Postwar American Suburbanization and the Evolution of Political Preferences

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Motivation

- Recent US General Elections have placed renewed focus on suburban voters
  - "*The Suburbs Helped Elect Biden. Can They Give Democrats the Senate, Too?" - NYT, Dec. 2020*
- Well-documented urban-rural divide (liberal-conservative), but urban-suburban divide might matter more in elections going forward
- Postwar suburbanization (1945-1970) accompanied by myriad social and economic factors whose influence on political preferences and outcomes may still persist

Research question

- Did US counties that experienced a greater quantifiable degree of suburbanization in the postwar period have larger voter support for conservative presidential candidates (relative to cities) in the decades since?
- Are such differences in political preferences primarily driven by social or economic considerations?

Challenges in the literature

- Popular methods of quantifying suburbanization have limitations
  - Is population density alone sufficient?
  - Canonical Clark (1951) model combining population density and distance to central city does not generalize well to geographic levels more granular than MSA
  - Postwar suburbanization characterized by social changes, e.g. Boustan (2010), that are often ignored
  - Emphasis on binary urban-suburban divisions as opposed to continuous measures
- Focus on contemporary polarization, less so on impact of historical processes
  - Do demographic shifts explain everything?
  - Bazzi et al. (2020) suggests historical geographic shifts influence politics many decades later
  - Political preferences fundamentally driven by attitudes (Kuziemko and Washington 2018)

This Paper

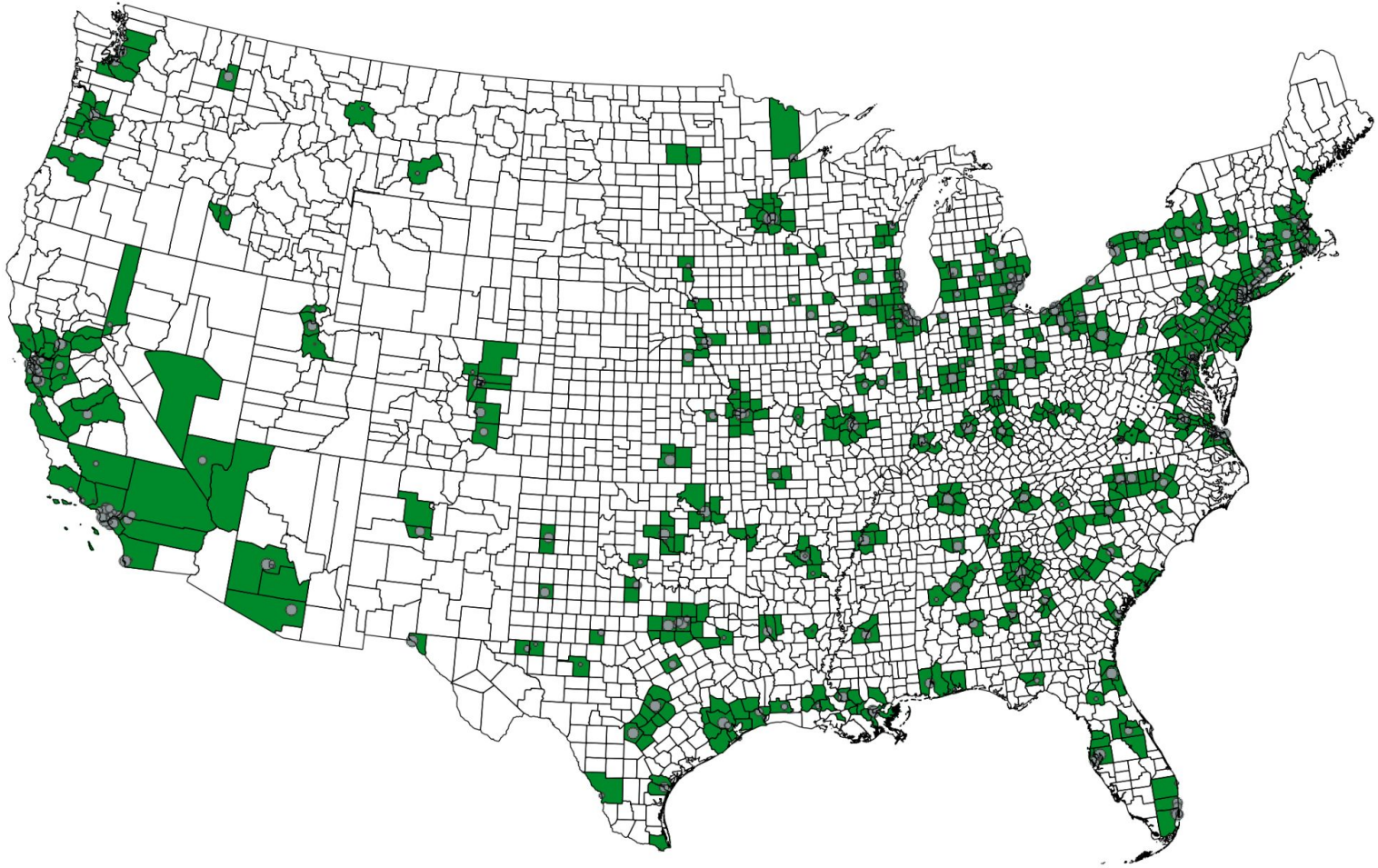
- Construct a continuous measure of suburbanization on a 0-1 scale using county-level characteristics from the end of the standard postwar period, e.g. 1970
- Estimate the effects of postwar suburbanization on Presidential Election voting in 4 subsequent decades
- Examine how postwar suburbanization has affected social and economic attitudes of voters many years later

Data

- County-level characteristics, MSA and Place
  - Decennial Census (NHGIS)
- County-level US Presidential Election vote counts
  - Dave Leip's Atlas of US Presidential Elections
- County-level highway development
  - Baum-Snow (2007)
- Individual-level Election Surveys
  - Cooperative Congressional Election Study (CCES)

Setting

- MSAs containing at least one city with population of 50,000+ (UA) in 1970
  - Consistent with Census Urbanized Area (UA) Classification
- 173 MSAs
- 681 counties
- Elections: 1980,1992,2000,2012
- Election Surveys: 2012 CCES
  - Sample of 37,400 individuals



Methodology- Quantifying Suburbanization (1)

- Classification Problem
- Let S_c denote the share of population in county *c* living in a UA in 1970
- Define D_c as follows:

$$D_c = \begin{cases} 1 & \text{if } S_c < 0.5 \\ 0 & \text{if } S_c \geq 0.5 \end{cases}$$

- Logistic regression with outcome D_c and features $\boldsymbol{X}_c$ and α_R where $\boldsymbol{X}_c$ is a vector of 1970 county-level characteristics (population density, distance to MSA's largest city, share nonwhite, share HS grad) and α_R are Census subregion dummies
- Predicted $Pr(D_c = 1 \mid \boldsymbol{X}_c, \alpha_R)$ is our measurement of suburbanization (key independent variable). Denote as *Pr*(Sub)

Methodology- Quantifying Suburbanization (2)

- Use 70/30 training/test split at the MSA level
  - Training: 476 counties, Test: 206 counties
- Model performance (based on 0.5 threshold for *Pr*(Sub)):
  - Training:
    - Accuracy: 91.0%
    - Sensitivity: 94.2%
    - Specificity: 79.0%
  - Test:
    - Accuracy: 87.4%
    - Sensitivity: 93.8%
    - Specificity: 72.1%

Methodology- Preferred Specification

$$y_c = \beta\, Pr(\text{Sub})_{c,1970} + \boldsymbol{X_c}'\boldsymbol{\gamma} + \alpha_R + \varepsilon_c \qquad (1)$$

- y_c is the Republican presidential candidate vote share in county *c* for a given election year
- $Pr(\text{Sub})_{c,1970}$ is our measurement of suburbanization in 1970
- $\boldsymbol{X_c}$ vector of controls in election year- share nonwhite, share college grad, median HH income, average age
- α_R subregion fixed effects
- As baseline comparison (in Appendix B), estimate alternative spec with $log(\text{PopDensity}_{c,1970})$ in lieu of $Pr(\text{Sub})_{c,1970}$

Methodology- Instrument for Suburbanization

- Postwar highway development and suburbanization are intricately linked
- Use federal highway development in 1970 as an instrument for $Pr(\text{Sub})_{c,1970}$
  - County-level data from Baum-Snow (2007)
  - Instrument Z_c defined as number of long-distance highway miles per square mile of county area
- Highway development positively correlated with population density in MSAs
- Exclusion restriction- postwar highway construction not more/less likely to materialize in counties that were un-observably more/less likely to vote Republican or hold conservative beliefs

Results- OLS

Table 1: OLS-Republican Vote Share, 1980-2012

	Dependent Variable: Republican Presidential Vote Share							
	1980		1992		2000		2012	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Pr(Suburb)	0.051***	0.001	0.057***	-0.030***	0.125***	-0.002	0.178***	0.030*
	(0.013)	(0.012)	(0.011)	(0.011)	(0.016)	(0.014)	(0.018)	(0.016)
Observations	681	681	681	681	681	681	681	681
R^2	0.031	0.325	0.045	0.400	0.109	0.609	0.150	0.694
Demographic Controls	N	Y	N	Y	N	Y	N	Y
Subregion FE	N	Y	N	Y	N	Y	N	Y

Note: ***, **,* indicate significance at 1%,5%,10% levels

Results- IV

Table 2: IV-Republican Vote Share, 1980-2012

	Dependent Variable: Republican Presidential Vote Share			
	1980	1992	2000	2012
	(1)	(2)	(3)	(4)
Panel A: Second Stage				
Pr(Suburb)	0.160***	0.150**	0.228**	0.282***
	(0.059)	(0.071)	(0.090)	(0.102)
First stage F-statistic	31.48	20.07	15.89	14.51
Observations	554	554	554	554
R^2	0.177	0.203	0.468	0.567
Panel B: First Stage				
Highway mileage	-1.494***	-1.158***	-0.948***	-0.944***
	(0.266)	(0.259)	(0.238)	(0.248)
Panel C: OLS				
Pr(Suburb)	0.006	-0.027**	0.002	0.026
	(0.013)	(0.012)	(0.016)	(0.016)
Observations	554	554	554	554
R^2	0.334	0.418	0.623	0.710
Demographic Controls	Y	Y	Y	Y
Subregion FE	Y	Y	Y	Y

Notes: ***, **,* indicate significance at 1%,5%,10% levels

The Marriage Puzzle

- Counties that are more quantifiably suburban in 1970 are more likely to vote Republican in future elections than urban counterparts, after controlling for key demographic characteristics and Subregion fixed effects
- Marriage rates absent from vector of controls
    - Evidence that even after controlling for other demographic characteristics, marital status affects political preferences
- Re-estimate eq. (1) by OLS and 2SLS after including share of married-age adults in county who have ever married

Table 3: IV-Republican Vote Share, 1980-2012 (with Marriage control)

	Dependent Variable: Republican Presidential Vote Share			
	1980	1992	2000	2012
	(1)	(2)	(3)	(4)
Panel A: Second Stage				
Pr(Suburb)	0.119**	0.078	0.058	0.143
	(0.054)	(0.064)	(0.081)	(0.109)
First stage F-statistic	29.34	16.71	11.67	8.55
Observations	554	554	554	554
R^2	0.322	0.415	0.702	0.725
Panel B: First Stage				
Highway mileage	-1.458***	-1.073***	-0.833***	-0.728***
	(0.269)	(0.263)	(0.244)	(0.249)
Panel C: OLS				
Pr(Suburb)	-0.004	-0.043***	-0.026**	-0.022
	(0.012)	(0.011)	(0.013)	(0.015)
Observations	554	554	554	554
R^2	0.422	0.514	0.723	0.780
Demographic Controls	Y	Y	Y	Y
Marriage	Y	Y	Y	Y
Subregion FE	Y	Y	Y	Y

Notes: ***, **,* indicate significance at 1%,5%,10% levels

The Marriage Puzzle, continued

- Estimate of β no longer statistically significant after 1980 after controlling for marriage rates
- Do suburbs not matter in shaping political preferences?
  - Residential sorting
  - Long-standing idealized conception of suburbia stemming from postwar suburban expansion still salient for married couples and families
    - State Farm's "Never" commercial, circa 2015: Man whispers to wife and baby, "We are never moving to the suburbs"...One second later…family has moved to the suburbs
  - Intra-suburban network effects may be harder to disentangle
- Can we learn more from survey data?

At the individual level

- Is the relationship between postwar suburbanization and political preferences being driven by social attitudes or economic beliefs?
- Use the 2012 CCES
  - Able to identify respondent's county of residence
- Ideology:
  - Self-reported political identity, i.e. conservative or liberal with levels of intensity
- Social attitudes:
  - Dummy variable for opposition to Affirmative Action
- Economic beliefs:
  - Dummy variable for preference towards spending cuts over raising taxes as a means of budget deficit reduction

Results

Table 4: IV-Individual Conservatism, 2012 CCES

	Dependent Variable: Conservatism (0-1)					
	Ideology		Social		Economic	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Second Stage						
Pr(Suburb)	0.150***	0.117***	0.315***	0.132***	0.014	0.019
	(0.031)	(0.021)	(0.025)	(0.026)	(0.017)	(0.015)
First stage F-statistic	51.14	61.02	51.14	61.02	51.14	61.02
Observations	37,400	37,400	37,400	37,400	37,400	37,400
R^2	-0.011	0.068	-0.009	0.187	0.000	0.013
Panel B: First Stage						
Highway mileage	-2.772***	-2.877***	-2.772***	-2.877***	-2.772***	-2.877***
	(0.388)	(0.368)	(0.388)	(0.368)	(0.388)	(0.368)
Panel C: OLS						
Pr(Suburb)	0.053***	0.063***	0.136***	0.077***	0.010	0.003
	(0.013)	(0.008)	(0.019)	(0.011)	(0.007)	(0.007)
Observations	37,400	37,400	37,400	37,400	37,400	37,400
R^2	0.005	0.072	0.011	0.188	0.0001	0.013
Demographic Controls	N	Y	N	Y	N	Y
Subregion FE	N	Y	N	Y	N	Y

Notes: 'Self-report' is constructed from a question that asks the respondent to rate their political preferences on a 7 point scale, from very liberal to very conservative. I convert this to a 0-1 scale where 1 is very conservative. 'Social' is a dummy variable equal to 1 if the respondent opposes Affirmative Action. 'Economic' is a dummy variable equal to 1 if the respondent would prefer to cut spending over raising taxes in order to reduce the budget deficit. Standard errors are clustered at the county level. ***, **,* indicate significance at 1%,5%,10% levels

Controlling for marital status...

Table 5: IV-Individual Conservatism, 2012 CCES (with Marriage control)

	Dependent Variable: Conservatism (0-1)		
	Ideology	Social	Economic
	(1)	(2)	(3)
Panel A: Second Stage			
Pr(Suburb)	0.099***	0.118***	0.015
	(0.020)	(0.025)	(0.015)
First stage F-statistic	60.24	60.24	60.24
Observations	37,400	37,400	37,400
R^2	0.081	0.192	0.013
Panel B: First Stage			
Highway mileage	-2.855***	-2.855***	-2.855***
	(0.368)	(0.368)	(0.368)
Panel C: OLS			
Pr(Suburb)	0.056***	0.069***	0.001
	(0.008)	(0.011)	(0.006)
Observations	37,400	37,400	37,400
R^2	0.084	0.193	0.013
Demographic Controls	Y	Y	Y
Marriage	Y	Y	Y
Subregion FE	Y	Y	Y

Notes: 'Self-report' is constructed from a question that asks the respondent to rate their political preferences on a 7 point scale, from very liberal to very conservative. I convert this to a 0-1 scale where 1 is very conservative. 'Social' is a dummy variable equal to 1 if the respondent opposes Affirmative Action. 'Economic' is a dummy variable equal to 1 if the respondent would prefer to cut spending over raising taxes in order to reduce the budget deficit. Standard errors are clustered at the county level. ***, **,* indicate significance at 1%,5%,10% levels

Takeaways at the individual level

- Individuals living in counties that were more suburban at the end of the traditional postwar era are more likely to identify as conservative and more likely to hold socially conservative viewpoints, e.g. oppose Affirmative Action
- No detectable relationship between postwar suburbanization and individual fiscal conservatism
- Emphasis on social/racial attitudes consistent with Kuziemko and Washington (2018) finding that racial conservatism was a much stronger explanation of Democratic Party exodus in the late 20th century than non-racial preferences

Conclusion

- US counties that were more suburban at the end of the traditional postwar era have had higher Republican vote shares in subsequent presidential elections, after controlling for myriad county-level characteristics
- Effects largely disappear when additionally controlling for share of population that is/was married
    - Key question: Does sorting rule out any effect of suburbanization on political preferences?
- 21st century voters living in counties that were more suburban in 1970 have more conservative political ideologies and social attitudes, but not economic/fiscal beliefs
- Individual preferences hold even after controlling for marital status in addition to individual demographic characteristics

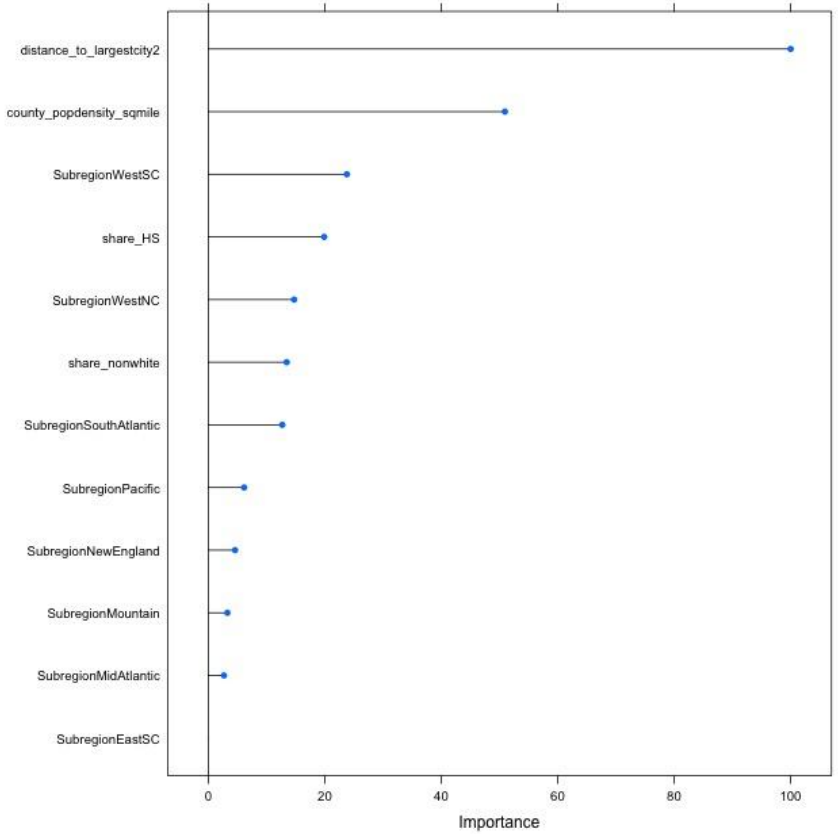
Broader Considerations

- Residential sorting by marital status may still be directly influenced by historic, ‘idealized’ conceptualizations of suburbanization
- Political polarization and urban/rural divides concurrent with a broader trend of re-examining economic inequality across space (Moretti 2013, Diamond 2016)
- Past two general elections in the US have placed an even greater emphasis on differences in social attitudes
    - Important to monitor implications that may arise from simultaneously increased polarization across Geography (political representation) and in beliefs (policy agendas)

Appendices

- Appendix A: Additional details about Classification model
- Appendix B: Replicates main tables in the paper using a more traditional measure of suburbanization
  - Specifically, use log-Population Density in 1970, which is common in the literature
  - Metropolitan Counties with lower population density are more considered more suburban than their denser, urban counterparts
- Other: TBD

Appendix A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county_popdensity_sqmile
SubregionWestSC
share_HS
SubregionWestNC
share_nonwhite
SubregionSouthAtlantic
SubregionPacific
SubregionNewEngland
SubregionMountain
SubregionMidAtlantic
SubregionEastSC
0
20
40
60
80
100
Importance

Appendix B

Table B1: OLS-Republican Vote Share, 1980-2012

	Dependent Variable: Republican Presidential Vote Share							
	1980		1992		2000		2012	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
log(Population Density)	-0.017***	-0.010***	-0.016***	-0.007***	-0.050***	-0.019***	-0.066***	-0.020***
	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)	(0.003)
Observations	681	681	681	681	681	681	681	681
R^2	0.068	0.338	0.074	0.401	0.366	0.632	0.427	0.708
Demographic Controls	N	Y	N	Y	N	Y	N	Y
Subregion FE	N	Y	N	Y	N	Y	N	Y

Notes: ***, **,* indicate significance at 1%,5%,10% levels

Table B2: IV-Republican Vote Share, 1980-2012

	Dependent Variable: Republican Presidential Vote Share			
	1980	1992	2000	2012
	(1)	(2)	(3)	(4)
Panel A: Second Stage				
log(Population Density)	-0.023***	-0.019***	-0.026***	-0.033***
	(0.007)	(0.007)	(0.008)	(0.008)
First stage F-statistic	117.80	103.62	88.86	86.07
Observations	554	554	554	554
R^2	0.338	0.419	0.645	0.715
Panel B: First Stage				
Highway mileage	10.473***	9.257***	8.463***	8.176***
	(0.965)	(0.909)	(0.898)	(0.881)
Panel C: OLS				
log(Population Density)	-0.012***	-0.011***	-0.021***	-0.019***
	(0.003)	(0.003)	(0.003)	(0.004)
Observations	554	554	554	554
R^2	0.351	0.426	0.646	0.722
Demographic Controls	Y	Y	Y	Y
Subregion FE	Y	Y	Y	Y

Notes: ***, **,* indicate significance at 1%,5%,10% levels

Table B3: IV-Republican Vote Share, 1980-2012 (with Marriage control)

	Dependent Variable: Republican Presidential Vote Share			
	1980	1992	2000	2012
	(1)	(2)	(3)	(4)
Panel A: Second Stage				
log(Population Density)	-0.017**	-0.010	-0.006	-0.014
	(0.007)	(0.007)	(0.009)	(0.010)
First stage F-statistic	106.63	80.05	65.42	68.42
Observations	554	554	554	554
R^2	0.414	0.496	0.724	0.780
Panel B: First Stage				
Highway mileage	10.071***	8.423***	7.478***	7.423***
	(0.975)	(0.941)	(0.924)	(0.897)
Panel C: OLS				
log(Population Density)	-0.007**	-0.003	-0.009***	-0.008**
	(0.003)	(0.003)	(0.003)	(0.004)
Observations	554	554	554	554
R^2	0.426	0.502	0.724	0.781
Demographic Controls	Y	Y	Y	Y
Marriage	Y	Y	Y	Y
Subregion FE	Y	Y	Y	Y

Notes: ***, **,* indicate significance at 1%,5%,10% levels

Table B4: IV-Individual Conservatism, 2012 CCES

	Dependent Variable: Conservatism (0-1)					
	Ideology		Social		Economic	
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A: Second Stage						
log(Population Density)	-0.026***	-0.023***	-0.055***	-0.028***	-0.002	-0.004
	(0.004)	(0.004)	(0.005)	(0.004)	(0.003)	(0.003)
First stage F-statistic	99.70	100.04	99.70	100.04	99.70	100.04
Observations	37,400	37,400	37,400	37,400	37,400	37,400
R^2	0.024	0.076	0.024	0.189	0.000	0.013
Panel B: First Stage						
Highway mileage	15.785***	13.758***	15.785***	13.758***	15.785***	13.758***
	(1.581)	(1.376)	(1.581)	(1.376)	(1.581)	(1.376)
Panel C: OLS						
log(Population Density)	-0.030***	-0.023***	-0.049***	-0.023***	-0.001	-0.003*
	(0.002)	(0.002)	(0.003)	(0.003)	(0.002)	(0.002)
Observations	37,400	37,400	37,400	37,400	37,400	37,400
R^2	0.024	0.076	0.024	0.189	0.00001	0.013
Demographic Controls	N	Y	N	Y	N	Y
Subregion FE	N	Y	N	Y	N	Y

Notes: 'Self-report' is constructed from a question that asks the respondent to rate their political preferences on a 7 point scale, from very liberal to very conservative. I convert this to a 0-1 scale where 1 is very conservative. 'Social' is a dummy variable equal to 1 if the respondent opposes Affirmative Action. 'Economic' is a dummy variable equal to 1 if the respondent would prefer to cut spending over raising taxes in order to reduce the budget deficit. Standard errors are clustered at the county level. ***, **,* indicate significance at 1%,5%,10% levels

Table B5: IV-Individual Conservatism, 2012 CCES (with Marriage control)

	Dependent Variable: Conservatism (0-1)		
	Ideology	Social	Economic
	(1)	(2)	(3)
Panel A: Second Stage			
log(Population Density)	-0.021***	-0.025***	-0.003
	(0.003)	(0.004)	(0.003)
First stage F-statistic	99.10	99.10	99.10
Observations	37,400	37,400	37,400
R^2	0.087	0.194	0.013
Panel B: First Stage			
Highway mileage	13.669***	13.669***	13.669***
	(1.373)	(1.373)	(1.373)
Panel C: OLS			
log(Population Density)	-0.020***	-0.021***	-0.003
	(0.002)	(0.003)	(0.002)
Observations	37,400	37,400	37,400
R^2	0.087	0.194	0.013
Demographic Controls	Y	Y	Y
Marriage	Y	Y	Y
Subregion FE	Y	Y	Y

Notes: 'Self-report' is constructed from a question that asks the respondent to rate their political preferences on a 7 point scale, from very liberal to very conservative. I convert this to a 0-1 scale where 1 is very conservative. 'Social' is a dummy variable equal to 1 if the respondent opposes Affirmative Action. 'Economic' is a dummy variable equal to 1 if the respondent would prefer to cut spending over raising taxes in order to reduce the budget deficit. Standard errors are clustered at the county level. ***, **,* indicate significance at 1%,5%,10% levels