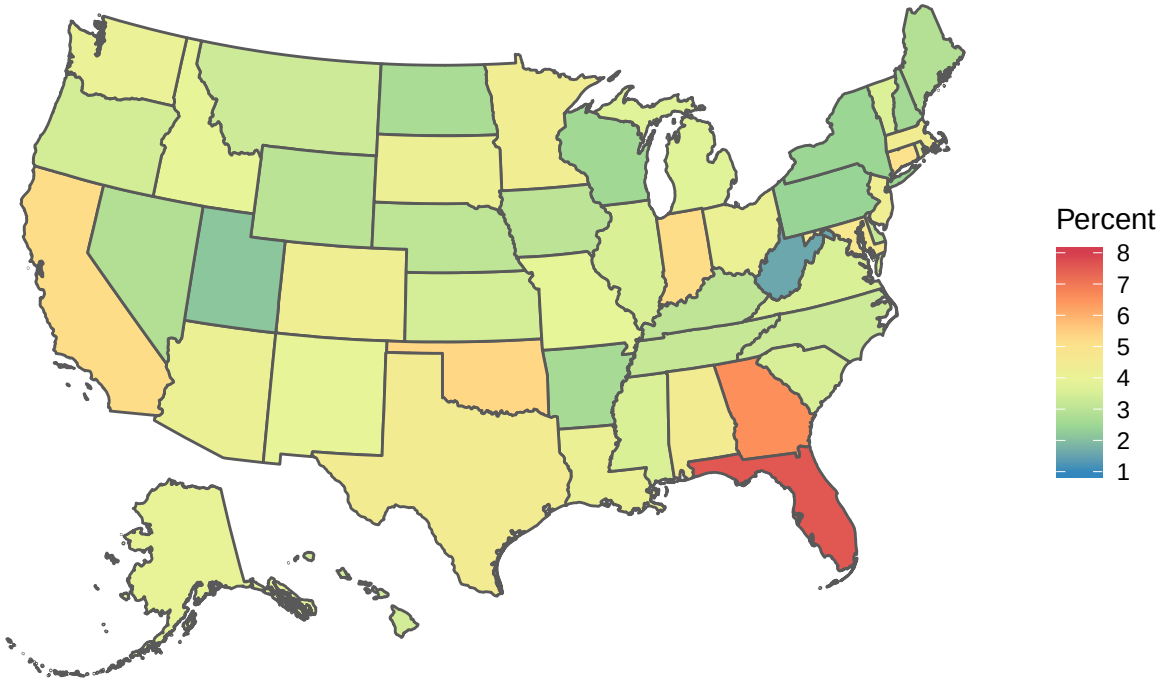
Notes: ***Significant at the 0.1 percent level.
**Significant at the 1 percent level.
*Significant at the 5 percent level.
Clustered Standard Errors by State and Year.
Weighted by State-Year total pop.

P7 (19-40) and P8 (Working-Age) Models

Felon Density Maps

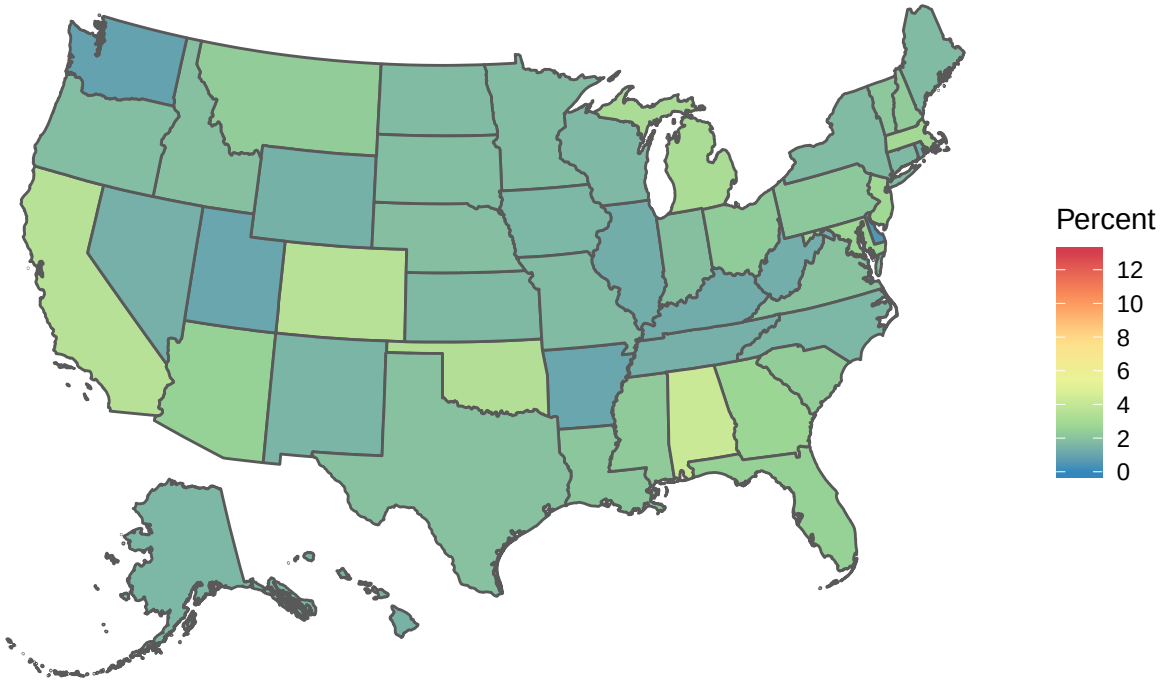
Felony History Pct. in the United States: 1980−2010

Shannon et al. 2017



Felony History Pct. in the United States: 1980

Shannon et al. 2017



Felony History Pct. in the United States: 2010

Shannon et al. 2017