Political Economics III
Section II & III

Politics and Distribution:

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Outline of Politics of Distribution I

- Lecture 1:
  - Overview of facts about differences in distributional mechanisms and outcomes across countries
    - Redistribution versus Rent-seeking
    - Transfers (Means Testing and Political Stability)
    - Wage Determination
  - Differences in political institutions:
    - Majoritarian versus Proportional Representation
    - Presidential versus Parliamentary
    - Differences in Voting Rights of Minorities
    - Differences in Constitutions

Outline of Politics of Distribution II

- Differences in beliefs about the world
  - Differences in notions of fairness
  - Production of differences of beliefs
    - Differences in Economies
    - Differences in Educational Systems and Political Systems
    - Differences in Media

- Differences in Degree of Diversity:
  - Racial Diversity
  - Class Differences and Maintenance of Support for Redistribution
  - Gender, Marriage and Distribution
  - Empathy

Outline of Politics of Distribution II

- Detailed Discussion: Does Politics Matter?
  - Heterogeneity of forms of political rights across countries
  - Lee et al. paper
  - Pande Paper

Why US Doesn't Have a Welfare State (Alesina, Glaeser, Sacerdote): I

- Differences in policies:
  - Tax Rates (US – higher capital, much lower labor, lower G/Y ratio)
  - Sickness Insurance (Only 5 states in US for a few weeks as compared with 1.5 years at 80% or 90% replacement in much of Europe)
  - Health Care (Public in Europe, Private in US, much higher % of GDP goes to healthcare in US but also much lower percentage have access)
  - Family Benefits (universal, 18 months in Germany – replacement rates 80-90%; nothing in the US)
  - Income Support (much higher in Europe)
  - Labor Market Policies (Most wages set by collective bargaining, often times national, in Europe; 8% of private labor force unionized in US)

Why US Doesn't Have a Welfare State (Alesina, Glaeser, Sacerdote): II

- Measuring welfare:
  - Prices are most likely more compressed in countries with low income inequality so that "welfare" inequality is probably greater than income inequality in low-inequality societies relative to high-inequality societies.
  - Many public programs provide insurance – not clear how to value this (i.e. you know you will never starve in Sweden)
  - People across different countries have different tastes; its not clear how to compare across countries
  - Different countries have different distributions of income – there is no way to value the increase in one person's income relative to the decrease in another's

Why US Doesn't Have a Welfare State (Alesina, Glaeser, Sacerdote): III

- Growth and Inequality: Is there a tradeoff? Lindbeck (1997), "Welfare State Dynamics" in *The Welfare State in Europe, Challenges and Reforms*: yes. In 1970 Sweden had 115% of mean OECD income. By 1995, 95% of mean OECD income but:
  - Since 1995, Sweden has grown more than most of Europe
  - Some of this is larger reductions in work hours, less divergence in labor productivity
  - Sweden has higher participation rates than much of Europe

- Private versus Public Charity and crowdout:
  - Glaeser and Shleifer, "Not for Profit Entrepreneurs", JPub 2001 claims that public expenditures on redistribution will crowd out private expenditures
  - Alesina, Glaeser and Sacerdote show using data from the World Values Survey that 11% of respondents said they participated in a charitable group in the US, 4% in Europe (Netherlands the highest at 9%, Denmark the lowest at 2%).

Why US Doesn’t Have a Welfare State (Alesina, Glaeser, Sacerdote): IV

- Alesina, Glaeser, and Sacerdote explanation for why there is more redistribution in Europe: racial homogeneity. People do not like to redistribute to members of other races. Moreover, strong correlation between race and class where the low-income racial group is a minority strengthens anti-redistribution tendencies.

- Also, countries with greater social mobility are more anti-redistribution

- Pre-tax inequality lowers when taxes are progressive due to increased costs of paying high incomes.

Political Systems I

- Different countries have very different:
  - Electoral Rules
    - Proportional vs. Majoritarian
    - Presidential versus Parliamentary (US vs. Switzerland)
    - Set aside seats (India, Belgium, New Zealand, US Senate)
    - Blocking rights through voting rights and through constitutions
  - Cultures (social preferences)
  - Economic systems (Redistribution via Transfers versus Redistribution via Economic Structure)
    - Laws on Income Determination: Centralized collective bargaining in Sweden not in US
    - Minimum wage in US, not in Sweden
    - Publicly provided health insurance in Canada – means tested in US
    - Guaranteed permanent minimum income in Sweden- temporary in US and not for everyone
- Different countries have very different distributions of income (before and after taxes and transfers)

Political Systems II

- Does the structure of political institutions matter?
  - (1.) Can affect the weights on votes over issues, can effect rights to make decisions on issues (veto rights, assigned rights).
  - (2.) Can affect who gets voted in as a representative (i.e. even fixing the rules which determine how votes are counted, who gets elected may matter).

Political Systems III

- Parliamentary systems as well as proportional representation systems seem to be associated with higher GOV/GDP ratios

- Basic idea: based on Duverger's law.
  - With majoritarian, never worthwhile to have more than two parties

  - With proportional representation, small parties can enter because they get ex-post bargaining power even if they do not get a majority of votes

  - PR systems then have larger coalitions in government which then serve more special interests. Amongst other things these models (also, Lizzeri and Persico, JEEA: A Cost of Political Competition) assume that interest groups (1.) cant bargain over targeted tax cuts and (2.) are not able to influence through campaign contributions in majoritarian systems; similar story in Persson, Roland and Tabellini (2003) working paper (How do electoral rules shape party structures, government coalitions, and economic policies?).

  - Above model does not explain why there is greater general redistribution in proportional systems – just why there is greater spending in favor of special interests.

Political Systems IV

Other possibility: parliamentary systems have large numbers of parties including ideological parties. The marginal excluded parties are more to the left because the right wing ones are already served in a majoritarian systems because both parties are bought out by the rich.

Third Possibility: Middle class prefers taxing the wealthy to no taxes and no taxes to full equality. In majoritarian, they get either taxing the wealthy or full equality. With the rich, they get taxing the wealthy or no taxes. They prefer the latter. With PR, they get moderate redistribution which they prefer to little redistribution if the form coalitiopn with the right. (Iversen and Sockice, APSR, 2006, Electoral Insitutions and the Politics of Coalitions: Why Some Democracies Redistribute More than Others).

Empirical Evidence?

Alesina, Baqir and Easterly: Public Goods and Ethnic Divisions I

- Individuals care about quantity and quality of public goods:

$$U_i = g^a\left(l - \hat{l}_i\right) + y - g$$

where

$$g = t = y - c$$

so that

$$g_i^* = \left[a\left(l - \hat{l}_m\right)\right]^{\frac{1}{1-a}}$$

Alesina, Baqir and Easterly: Public Goods and Ethnic Divisions II

- Thus the amount of public goods is decreasing in the median distance from the median voter's preferences.

- As a consequence, more heterogeneous (loosely defined) communities have lower levels of provision of public services.

COROLLARY. The equilibrium amount of public good is decreasing in $\hat{l}_i^m$, the median distance from the median.

The median distance from the median can be considered an indicator of polarization of preferences, as illustrated in Figure I. Panel (a) shows a case of low median distance from the median; panel (b) shows a case of a larger median distance from the median. The picture of panel (b) is an example of a polarized society, with two separate groups with relatively homogeneous

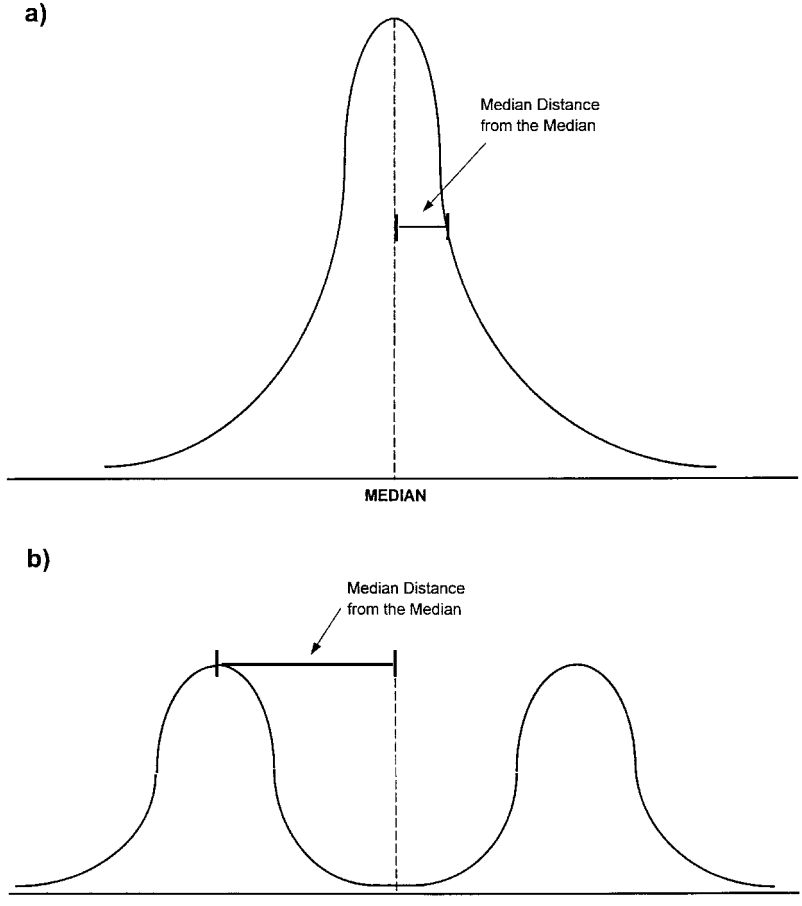

FIGURE I
Examples of Different "Median Distances from the Median"

TABLE III
DEPENDENT VARIABLE IS EXPENDITURE SHARE ON ROADS, CITY SAMPLE

RHS var.	1	2	3	4	5	6
Constant	0.14	0.12	0.18	0.18	0.29	0.28
	(31.44)	(14.07)	(7.35)	(7.40)	(9.33)	(9.22)
Ethnic fractionalization	−0.098	−0.090	−0.080	−0.079	−0.060	−0.083
	(−8.69)	(−7.68)	(−6.39)	(−6.34)	(−4.72)	(−6.38)
Income per capita		1.11E-06	1.14E-06	7.00E-07	−1.47E-07	9.34E-07
		(2.52)	(2.56)	(1.30)	(−0.26)	(1.70)
Log of population			−0.006	−0.006	−0.006	−0.006
			(−2.66)	(−2.72)	(−2.62)	(−2.86)
Percentage BA graduates				0.028	0.085	0.007
				(1.25)	(3.42)	(0.26)
Mean to median income ratio					−0.096	−0.047
					(−6.03)	(−2.86)
Fraction of population >65						−0.253
						(−6.25)
No. of obs.	1020	1020	1020	1020	1020	1020
Adj R^2	0.07	0.07	0.07	0.07	0.11	0.13

Heteroskedasticity-corrected t-statistics are in parentheses.

population size, to income inequality, and to age structure. We now present all our results organized by groups of related variables.

Table IV (like Table V which will follow) is organized in this way: the first column identifies the dependent variable. The following two columns report the coefficients and the t-statistics of the variable ETHNIC in two different regressions that are identical to regression 1 (no controls) and regression 6 (all controls) reported in full in Table III.[28] We report in Table IV our results for all three samples: cities, metropolitan areas, and counties. The control variables are the same in all three samples. The only difference is that for metropolitan areas and counties we present results using two-stage-least squares. We instrument for both ETHNIC and income per capita, using the values of ETHNIC and income per capita in 1979–1980. Results using OLS are similar and are available upon request. We did not have the earlier data to use as instruments for the city sample. When a dependent variable does not appear in all three samples, it is because of data

28. For the sake of completeness we also report in this table the regressions on the expenditure share on roads, which are, of course, identical to those of Table III. We have also checked that the results on ETHNIC are robust to adding one control variable at a time, like in Table III. Our results are indeed robust.

TABLE V
COEFFICIENTS ON ETHNIC IN SIX REGRESSIONS FOR FISCAL AGGREGATES

Dependent variable:	Regressions 1 (no controls)	6 (all controls)	#obs	Adj. R^2
Government balances				
City				
Intergovt revenue per capita	174.7	64.1	1020	0.07
	(3.45)	(1.39)		
Surplus (after transfers) per capita	−39.8	−78.3	1020	0.01
	(−1.69)	(−2.77)		
Surplus (before transfers) per capita	−214.5	−142.3	1020	0.05
	(−3.81)	(−2.55)		
Metro				
Intergovt revenue per capita	269	24	304	0.08
	(2.11)	(0.15)		
Surplus (after transfers) per capita	96	6	304	0.02
	(1.79)	(0.07)		
Surplus (before transfers) per capita	−173	−18	304	0.06
	(−1.35)	(−0.12)		
Debt per capita	1438	1117	303	0.17
	(2.95)	(1.83)		
County				
Intergovt revenue per capita	293	166	1385	0.05
	(5.54)	(2.60)		
Surplus (after transfers) per capita	44	23	1385	0.003
	(1.15)	(0.48)		
Surplus (before transfers) per capita	−115	−50	1396	0.01
	(−2.65)	(−0.80)		
Debt per capita	837	1079	1386	0.01
	(1.88)	(2.24)		
Taxes, spending				
City				
Taxes per capita	184.1	150.0	1020	0.17
	(3.25)	(2.73)		
Expenditure per capita	506.0	317.9	1020	0.12
	(4.44)	(2.96)		
Metro				
Taxes per capita	−140	−173	304	0.53
	(−1.27)	(−1.61)		
Expenditure per capita	497	420	304	0.21
	(2.11)	(1.33)		
County				
Taxes per capita	−172	−47	1386	0.45
	(−2.80)	(−0.97)		
Expenditure per capita	365	400	1386	0.15
	(3.16)	(3.35)		

Regressions 1 through 6 include the set of control variables that are in regressions 1 through 6 in Table III. Heteroskedasticity-corrected t-statistics are in parentheses.

Table 3: OLS Regressions Coefficients and Standard Errors for Roommate Predictors of Attitudes of White Students 2-6 Years After Entering College

	Affirmative action in college admissions should be abolished (reverse coding) [a]		Affirmative action is justified if it ensures a diverse student body on college campuses [b]		Having a diverse student body is essential for high-quality education [b]		Wealthy people should pay more taxes [b]	
ROOMMATES' CHARACTERISTICS								
Any black roommate(s)	.342*	.620**	.412**	.561***	.539***	.573***	.293	.306
	(.204)	(.248)	(.197)	(.209)	(.177)	(.196)	(.236)	(.290)
Any other minority roommate(s)	.029	.031	.116	.106	.028	.030	.022	.015
	(.089)	(.089)	(.090)	(.089)	(.083)	(.082)	(.090)	(.088)
Only white roommate(s) [omitted group]	-	-	-	-	-	-	-	-
At least one roommate with family income < $50,000	.098	.102	-.006	-.012	.206**	.156	.037	.070
	(.105)	(.144)	(.108)	(.148)	(.100)	(.124)	(.107)	(.139)
At least one roommate with family income between $50,000 and $74,999	.015	.027	.031	.043	.054	.057	.036	.049
	(.090)	(.089)	(.089)	(.090)	(.086)	(.085)	(.082)	(.081)
At least one roommate with family income between $75,000 and $149,999 [omitted group]	-	-	-	-	-	-	-	-
At least one roommate with family income between $150,000 and $199,999	.057	.070	.053	.070	.049	.054	.112	.122
	(.107)	(.105)	(.105)	(.104)	(.099)	(.099)	(.093)	(.094)
At least one roommate with family income > $200,000	-.019	.004	-.059	-.079	.111	.037	-.169*	-.307***
	(.093)	(.116)	(.096)	(.120)	(.094)	(.111)	(.089)	(.112)
TIME AND INTERACTIONS								
Years since sophomore year	.121	-	.079	-	-.088	-	.050	-
	(.091)		(.088)		(.093)		(.095)	
Any black roommate * 1997 cohort	-	-.571	-	-.291	-	-.053	-	.002
		(.389)		(.369)		(.352)		(.465)
Any roommate with family income < $50,000 * 1997 cohort	-	.021	-	.022	-	.084	-	-.062
		(.193)		(.193)		(.173)		(.194)
Any roommate with family income > $200,000 * 1997 cohort	-	-.045	-	.057	-	.167	-	.312*
		(.168)		(.176)		(.176)		(.163)
R-squared	.370	.372	.371	.371	.356	.357	.455	.458
Number of observations	1,169	1,172	1,193	1,196	1,241	1,244	1,122	1,125

Notes:
Standard errors are given in parentheses. Standard errors are adjusted for room clustering using Huber-White robust estimations.
All regressions include controls for respondent's: father's education, mother's education, family income, high school grade point average, ACT/SAT score, CIRP-based attitudes about race discrimination, taxation of the rich and prohibition of racist/sexist speech; for roommates': average father's education, average mother's education, average high school grade point average, average ACT/SAT score.
All regressions also control for respondent's housing preferences, gender, cohort, test taken; values not shown.
"-" indicates that the variable was not included in the regression.

[a] Scale: 4) Disagree Strongly; 3) Disagree Somewhat; 2) Agree Somewhat; 1) Agree Strongly.
[b] Scale: 4) Agree Strongly; 3) Agree Somewhat; 2) Disagree Somewhat; 1) Disagree Strongly
All dependent variables are expressed in z-scores.
*p<=.10 ** p<=.05 ***p<=.01

Table 4: OLS Regression Coefficients and Standard Errors for Roommate Predictors of Behaviors of White Students 2-6 Years After Entering College

	I have personal contact with people from other racial/ethnic groups [a]	I interact comfortably with people from other racial/ethnic groups [a]	Fraction of friends from own racial/ethnic background	Socialized with someone with an African-American background [a]	Frequency of doing volunteer work [b]	What one can achieve in life depends mainly upon one's family background [c]
ROOMMATES' CHARACTERISTICS						
Any black roommate(s)	.354*	.361**	-.291	.188	.569	-.038
	(.208)	(.182)	(.271)	(.187)	(.422)	(.238)
Any other minority roommate(s)	.006	.027	-.067	-.101	-.024	-.216**
	(.095)	(.094)	(.094)	(.093)	(.098)	(.085)
Only white roommate(s) [omitted group]	-	-	-	-	-	-
At least one roommate with family income < $50,000	.086	.132	.155	.236**	.220*	.257**
	(.116)	(.114)	(.112)	(.110)	(.131)	(.111)
At least one roommate with family income between $50,000 and $74,999	.119	.034	-.142	.181*	.096	.059
	(.090)	(.094)	(.105)	(.099)	(.093)	(.096)
At least one roommate with family income between $75,000 and $149,999 [omitted group]	-	-	-	-	-	-
At least one roommate with family income between $150,000 and $199,999	.102	.112	-.059	.142	-.046	.188*
	(.110)	(.110)	(.116)	(.116)	(.105)	(.107)
At least one roommate with family income > $200,000	.071	.171*	-.043	.109	.004	.140
	(.104)	(.094)	(.112)	(.105)	(.100)	(.096)
TIME						
Years since sophomore year	-.089	-.087	.036	-.137	.015	-.229***
	(.098)	(.102)	(.090)	(.094)	(.102)	(.089)
R-squared	.189	.201	.171	.230	.175	.265
Number of observations	1,257	1,254	1,245	1,243	1,248	1,242

Notes:
Standard errors are given in parentheses. Standard errors are adjusted for room clustering using Huber-White robust estimations.
All regressions include controls for respondent's: father's education, mother's education, family income, high school grade point average, ACT/SAT score, CIRP-based attitudes about race discrimination, taxation of the rich and prohibition of racist/sexist speech;
for roommates': average father's education, average mother's education, average high school grade point average, average ACT/SAT score.
All regressions also control for respondent housing preferences, gender, cohort, test taken; values not shown.
"-" indicates that the variable was not included in the regression.
[a] Number of times per month
[b] Number of times per week
[c] Scale: 4) Agree Strongly; 3) Agree Somewhat; 2) Disagree Somewhat; 1) Disagree Strongly
All dependent variables are expressed in z-scores.
*p<=.10 ** p<=.05 ***p<=.01

Appendix Table 1: Means and Standard Deviations of Roommates Characteristics (Independent variables) and of White Upperclassmen Attitudes and Behaviors (Dependent Variables)

	White respondents to the follow-up survey (all randomly assigned roommates)	
	Mean	Std. Dev.
Roommates (all gathered in entering student survey)		
Any black roommate(s)	.027	(.163)
Any other minority roommate(s)	.161	(.368)
At least one roommate with family income < $50,000	.115	(.319)
At least one roommate with family income between $50,000 and $74,999	.174	(.379)
At least one roommate with family income between $75,000 and $149,999	.446	(.497)
At least one roommate with family income between $150,000 and $199,999	.115	(.319)
At least one roommate with family income > $200,000	.160	(.366)
Years since sophomore year	2.545	(1.720)
Any black roommate * 1997 cohort	.011	(.104)
Any roommate with family income < $50,000 * 1997 cohort	.063	(.242)
Any roommate with family income > $200,000 * 1997 cohort	.063	(.244)
Dependent variables (all gathered in follow-up survey)		
Attitudes		
Affirmative action in colllege admissions should be abolished (reverse coding) [a]	2.361	(1.074)
Affirmative action is justified if it ensures a diverse student body on college campuses [b]	2.441	(1.043)
Having a diverse student body is essential for high-quality education [b]	3.246	(.872)
Wealthy people should pay more taxes [b]	2.684	(1.039)
Behaviors		
I have personal contact with people from other racial/ethnic groups (number of times per month)	19.906	(8.336)
I interact comfortably with people from other racial/ethnic groups (number of times per month)	20.559	(7.883)
Fraction of friends from own racial/ethnic background	.737	(.166)
Socialized with someone with an African-American background (# of times per month)	10.422	(9.757)
Frequency of doing volunteer work (number of hours per week)	2.271	(3.934)
What one can achieve in life depends mainly upon one's family background [b]	1.984	(.873)
	n=1,278	

Notes:

[a] : scale: (4) Disagree Strongly; (3) Disagree Somewhat; (2) Agree Somewhat; (1) Agree Strongly

[b] : scale: (4) Agree Strongly; (3) Agree Somewhat; (2) Disagree Somewhat; (1) Disagree Strongly

Social Mobility & POUM: I

- Two numerical examples of stationary distributions:

$$\begin{pmatrix} .5 & .5 & 0 \\ .385 & .3 & .315 \\ 0 & .6 & .4 \end{pmatrix}, (.33,.44,.23) = (\pi_1, \pi_2, \pi_3)$$

$$(a_1, a_2, a_3) = (16000,36000,91000)$$

- Notice that
  - (1.) It is stationary (i.e. .315*.44 + .4*.23= .23, etc...)
  - (2.) A majority of the population (77%) has income below the mean and thus supports current redistribution
  - (3.) A majority of the population (67%) has expected income above the mean and thus does not support future redistribution

Social Mobility & POUM: II

- Second example of stationary distribution:

$$\begin{pmatrix} .7 & .3 & 0 \\ .315 & .3 & .385 \\ 0 & .6 & .4 \end{pmatrix}, (.39,.37,.24) = (\pi_1, \pi_2, \pi_3)$$

$$(a_1, a_2, a_3) = (20000,35000,90000)$$

- Notice that
  - (1.) A majority of the population (76%) has income below the mean and thus supports current redistribution
  - (2.) A smaller majority of the population (61%) has expected income above the mean and thus does not support future redistribution
  - (3.) Upward mobility is more likely for the middle class – thus once risk aversion is introduced, it is possible to get higher support for no redistribution with this distribution than the previous

Social Mobility & POUM: III

- Generalized model (a continuum of individuals are indexed over the closed unit interval by i):

$$X = \left[0, \bar{y}\right], 0 < \bar{y} < \infty$$

- Income is distributed by F:

$$F : X \to \left[0,1\right], F(0) = 0, F(\bar{y}) = 1$$

- Denote the the class of all such distributions by:

$$\Phi$$

- Those with positive skewness (median below the mean) are given by:

$$\Phi_{+}$$

- A redistribution scheme is denoted by: $r : XxF \to R_{+}$

Social Mobility & POUM: IV

- Income over T periods of life transitions according to the following equation:

$$y_{t+1}^{i} = f\left(y_{t}^{i}, \theta_{t+1}^{i}\right)$$

- The random variables follow the following requirements:

$$\theta_{t+1}^{i} \in [0,1] X \{1,...,T\} \text{ has a common probability distribution P with support } \Omega$$

- The transition function

$$f : XX\Omega \to X \text{ is continuous and } \mathrm{E}_{\Theta} f\left(.,\theta_{t+1}^{i}\right) \text{exists}$$

- Future income increases with current income: the conditional distribution given y(1)>y(2) is first order stochastically dominated by the conditional for y(2)

Social Mobility & POUM: V

- Note that f concave implies (via Jensen's inequality) that:

$$f(\mu_{F_{01}}) = f\left(\int_X f dF_0\right) > \int_X f dF_0 = \mu_{F_1}$$

- Proposition: f concave is equivalent to their being a cutoff such that all all those below the cutoff prefer full redistribution and all those above prefer none (given a condorcet choice)

- Main theorem:

$$\text{For any } F_0 \in \Phi, \exists f \in T \ni r_0 \text{ (no redistribution) beats } r_1(\text{full redistribution}) \text{ under majority pairwise voting for all transition functions that are more concave than f, and beats } r_0 \text{ for all transition functions less concave than f}$$

-

Social Mobility & POUM: VI

- Other results include:
  - (1.) the longer the time horizon, the more the bias towards no redistribution
  - (2.) adding uncertainty (and thus risk aversion) attenuates the effects but does not reverse them
  - (3.) the results are robust to inclusion of nonlinear taxation

Table 1: Basic regressions

Dependent variable	Responsibility for the financial security when unemployed (state=1)		Responsibility for the financial security when sick (state=1)		Responsibility for the financial security of the family (state=1)		Responsibility for the financial security when old (state=1)		Responsibility for the financial security when requiring care (state=1)	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
east	0.432***	0.030	0.434***	0.028	0.420***	0.028	0.426***	0.028	0.371***	0.028
year02	0.064***	0.023	0.165***	0.023	-0.012	0.024	-0.033	0.023	0.103***	0.023
east*year02	-0.123***	0.039	-0.161***	0.036	-0.060*	0.036	-0.143***	0.036	-0.176***	0.036
age	-0.026*	0.015	-0.005	0.015	-0.009	0.015	-0.019	0.014	-0.003	0.014
age squared	0.001**	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
age cubed	0.000**	0.000	0.000	0.000	0.000	0.000	-0.000	0.000	0.000	0.000
college	-0.203***	0.064	-0.258***	0.061	-0.141**	0.062	-0.277***	0.061	-0.122**	0.060
vocational training	-0.096*	0.057	-0.140***	0.054	-0.136**	0.055	-0.163***	0.054	-0.087	0.054
secondary schooling	-0.101*	0.059	-0.071	0.056	-0.023	0.057	-0.103*	0.056	-0.068	0.056
intermediate schooling	-0.103	0.069	-0.152**	0.066	-0.147**	0.068	-0.155**	0.065	-0.052	0.065
male	-0.083***	0.023	-0.072***	0.022	-0.003	0.022	-0.020	0.022	0.020	0.021
number of children	0.034**	0.014	0.034***	0.012	0.064***	0.012	0.038***	0.012	0.010	0.012
number of adults	0.022*	0.013	0.043***	0.012	0.022**	0.011	0.037***	0.011	0.007	0.012
married	0.069*	0.039	0.106***	0.037	0.026	0.037	0.045	0.036	0.109***	0.036
divorced	0.089*	0.052	0.048	0.051	0.042	0.050	0.047	0.050	0.107**	0.049
married but separated	0.011	0.087	-0.028	0.083	-0.042	0.083	0.082	0.084	0.161*	0.084
widowed	-0.050	0.060	0.027	0.058	-0.043	0.059	-0.038	0.057	0.075	0.057
log(household income)	-0.156***	0.027	-0.264***	0.025	-0.135***	0.025	-0.224***	0.025	-0.148***	0.025
civil servant	-0.122**	0.057	-0.222***	0.059	0.085	0.059	-0.060	0.059	-0.113**	0.055
self-employed	-0.317***	0.052	-0.403***	0.053	-0.332***	0.053	-0.450***	0.053	-0.306***	0.051
white-collar worker	-0.030	0.033	-0.044	0.032	0.011	0.032	-0.089***	0.031	-0.101***	0.031
unemployed	0.161***	0.051	0.005	0.047	0.142***	0.047	0.005	0.046	-0.034	0.046
retired	-0.075	0.059	-0.090	0.057	0.149***	0.058	0.019	0.056	0.011	0.056
maternity	0.015	0.080	-0.051	0.077	0.119	0.075	-0.197***	0.077	-0.081	0.075
nonworking	-0.027	0.043	-0.022	0.042	0.158***	0.042	-0.012	0.041	0.021	0.041
training	-0.049	0.066	-0.021	0.063	-0.115*	0.065	-0.086	0.063	-0.021	0.063
other nonworking	-0.000	0.052	-0.093*	0.049	0.062	0.049	-0.046	0.049	-0.097**	0.049
constant	1.994***	0.303	1.852***	0.293	0.728**	0.293	1.859***	0.291	1.178***	0.287
obs	18,489		18,487		18,485		18,516		18,514	
log likelihood	-11,060		-12,192		-11,954		-12,250		-12,568	

Note: Probit regressions. Omitted categories are less than 9 years of schooling, female, single, blue-collar worker, and employed.

Table 2: Regressions with east*age interaction

Dependent variable	Responsibility for the financial security when unemployed (state=1)		Responsibility for the financial security when sick (state=1)		Responsibility for the financial security of the family (state=1)		Responsibility for the financial security when old (state=1)		Responsibility for the financial security when requiring care (state=1)	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
east	0.029	0.064	-0.034	0.060	-0.032	0.060	-0.226***	0.060	0.002	0.059
year02	0.070***	0.023	0.172***	0.023	-0.006	0.024	-0.024	0.023	0.108***	0.023
east*year02	-0.139***	0.039	-0.176***	0.036	-0.074**	0.037	-0.168***	0.036	-0.189***	0.036
age	-0.000	0.001	-0.002	0.001	-0.003**	0.001	-0.003***	0.001	-0.005***	0.001
east*age	0.009***	0.001	0.011***	0.001	0.010***	0.001	0.015***	0.001	0.008***	0.001
obs	18,489		18,487		18,485		18,516		18,514	
log likelihood	-11,034		-12,148		-11,914		-12,165		-12,541	

Note: Probit regressions. Included as controls are number of children and number of adults in household, logarithm of household income, and dummies for education, sex, marital status, employment status, and occupation.

Table 3: Regressions with cohorts interacted with east

Dependent variable	Responsibility for the financial security when unemployed (state=1)		Responsibility for the financial security when sick (state=1)		Responsibility for the financial security of the family (state=1)		Responsibility for the financial security when old (state=1)		Responsibility for the financial security when requiring care (state=1)	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
east	0.318***	0.068	0.246***	0.063	0.147**	0.064	0.081	0.064	0.205***	0.064
year02	0.066**	0.026	0.162***	0.026	-0.045*	0.027	-0.066**	0.026	0.105***	0.025
east*year02	-0.111***	0.039	-0.137***	0.037	-0.033	0.037	-0.107***	0.036	-0.156***	0.036
born 1961-1975	0.014	0.074	0.018	0.070	-0.204***	0.072	-0.215***	0.072	-0.027	0.070
born 1946-1960	-0.092	0.100	-0.061	0.095	-0.431***	0.097	-0.391***	0.096	-0.086	0.094
born 1931-1945	-0.064	0.127	-0.105	0.122	-0.488***	0.124	-0.517***	0.123	-0.092	0.120
born before 1931	-0.008	0.155	-0.104	0.149	-0.420***	0.151	-0.467***	0.151	-0.006	0.146
born 1961-1975*east	-0.106	0.075	-0.007	0.071	0.120*	0.071	0.128*	0.072	0.012	0.071
born 1946-1960*east	0.169**	0.077	0.180**	0.072	0.286***	0.073	0.314***	0.073	0.152**	0.073
born 1931-1945*east	0.356***	0.081	0.392***	0.075	0.501***	0.076	0.643***	0.076	0.365***	0.076
born before 1931*east	0.303***	0.099	0.458***	0.091	0.454***	0.090	0.754***	0.091	0.391***	0.090
obs	18,489		18,487		18,485		18,516		18,514	
log likelihood	-11,021		-12,152		-11,905		-12,162		-12,534	

Note: Probit regressions. Included as controls are cubic function in age, number of children and number of adults in household, logarithm of household income, and dummies for education, sex, marital status, employment status, and occupation.

Table 4: Regressions with individuals who answer in 1997 and 2002

Dependent variable	Responsibility for the financial security when unemployed (state=1)		Responsibility for the financial security when sick (state=1)		Responsibility for the financial security of the family (state=1)		Responsibility for the financial security when old (state=1)		Responsibility for the financial security when requiring care (state=1)	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
east	0.446***	0.035	0.394***	0.033	0.407***	0.033	0.391***	0.033	0.333***	0.033
year02	0.052**	0.026	0.164***	0.026	-0.032	0.027	-0.048*	0.026	0.095***	0.025
east*year02	-0.124***	0.043	-0.109***	0.040	-0.022	0.040	-0.067*	0.039	-0.130***	0.040
obs	14,110		14,110		14,110		14,110		14,110	
log likelihood	-8,414		-9,321		-9,131		-9,323		-9,576	

Note: Probit regressions. Included as controls are cubic function in age, number of children and number of adults in household, logarithm of household income, and dummies for education, sex, marital status, employment status, and occupation.

Table 5: Regressions with probability of receiving a transfer

Dependent variable	Responsibility for the financial security when unemployed (state=1)		Responsibility for the financial security when sick (state=1)		Responsibility for the financial security of the family (state=1)		Responsibility for the financial security when old (state=1)		Responsibility for the financial security when requiring care (state=1)	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
east	0.453***	0.031	0.487***	0.029	0.398***	0.029	0.462***	0.029	0.394***	0.029
year02	0.052**	0.023	0.141***	0.023	-0.028	0.024	-0.061***	0.023	0.087***	0.023
east*year02	-0.133***	0.039	-0.174***	0.036	-0.074**	0.036	-0.148***	0.036	-0.182***	0.036
probability of receiving transfer	0.240***	0.054	0.176***	0.052	0.345***	0.050	0.175***	0.051	0.160***	0.050
obs	18,139		18,138		18,138		18,165		18,164	
log likelihood	-18,902		-20,079		-19,872		-20,129		-20,401	

Note: The table shows the second stage results of bivariate probit regressions. Included as controls in the second stage regressions are cubic function in age, number of children and number of adults in household, and dummies for education, sex, and marital status. Additionally included in the (not reported) first stage regressions predicting the probability of receiving a transfer are dummies for employment status and occupation, as well as wage income, income from self-employment, income from additional employment, and payments from persons not living in household. Income variables are in logs.

Table 6: Regressions with aggregate transfers

Dependent variable	Responsibility for the financial security when unemployed (state=1)		Responsibility for the financial security when sick (state=1)		Responsibility for the financial security of the family (state=1)		Responsibility for the financial security when old (state=1)		Responsibility for the financial security when requiring care (state=1)	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
east	0.269***	0.044	0.334***	0.042	0.349***	0.042	0.345***	0.042	0.271***	0.042
year02	0.039*	0.024	0.150***	0.024	-0.023	0.024	-0.045*	0.024	0.088***	0.023
east*year02	-0.144***	0.039	-0.173***	0.036	-0.069*	0.036	-0.154***	0.036	-0.188***	0.036
gross transfers ($*10^3$)	0.029***	0.006	0.017***	0.005	0.012**	0.005	0.014***	0.005	0.017***	0.005
obs	18,488		18,486		18,484		18,515		18,513	
log likelihood	-11,045		-12,185		-11,950		-12,244		-12,561	

Note: Probit regressions. Included as controls are cubic function in age, number of children and number of adults in household, logarithm of household income, and dummies for education, sex, marital status, employment status, and occupation.

Table 7: Regressions with residence

Dependent variable	Responsibility for the financial security when unemployed (state=1)		Responsibility for the financial security when sick (state=1)		Responsibility for the financial security of the family (state=1)		Responsibility for the financial security when old (state=1)		Responsibility for the financial security when requiring care (state=1)	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
east	0.076	0.090	0.204**	0.089	0.221**	0.089	0.202**	0.088	0.130	0.088
east living in East	0.383***	0.092	0.246***	0.090	0.212**	0.090	0.239***	0.089	0.258***	0.089
year02	0.064***	0.023	0.165***	0.023	-0.013	0.024	-0.033	0.023	0.103***	0.023
east*year02	0.160	0.117	-0.070	0.111	0.100	0.114	0.007	0.107	-0.085	0.113
(east living in East)*year02	-0.302**	0.119	-0.092	0.113	-0.169	0.114	-0.157	0.108	-0.092	0.114
obs	18,489		18,487		18,485		18,516		18,514	
log likelihood	-11,052		-12,187		-11,951		-12,246		-12,562	

Note: Probit regressions. Included as controls are cubic function in age, number of children and number of adults in household, logarithm of household income, and dummies for education, sex, marital status, employment status, and occupation.

Table 8: Regressions with east states interacted with year02

Dependent variable	Responsibility for the financial security when unemployed (state=1)		Responsibility for the financial security when sick (state=1)		Responsibility for the financial security of the family (state=1)		Responsibility for the financial security when old (state=1)		Responsibility for the financial security when requiring care (state=1)	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
East Berlin	0.442***	0.091	0.537***	0.083	0.477***	0.082	0.375***	0.082	0.449***	0.083
Mecklenburg-Vorpommern	0.265***	0.068	0.290***	0.064	0.253***	0.064	0.300***	0.063	0.390***	0.064
Brandenburg	0.399***	0.062	0.341***	0.057	0.416***	0.057	0.457***	0.057	0.371***	0.057
Sachsen-Anhalt	0.503***	0.059	0.519***	0.052	0.452***	0.052	0.520***	0.052	0.446***	0.052
Thüringen	0.553***	0.060	0.407***	0.053	0.405***	0.052	0.416***	0.052	0.311***	0.052
Sachsen	0.416***	0.047	0.475***	0.043	0.465***	0.042	0.428***	0.042	0.347***	0.042
year02	0.067***	0.023	0.162***	0.023	-0.015	0.024	-0.037	0.023	0.097***	0.023
East Berlin * year02	-0.048	0.127	-0.376***	0.107	0.020	0.109	-0.026	0.109	-0.137	0.110
Mecklenburg-Vorpommern * year02	0.086	0.099	-0.005	0.092	0.066	0.089	0.010	0.088	-0.178**	0.090
Brandenburg * year02	-0.023	0.085	-0.029	0.075	0.025	0.072	-0.134*	0.075	-0.229***	0.075
Sachsen-Anhalt * year02	-0.130*	0.079	-0.226***	0.069	-0.110	0.071	-0.213***	0.068	-0.220***	0.070
Thüringen * year02	-0.457***	0.075	-0.138**	0.070	-0.096	0.068	-0.123*	0.070	-0.010	0.067
Sachsen * year02	-0.063	0.061	-0.200***	0.056	-0.106*	0.055	-0.185***	0.054	-0.207***	0.056
obs	18,286		18,283		18,283		18,312		18,311	
log likelihood	-10,919		-12,042		-11,812		-12,098		-12,414	

Note: Probit regressions. Included as controls are cubic function in age, number of children and number of adults in household, logarithm of household income, and dummies for education, sex, marital status, employment status, and occupation.

Table 9: Regressions with social conditions as the dependent variable

Dependent variable: Social conditions define possibilities (agree=1)	BASIC REGRESSION		REGRESSION INCLUDING AGE*EAST INTERACTION	
	Coeff.	Std. Err.	Coeff.	Std. Err.
east	0.292***	0.032	-0.186**	0.085
age*east			0.011***	0.002
age	0.008	0.022	0.002	0.002
age squared	-0.000	0.000		
age cubed	-0.000	0.000		
college	-0.097	0.097	-0.116	0.093
vocational training	-0.073	0.089	-0.077	0.085
secondary schooling	-0.030	0.091	-0.024	0.089
intermediate schooling	-0.033	0.104	-0.038	0.103
male	-0.145***	0.031	-0.145***	0.031
number of children	0.018	0.017	0.022	0.017
number of adults	0.047***	0.015	0.048***	0.015
married	-0.035	0.051	-0.039	0.047
divorced	0.037	0.072	0.036	0.069
married but separated	0.009	0.125	0.014	0.124
widowed	0.127	0.084	0.128	0.083
log(household income)	-0.140***	0.037	-0.135***	0.037
civil servant	-0.181**	0.076	-0.178**	0.076
self-employed	-0.266***	0.070	-0.267***	0.069
white-collar worker	-0.027	0.044	-0.032	0.044
unemployed	0.159**	0.068	0.152**	0.068
retired	-0.121	0.086	-0.126*	0.073
maternity	0.028	0.112	0.018	0.112
nonworking	0.064	0.059	0.051	0.059
training	0.049	0.095	0.049	0.093
other nonworking	-0.161**	0.071	-0.169**	0.070
constant	1.201***	0.439	1.390***	0.322
obs	8,580		8,580	
log likelihood	-5,412		-5,394	

Note: Probit regressions. Omitted categories are less than 9 years of schooling, female, single, blue-collar worker, and employed.

Table 10: Regressions with social conditions as a control variable

Dependent variable	Responsibility for the financial security when unemployed (state=1)		Responsibility for the financial security when sick (state=1)		Responsibility for the financial security of the family (state=1)		Responsibility for the financial security when old (state=1)		Responsibility for the financial security when requiring care (state=1)	
	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.	Coeff.	Std. Err.
east	0.421***	0.032	0.423***	0.030	0.412***	0.030	0.406***	0.030	0.334***	0.030
year02	0.050**	0.025	0.154***	0.024	-0.026	0.026	-0.041**	0.025	0.093***	0.024
east*year02	-0.131***	0.041	-0.145***	0.038	-0.051	0.038	-0.108***	0.038	-0.136***	0.038
social conditions	0.075***	0.024	0.087***	0.023	0.089***	0.023	0.087***	0.023	0.073***	0.023
obs	16,197		16,202		16,199		16,224		16,222	
log likelihood	-9,659		-10,682		-10,484		-10,727		-11,010	

Note: Probit regressions. Included as controls are cubic function in age, number of children and number of adults in household, logarithm of household income, and dummies for education, sex, marital status, employment status, and occupation.

Why Women Became More Left Wing: I

- Women's voting patterns have changed over time – trending more towards the democrats. Why?

- Theory: Women should have become more right wing as incomes of women caught up with those of men.
  - However, higher incomes of women may have lead to more divorce and more women with ex-post lower effective incomes than before the gender wage gap narrowed.

- Alternative theory: women have become more left wing (and men more right wing) as the Republican party has focussed more on an anti-abortion and anti-preventative sex stance.

- Alternative theory: women's entry into the labor force has made them more aware of discrimination in the labor force (either directly due to gender or due to things correlated with gender such as hours of work and child care provision)

Why Women Became More Left Wing: II

- So main 3 theories to distinguish:
  - Changes in Positions on Women's Issues
  - Changes in Labor Force Participation
  - Changes in Income through changes in Divorce

- Regressions

$$d_{ikt} = c_k + \tau_t + \phi_1 f_{ikt} + \phi_2 \left(f_{ikt} X \tau_t \right) + \varepsilon_{ikt}$$

$$d_{ikt} = \text{democrat dummy},\ f_{ikt} = \text{female dummy}$$

$$c_k = \text{state dummies},\ \tau_t = \text{year dummies},$$

-

Why Women Became More Left Wing: III

- Regressions (cont.)

$$d_{ikt} = c_k + \tau_t + \phi_1 f_{ikt} + \phi_2 \left(f_{ikt} \tau_t \right) + \phi_3 X_{ikt} + \phi_4 f_{ikt} c_k + \phi_5 v_{kt} + \phi_6 f_{ikt} v_{kt} + \varepsilon_{ikt}$$

$$X_{ikt} = \text{demographics}, v_{kt} = \text{divorce risk (pdivorced)}$$

- Longitudinal Evidence

$$d_{it} = \tau_t + \chi_i + \phi_1 m_{it} + \phi_2 \delta_{it} + \phi_3 \theta_{it} + \phi_4 f_i m_{it} + \phi_5 f_i \delta_{it} + \phi_6 f_i \theta_{it} + \varepsilon_{it}$$

$$m_{it} = \text{marriage dummy}, \delta_{it} = \text{divorce dummy}, \chi_i = \text{individual fixed effect}$$

$$\theta_{it} = \text{vector of time - varying individual characteristics}$$

Why Women Became More Left Wing: IV

- Data:
  - NES (National Election Survey) questions on issues, identification with party, and demographics
  - CPS (Current Population Survey) questions on divorce rates, labor force participation of women by state and year
  - YPSS (Youth Parent Socialization Survey): 1965, 1973, and 1982 questions on demographics and political preferences
- Econometric Issue:
  - (1.) Correlation in pdivorce and plabor
  - (2.) Correlated error terms from aggregate variables used in individual regression
  - Solution: Cluster on State.

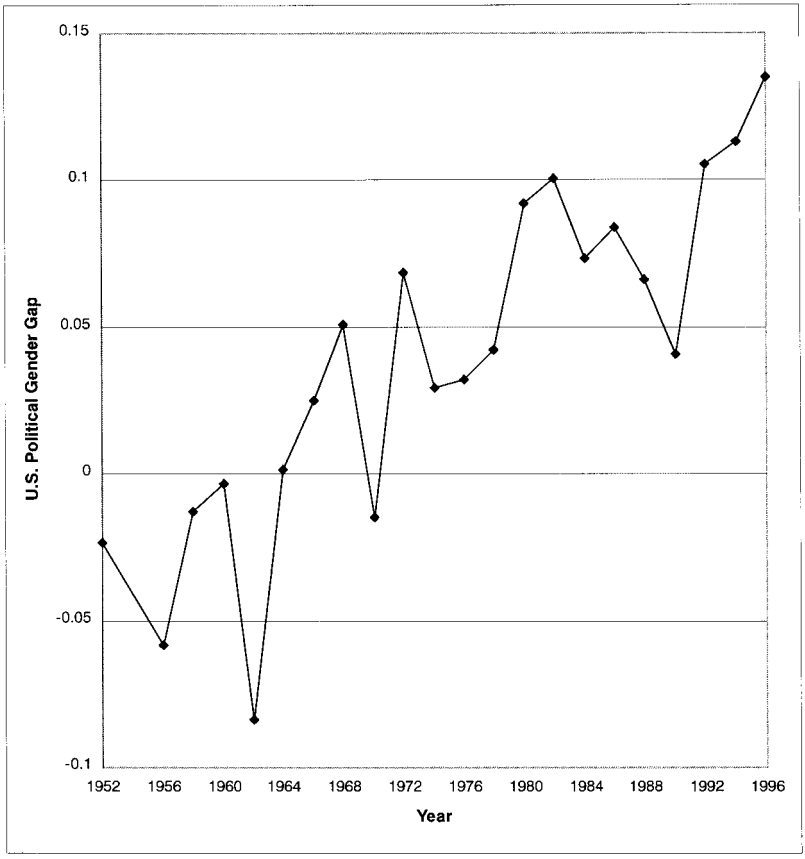

FIGURE I
U. S. Political Gender Gap

Notes. The U. S. Political Gender Gap is defined as the difference between the proportion of female and male respondents who are Democrat. The gap is constructed using respondent-level information from the National Election Studies data 1952–1996, where the sample is restricted to respondents aged 18–64 years. A respondent is defined as a Democrat if he/she states self to be a Strong-, Weak-, or Independent-leaning Democrat. Appendix 1 provides a full description of the National Election Studies sample.

twenty years the gap between men's and women's political preferences has reversed direction, and it has become significant to the extent that in the last two elections men and women would have chosen different presidents.

Figure I illustrates the evolution of this political gender gap in the United States between 1952 and 1996. The period saw the

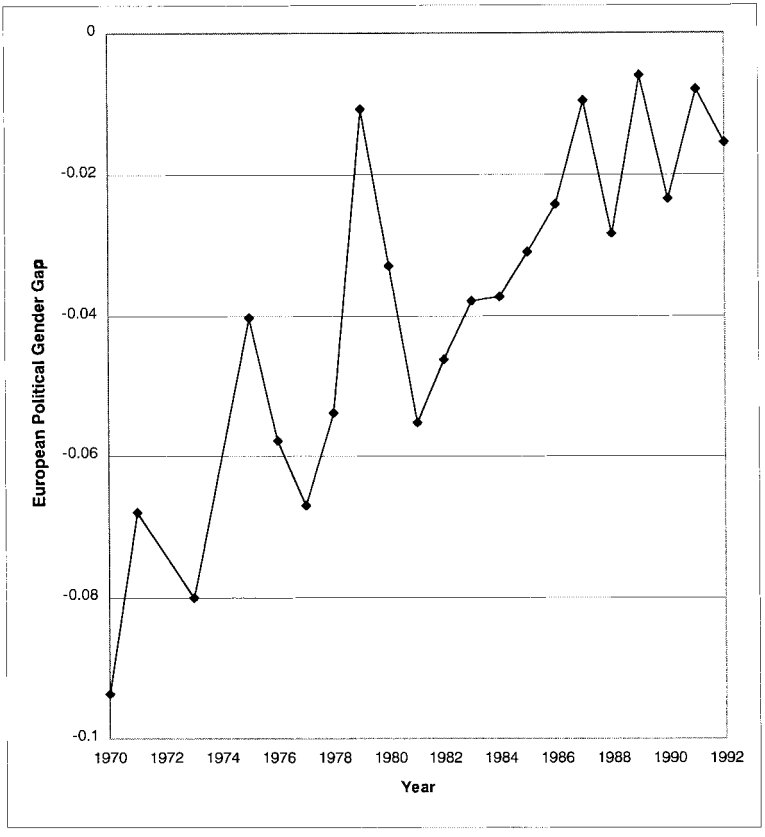

FIGURE II
European Political Gender Gap

Notes. The European Political Gender Gap is the population weighted average Gender Gap for ten European countries. For each country the European Political Gender Gap is defined as the difference between the proportion of female and male respondents who favor the Left. For each country the gap is constructed using respondent level information from the annual Eurobarometer Surveys, where we include information on all respondents aged fifteen and over. A respondent favors the Left if his/her stated party preference is for a Left-wing party in the country. The Eurobarometer Survey provides complete identification of all parties in a country as Left/non-Left. The countries are Germany, Italy, France, the Netherlands (1970–1992), Denmark, Ireland, Luxemborg (1973–1992), United Kingdom (1970, 1973–1992), and Greece (1980–1992).

gap between the proportion of women and men who identify themselves as Democrats increase from −2 to 12 percent. A nearly identical trend is evident in Europe (Figure II).

The United States also witnessed a fall of over a quarter in

TABLE III
INDIVIDUAL DETERMINANTS OF DEMOCRATIC PARTY IDENTIFICATION
DEPENDENT VARIABLE: **IDEMOCRAT**

	(1)	(2)	(3)	(4)	(5)
female	−0.005	−0.017	−0.024	−0.034	−0.084***
	(0.021)	(0.020)	(0.021)	(0.021)	(0.033)
female × 1968	0.058	0.044	0.043	0.042	0.036
	(0.036)	(0.032)	(0.036)	(0.035)	(0.036)
female × 1972	0.075***	0.072***	0.073***	0.075***	0.058***
	(0.020)	(0.018)	(0.020)	(0.020)	(0.022)
female × 1976	0.039	0.046*	0.054**	0.054**	0.011
	(0.029)	(0.026)	(0.026)	(0.027)	(0.033)
female × 1980	0.100***	0.107***	0.105***	0.107***	0.038
	(0.034)	(0.031)	(0.034)	(0.034)	(0.052)
female × 1984	0.080***	0.079***	0.079**	0.080***	−0.007
	(0.030)	(0.029)	(0.031)	(0.030)	(0.052)
female × 1988	0.070**	0.077***	0.087***	0.088***	−0.009
	(0.029)	(0.028)	(0.025)	(0.024)	(0.050)
female × 1992	0.107***	0.115***	0.115***	0.117***	−0.000
	(0.029)	(0.028)	(0.029)	(0.028)	(0.073)
female × 1996	0.139***	0.150***	0.148***	0.151***	0.022
	(0.032)	(0.035)	(0.033)	(0.031)	(0.074)
Married	—	−0.051***	−0.066***	−0.067***	−0.067***
		(0.008)	(0.023)	(0.024)	(0.024)
Black	—	0.357***	0.338***	0.340***	0.339***
		(0.028)	(0.028)	(0.028)	(0.028)
age	—	0.006***	0.009***	0.009***	0.009***
		(0.002)	(0.002)	(0.002)	(0.002)
age^2 ($\times 10^{-3}$)	—	−0.051**	−0.082***	−0.082***	−0.082***
		(0.024)	(0.023)	(0.023)	(0.023)
cohort:					
1911–1942	—	0.039*	0.038*	0.038*	0.038*
		(0.023)	(0.022)	(0.022)	(0.022)
1942–1952	—	0.052*	0.049*	0.050*	0.050*
		(0.027)	(0.027)	(0.027)	(0.027)
1959–	—	0.024	0.016	0.017	0.017
		(0.030)	(0.031)	(0.031)	(0.031)
religion:					
Catholic	—	0.077***	0.075***	0.075***	0.076***
		(0.015)	(0.016)	(0.016)	(0.016)
Protestant	—	−0.098***	−0.099***	−0.099***	−0.099***
		(0.015)	(0.016)	(0.017)	(0.017)
Jewish	—	0.238***	0.291***	0.291***	0.293***
		(0.039)	(0.037)	(0.038)	(0.038)
education:					
<9 years	—	—	0.067***	0.066***	0.066***
			(0.021)	(0.021)	(0.021)
9–12 years	—	—	0.049***	0.049***	0.050***
			(0.013)	(0.013)	(0.013)
some college	—	—	0.010	0.009	0.010
			(0.011)	(0.011)	(0.011)

TABLE III
(CONTINUED)

		(1)	(2)	(3)	(4)	(5)
family income percentile:						
	0–33	—	—	0.140***	0.140***	0.142***
				(0.028)	(0.028)	(0.027)
	34–95	—	—	0.153***	0.152***	0.153***
				(0.028)	(0.028)	(0.028)
	married × 0–33	—	—	0.051**	0.052**	0.051**
				(0.026)	(0.026)	(0.026)
	married × 34–95	—	—	0.006	0.007	0.007
				(0.024)	(0.024)	(0.024)
nonmarriage:						
	pdivorced	—	—	—	—	−2.116**
						(0.937)
	female × **pdivorced**	—	—	—	—	1.802**
						(0.921)
Constant		0.831***	0.250***	0.059	0.022	0.150*
		(0.008)	(0.052)	(0.056)	(0.055)	(0.091)
other dummies:						
	year	yes	yes	yes	yes	yes
	CPS-state	yes	yes	yes	yes	yes
	female × CPS-state	no	no	no	yes	yes
Adj. R^2		0.020	0.091	0.097	0.098	0.098
N		26,215	25,848	24,140	24,140	24,140

OLS regression results, with robust standard errors adjusted for CPS-state-clustering, are reported in parentheses. The excluded categories are female × year—1964; education—college educated; cohort group—pre-1911 cohort; income—96–100 percentile. Coefficients for female × year interactions are only reported for the years of presidential elections, however, all regressions include the full set of interaction terms. *indicates significance at 10 percent, ** at 5 percent, and *** at 1 percent.

avoid clutter, Table III reports the coefficients only for Presidential election years. Relative to 1964 (the omitted year), apart from 1972, no significant gender gap exists until 1980. However, with the exception of 1990, all years since 1980 show a significant Democratic gender gap. Comparing point estimates, the gender gap rose sharply in the early 1980s, then stabilized and fell, before rising again in the 1990s. To use popular parlance, the first phase corresponded to the Reagan Democrat years and the last to the Soccer Mom years.

To investigate the relative roles of individual characteristics and divorce risk in explaining this trend, we reestimate the above regression and sequentially include these two sets of covariates. Our final regression is of the form,

TABLE IV
NONMARRIAGE AND DEMOCRATIC PARTY IDENTIFICATION
DEPENDENT VARIABLE: **IDEMOCRAT**

	Family income percentile							
	All incomes		0–33		34–95		96–100	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
female	−0.084***	−0.080*	0.049	0.116**	−0.149**	−0.195**	0.179	0.002
	(0.033)	(0.048)	(0.045)	(0.041)	(0.067)	(0.084)	(0.213)	(0.273)
pdivorced	−2.116**	−1.816*	0.165	0.581	−2.680***	−2.681***	−2.137	−2.877
	(0.937)	(0.999)	(1.514)	(1.586)	(0.986)	(0.993)	(2.823)	(3.061)
female ×	1.802**	1.837*	0.516	−1.253	2.656***	3.611***	0.349	1.904
pdivorced	(0.921)	(1.036)	(1.715)	(1.741)	(0.921)	(1.120)	(3.672)	(4.355)
female ×	—	0.002	—	−0.139**	—	0.047	—	0.212
married		(0.043)		(0.054)		(0.061)		(0.234)
pdivorced ×	—	0.470	—	−1.301	—	0.001	—	1.019
married		(0.485)		(0.809)		(0.577)		(1.702)
female ×	—	0.066	—	2.190	—	−1.175	—	−2.065
pdivorced		(0.557)		(0.780)		(0.778)		(3.224)
× married								
Adj. R^2	0.097	0.097	0.080	0.081	0.095	0.096	0.139	0.138
N	24,140	24,140	6,343	6,343	16,388	16,388	1,409	1,409

OLS regression results, with robust standard errors adjusted for CPS-state clustering, are reported in parentheses. Controls are included for year dummies, CPS-state dummies, female × CPS-state interactions, and all the other covariates in column (5) of Table III except that the income covariates are not included in specifications that divide the sample by income groups. *indicates significance at 10 percent, ** at 5 percent, and *** at 1 percent.

Table IV investigates how the impact of **pdivorced** on political preferences varies with income group and marital status. The endogenous nature of individual income and marital status raises the concern that selectivity bias may underlie apparent income group or marital status effects. We, therefore, first report results for the entire sample, and for each income group provide two specifications: one that does not distinguish between individuals by marital status, and one that does. All regressions include the individual controls in column (5) of Table III, except the income covariates in specifications that divide the sample by income groups (columns (3)–(8)).

Columns (1) and (2) of Table IV report results for the entire sample. Comparing across the two, we find that **pdivorced** does not affect the political preferences of married and unmarried respondents differentially. As this is the case for all specifications we consider, in subsequent tables we do not report specifications

TABLE V
NONMARRIAGE AND PREFERENCE FOR REDISTRIBUTION
DEPENDENT VARIABLE: **GOVSPEND**

	Family income percentile			
	All incomes (1)	0–33 (2)	34–95 (3)	96–100 (4)
female	−0.280**	0.132	−0.055	−0.763
	(0.123)	(0.176)	(0.142)	(0.512)
pdivorced	−1.917**	−2.049	−1.923*	−0.222
	(0.912)	(3.084)	(1.115)	(5.439)
female × **pdivorced**	4.714***	3.701	5.059***	3.385
	(1.469)	(3.252)	(1.860)	(5.805)
Adj. R^2	0.089	0.038	0.084	0.101
N	9,969	2,505	6,880	584

OLS regression results, with robust standard errors adjusted for CPS-state clustering, are reported in parentheses. Controls are included for year dummies, CPS-state dummies, female × CPS-state interactions, and all the other covariates in column (5) of Table III except that the income covariates are not included in specifications that divide the sample by income groups. * indicates significance at 10 percent, ** at 5 percent, and *** at 1 percent.

that control for marital status. Columns (3)–(8) report results by income group. An increase in **pdivorced** is associated with a statistically significant Democratic gender gap only for the middle-income group (percentiles 34–95). Moreover, the magnitude of the effect is largest for this group. Among the middle-income group, increased divorce risk turns men away from the left. A one percentage point increase in divorce risk lowers the likelihood that a male respondent is an **idemocrat** by 2.7 percentage points, but leaves that of women unchanged (column (5)). Within this group we find that, relative to nonmarried women, married women are significantly less likely to be **idemocrat.** However, the impact of divorce risk on women's political preferences does not differ by marital status.

III.C. Robustness

How well does an individual's party affiliation, as captured by **idemocrat,** correlate with his/her redistributive preferences? To examine this, Table V reports results for regressions that use a measure of individual redistributive preferences, **govspend,** as the dependent variable. Column (1) reports results for the entire sample. Increases in **pdivorced** have a significant and differential effect on male and female redistributive preferences. Col-

TABLE VI
DIVORCE LAW LIBERALIZATION
DEPENDENT VARIABLE: **IDEMOCRAT**

	Family income percentile			
	All incomes (1)	0–33 (2)	34–95 (3)	96–100 (4)
female	0.718***	−0.068	0.207***	0.02
	(0.026)	(0.056)	(0.040)	(0.135)
unilat	−0.065***	−0.051	−0.064**	−0.085
	(0.022)	(0.044)	(0.023)	(0.067)
female × **unilat**	0.069***	0.091**	0.067**	0.087
	(0.025)	(0.042)	(0.033)	(0.081)
Adj. R^2	0.102	0.089	0.100	0.170
N	24,140	6,343	16,388	1,409

OLS regression results, with robust standard errors adjusted for clustering at the state level, are reported in parentheses. Controls are included for year dummies, state dummies, female × state interactions, and all the other covariates in column (5) of Table III except that the income covariates are not included in specifications that divide the sample by income groups. *indicates significance at 10 percent, ** at 5 percent, and *** at 1 percent. There were no respondents from the following states: Alaska, Hawaii, Idaho, Montana, North Dakota, Rhode Island, and Vermont.

umns (2)–(4) estimate this regression by income group. As with party affiliation, the differential effect of divorce risk on male and female political preferences is limited to the middle-income group.

The results in Tables IV and V paint a consistent picture of how increased divorce risk affects the political preferences of the middle-income group. However, there are differences in how divorce risk affects men's and women's party affiliations and redistributive preferences. First, at 32 percentage points, the redistributive preference gender gap is more than double the Democratic gender gap. Second, increased divorce risk alters men's party affiliation but women's desire for redistribution. Taken together, these findings are suggestive of a shift in party platforms.

The other measure of divorce risk we explore is the passage of unilateral divorce laws, **unilat.** Table VI presents the results for this measure. Column (1) tells us that the liberalization of divorce laws was associated with the emergence of a political gender gap. Moreover, this effect varied by income group. The passage of unilateral divorce laws left the political preferences of the rich unaffected (column (4)), but had a gender differential

TABLE VII
LABOR FORCE PARTICIPATION AND DEMOCRATIC PARTY IDENTIFICATION
DEPENDENT VARIABLE: **IDEMOCRAT**

	Family income percentile					
	0–33		34–95		96–100	
	(1)	(2)	(3)	(4)	(5)	(6)
female	−0.089	−0.311	−0.086	−0.119	0.150	1.460**
	(0.107)	(0.333)	(0.083)	(0.133)	(0.191)	(0.715)
pdivorced	0.287	0.781	−2.609**	−2.668***	−2.193	−5.496**
	(1.483)	(1.439)	(1.048)	(1.006)	(2.886)	(2.565)
female ×	−0.507	−0.720	2.410**	2.312**	2.058	5.647**
pdivorced	(1.776)	(1.754)	(0.986)	(1.075)	(3.788)	(3.004)
labor	−0.001	−0.000	−0.050	−0.049	−0.048	−0.058
	(0.035)	(0.035)	(0.052)	(0.052)	(0.144)	(0.139)
female ×	0.000	−0.000	0.111**	0.110**	0.096	0.105
labor	(0.035)	(0.035)	(0.053)	(0.053)	(0.163)	(0.159)
plabor	—	−0.737	—	0.054	—	2.986**
		(0.677)		(0.294)		(0.957)
female ×	—	0.341	—	0.089	—	−3.206**
plabor		(0.526)		(0.346)		(1.642)
Adj. R^2	0.081	0.081	0.097	0.097	0.141	0.146
N	6,124	6,124	15,643	15,643	1,339	1,339

OLS regression results, with robust standard errors adjusted for CPS-state clustering, are reported in parentheses. Controls are included for year dummies, CPS-state dummies, female × CPS-state interactions, and all the other covariates in column (5) of Table III except that the income covariates are not included in specifications that divide the sample by income groups. * indicates significance at 10 percent, ** at 5 percent, and *** at 1 percent.

We test this hypothesis in two ways. First, we examine whether being in the labor force affects male and female political preferences differentially (Table VII). The relationship between **pdivorced** and the political gender gap is robust to including this information. Relative to a man, labor force participation only affects the political preferences of middle-income women. Being in the labor force makes a middle-income woman (relative to a man) 11 percentage points more likely to be an **idemocrat** (column (3)). The response to own labor force participation among middle-income women is consistent with an interpretation of women's working (for this group) being associated with a more precarious economic situation.

Second, we examine whether changes in the proportion of women in the labor force in a CPS-state (denoted as **plabor**)

TABLE X
MARITAL STATUS AND DEMOCRATIC PARTY IDENTIFICATION

	Dependent variable:					
	democrat			**idemocrat**		
	(1)	(2)	(3)	(4)	(5)	(6)
married	−0.034	0.036	0.023	−0.031	0.029	0.077
	(0.031)	(0.039)	(0.050)	(0.029)	(0.037)	(0.050)
female × married	−0.005	−0.095*	−0.082	−0.033	−0.107**	−0.130*
	(0.031)	(0.050)	(0.073)	(0.029)	(0.047)	(0.074)
divorced	−0.270***	−0.276***	−0.274***	−0.108	−0.071	−0.106
	(0.077)	(0.079)	(0.087)	(0.073)	(0.075)	(0.081)
female × divorced	0.377***	0.290***	0.294**	0.218**	0.160*	0.228*
	(0.093)	(0.100)	(0.110)	(0.088)	(0.095)	(0.103)
child	—	−0.105***	−0.080*	—	−0.090**	−0.111***
		(0.037)	(0.044)		(0.035)	(0.044)
female × child	—	0.096*	0.068	—	0.083*	0.111*
		(0.049)	(0.058)		(0.046)	(0.059)
church	—	0.018	−0.033	—	−0.004	0.006
		(0.029)	(0.050)		(0.028)	(0.050)
female × church	—	−0.051	0.097	—	−0.035	−0.014
		(0.040)	(0.067)		(0.038)	(0.068)
union	—	—	0.086*	—	—	0.127***
			(0.040)			(0.049)
female × union	—	—	0.010	—	—	−0.016
			(0.088)			(0.089)
equal roles	—	—	0.020	—	—	−0.003
			(0.039)			(0.040)
female × equal roles	—	—	−0.037	—	—	0.009
			(0.054)			(0.054)
R^2 within	0.010	0.014	0.007	0.020	0.024	0.006
N	3,385	3,385	2,090	3,385	3,385	2,090

OLS regression results are reported, with standard errors in parentheses. The regressions in columns (1), (2), (4), and (5) consist of observations of YPSS respondents for the 1965, 1972, and 1983 waves, while regressions in columns (3) and (6) are based on the 1973 and 1982 waves only. All regressions include individual and year fixed effects. * indicates significance at 10 percent, and ** at 5 percent.

tal status and political preferences, we sequentially include elements of a vector of time-varying individual characteristics denoted θ_{it} in our regression.

Table X, column (1), tells us that marriage lowers the likelihood that a woman, relative to a man, is a **democrat.** This effect, however, is statistically indistinguishable from 0. In contrast,

Do parties matter? I
Lee et. al.

- Determinants of legislative voting:
  - Preferences of voters (affect of voters): politician can commitment
  - Preferences of politicians (election by voters): politician can not commit

$$RC_t = \alpha + \pi_0 P_t^* + \pi_1 D_t + \varepsilon_t$$

- Where

$P_t^* =$ Electoral Strength

$D_t =$ Party of Politician in Power

$RC_t =$ Role Call Voting

Do parties matter? II

- Causal inference problem:

$$Cov\left(P_t^*, D_t\right) \neq 0$$

and

P_t^* is not observed

- However, we can estimate π_1 if we can randomize D_t by running:

$$RC_t = \alpha + \pi_1 D_t + \varepsilon_t$$

Do parties matter? III

- This allows to to calculate the degree to which voters elect rather than affect policies by electing politicians. However it does not allow us to calculate the degree to which voters affect rather than elect policies.

- Nevertheless note that:

$$E\left(RC_{t+1}\middle|D_t\right)=\alpha+\pi_0 P^*_{t+1}+\pi_1 E\left(D_{t+1}\middle|D_t\right)+E\left(\varepsilon_{t+1}\middle|D_t\right)$$

- Moreover, if D is randomly assigned, then:

$$E\left(\varepsilon_{t+1}\middle|D_t\right)=0$$

Now, calculating the differential voting record at time t+1 given that a democrat wins at time t versus a republican

$$E\left(RC_{t+1}\middle|D_t=1\right)-E\left(RC_{t+1}\middle|D_t=0\right)=\pi_0\left(P^{*D}_{t+1}-P^{*R}_{t+1}\right)+\pi_1\left(P^{D}_{t+1}-P^{R}_{t+1}\right)$$

- where: $P^D_t=$ the probability of a democrat winning at time t+1 given a democrat won at time t

Do parties matter? IV

- Now (if we randomize the election: D) we can calculate:
  - (1.) The degree to which voters elect policies

$$RC_t = \alpha + \pi_1 D_t + \varepsilon_t$$

  - (2.) The probability of that a Democrat wins an election in an electoral district given that a Democrat won the prior election:

$$E\left(D_{t+1} \middle| D_t = 1\right) - E\left(D_{t+1} 0\right) = P_{t+1}^{D} - P_{t+1}^{R}$$

- We can also estimate the effect of a democrat getting elected at date t on policy at date t+1:

$$\gamma = E\left(RC_{t+1} \middle| D_t = 1\right) - E\left(RC_{t+1} \middle| D_t = 0\right) = \pi_0 \left(P_{t+1}^{*D} - P_{t+1}^{*R}\right) + \pi_1 \left(P_{t+1}^{D} - P_{t+1}^{R}\right)$$

- Thus we can calculate the degree to which citizens affect policies (just the residual):

$$\gamma - \pi_1 \left(P_{t+1}^{D} - P_{t+1}^{R}\right)$$

Do parties matter? V

- How do we acheive randomization of D?
- Regression Discontinuity: Two Approaches
  - (1.) Look at Close Elections (<2% vote margin of victory):

$$E\left(RC_t \middle| D_t = 1\right) - E\left(RC_t \middle| D_t = 0\right) = \pi_1$$

$$E\left(D_{t+1} \middle| D_t = 1\right) - E\left(D_{t+1} \middle| D_t = 0\right) = P_{t+1}^{D} - P_{t+1}^{R}$$

$$E\left(RC_{t+1} \middle| D_t = 1\right) - E\left(RC_{t+1} \middle| D_t = 0\right) = \gamma$$

Do parties matter? VI

- Regression Discontinuity: Two Approaches (continued)
  - (2.) Look at Polynomial fits in the vote share before and after the discontinuity and test for equality at the discontinuity:

$$E\left(RC_t \middle| D_t = 1\right) - E\left(RC_t \middle| D_t = 0\right) =$$
$$D_t\left[\alpha_0 + \alpha_1 V_t + \alpha_2 V_t^2 + \alpha_3 V_t^3 + \alpha_4 V_t^4\right] +$$
$$\left(1 - D_t\right)\left[\beta_0 + \beta_1 V_t + \beta_2 V_t^2 + \beta_3 V_t^3 + \beta_4 V_t^4\right]$$

    - The estimate is then

$$E\left(RC_t \middle| D_t = 1, V_t = .5\right) - E\left(RC_t \middle| D_t = 0, V_t = .5\right)$$

Do parties matter? VII

- Data:
  - Dependent Variable
    - Democratic Two-Party Vote Share from House of Representatives Elections
  - Independent Variable
    - ADA Score (weighted measure of liberalness based on 20 key votes every year)
    - Nominate and DW-Nominate (Rosenthal and Poole)
    - Measures of Party Loyalty
    - Measures by Interest Groups (Unions, Christian Groups, etc...)

Do parties matter? VII

- Problems:
  - Identification:
    - (1.) Close Elections: We dont know how close is close. A narrower definition of close election leads to better identification but less precision and less external validity.
      - Hahn, Todd, and Van Der Klaauw (Econometrica, Jan. 2001): Regression discontinuity as non-parametric estimator (remaining optimal bandwidth problem)
    - (2.) Polynomial Fitting: We dont know the functional form of the polynomial in the vote share. If we get it wrong, we may estimate an effect just due to poor fitting of the polynomial.
      - Solution: monte carlo selection of placebo discontinuity points
    - (3.) General Problem: How do we know that there isnt selection around the discontinuity (i.e. firm size regulations)
      - (a.) institutional knowledge (i.e. small committee elections with publicly observed votes versus general elections)
      - (b.) empirical verification that there is no selection around the discontinuity using other variables (i.e. David Lee paper, Jason Snyder paper)

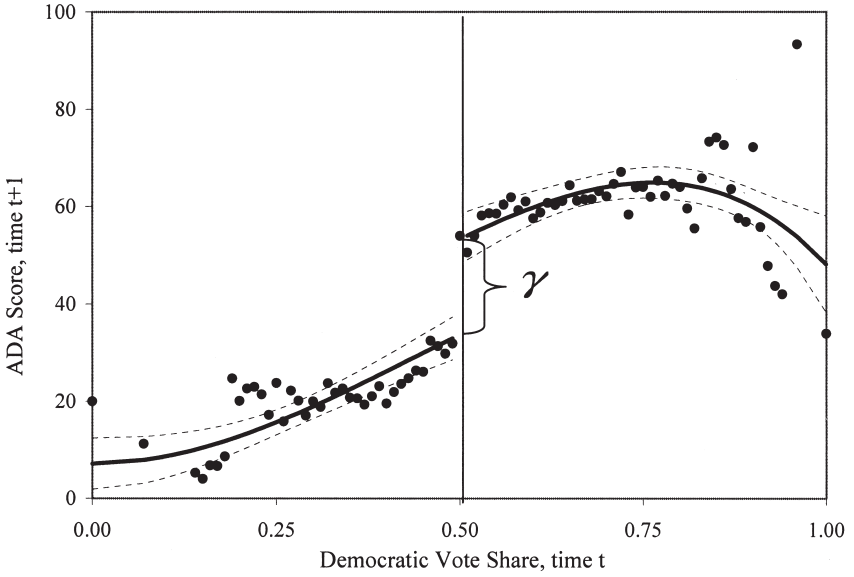

FIGURE I

Total Effect of Initial Win on Future ADA Scores: γ

This figure plots ADA scores after the election at time $t + 1$ against the Democrat vote share, time t. Each circle is the average ADA score within 0.01 intervals of the Democrat vote share. Solid lines are fitted values from fourth-order polynomial regressions on either side of the discontinuity. Dotted lines are pointwise 95 percent confidence intervals. The discontinuity gap estimates

$$\gamma = \underbrace{\pi_0(P^{*D}_{t+1} - P^{*R}_{t+1})}_{\text{“Affect”}} + \underbrace{\pi_1(P^{*D}_{t+1} - P^{*R}_{t+1})}_{\text{“Elect”}}.$$

be a continuous and smooth function of vote shares everywhere, except at the threshold that determines party membership. There is a large discontinuous jump in ADA scores at the 50 percent threshold. Compare districts where the Democrat candidate barely lost in period t (for example, vote share is 49.5 percent), with districts where the Democrat candidate barely won (for example, vote share is 50.5 percent). If the regression discontinuity design is valid, the two groups of districts should appear ex ante similar in every respect—on average. The difference will be that in one group, the Democrats will be the incumbent for the next election ($t + 1$), and in the other it will be the Republicans. Districts where the Democrats are the incumbent party for election $t + 1$ elect representatives who have much higher ADA scores, compared with districts where the Republican candidate

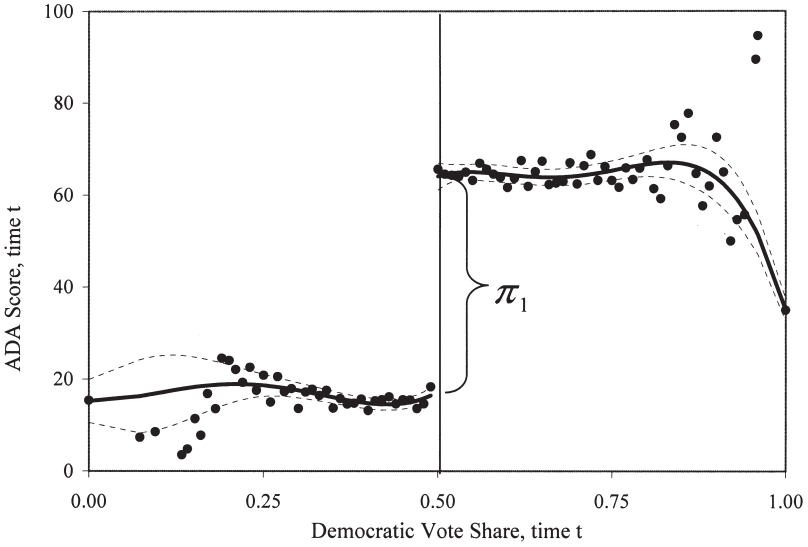

FIGURE IIa
Effect of Party Affiliation: π_1

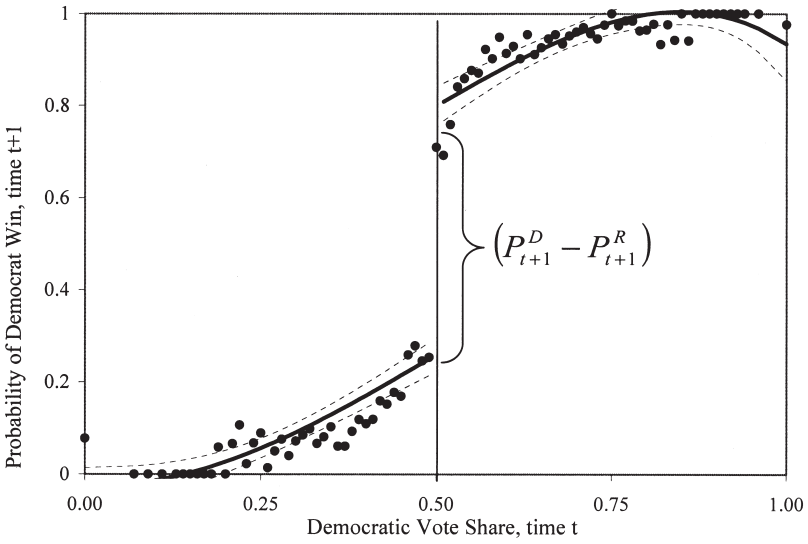

FIGURE IIb
Effect of Initial Win on Winning Next Election: $(P^D_{t+1} - P^R_{t+1})$

Top panel plots ADA scores after the election at time t against the Democrat vote share, time t. Bottom panel plots probability of Democrat victory at $t + 1$ against Democrat vote share, time t. See caption of Figure III for more details.

TABLE I
RESULTS BASED ON ADA SCORES—CLOSE ELECTIONS SAMPLE

	Total effect			Elect component	Affect component
	γ	π_1	$(P^D_{t+1} - P^R_{t+1})$	$\pi_1[(P^D_{t+1} - P^R_{t+1})]$	$\pi_0[P^{*D}_{t+1} - P^{*R}_{t+1}]$
Variable	ADA_{t+1}	ADA_t	DEM_{t+1}	(col. (2)*(col. (3))	(col. (1)) − (col. (4))
	(1)	(2)	(3)	(4)	(5)
Estimated gap	21.2	47.6	0.48		
	(1.9)	(1.3)	(0.02)		
				22.84	−1.64
				(2.2)	(2.0)

Standard errors are in parentheses. The unit of observation is a district-congressional session. The sample includes only observations where the Democrat vote share at time t is strictly between 48 percent and 52 percent. The estimated gap is the difference in the average of the relevant variable for observations for which the Democrat vote share at time t is strictly between 50 percent and 52 percent and observations for which the Democrat vote share at time t is strictly between 48 percent and 50 percent. Time t and $t + 1$ refer to congressional sessions. ADA_t is the adjusted ADA voting score. Higher ADA scores correspond to more liberal roll-call voting records. Sample size is 915.

primarily elect policies (full divergence) rather than affect policies (partial convergence).

Here we quantify our estimates more precisely. In the analysis that follows, we restrict our attention to "close elections"—where the Democrat vote share in time t is strictly between 48 and 52 percent. As Figures I and II show, the difference between barely elected Democrat and Republican districts among these elections will provide a reasonable approximation to the discontinuity gaps. There are 915 observations, where each observation is a district-year.[20]

Table I, column (1), reports the estimated total effect γ, the size of the jump in Figure I. Specifically, column (1) shows the difference in the average ADA_{t+1} for districts for which the Democrat vote share at time t is strictly between 50 percent and 52 percent and districts for which the Democrat vote share at time t is strictly between 48 percent and 50 percent. The estimated difference is 21.2.

In column (2) we estimate the coefficient π_1, which is equal to the size of the jump in Figure IIa. The estimate is the difference in the average ADA_t for districts for which the Democrat vote

20. In 68 percent of cases, the representative in period $t + 1$ is the same as the representative in period t. The distribution of close elections is fairly uniform across the years. In a typical year there are about 40 close elections. The year with the smallest number is 1988, with twelve close elections. The year with the largest number is 1966, with 92 close elections.

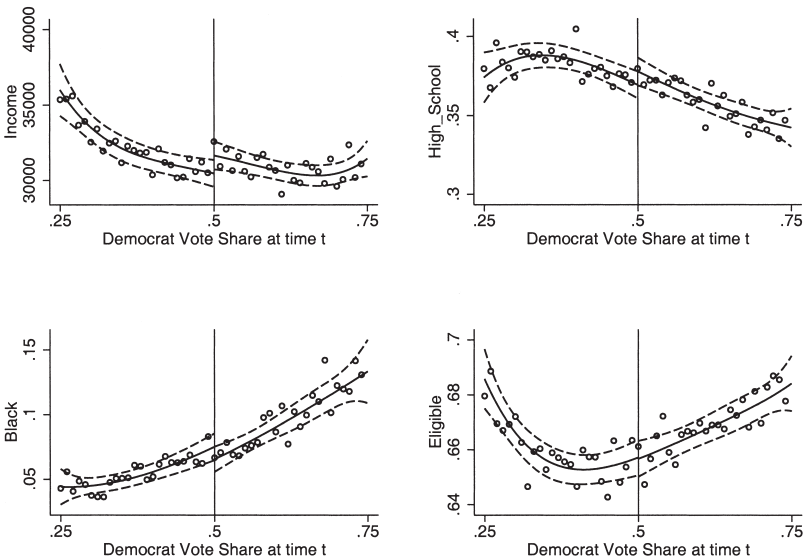

FIGURE III

Similarity of Constituents' Characteristics in Bare Democrat and Republican Districts–Part 1

Panels refer to (from top left to bottom right) the following district characteristics: real income, percentage with high-school degree, percentage black, percentage eligible to vote. Circles represent the average characteristic within intervals of 0.01 in Democrat vote share. The continuous line represents the predicted values from a fourth-order polynomial in vote share fitted separately for points above and below the 50 percent threshold. The dotted line represents the 95 percent confidence interval.

share. The coefficient reported in column (6) is the predicted difference at 50 percent. The table confirms that, for many observable characteristics, there is no significant difference in a close neighborhood of 50 percent. One important exception is the percentage black, for which the magnitude of the discontinuity is statistically significant.[23]

As a consequence, estimates of the coefficients in Table I from regressions that include these covariates would be expected to produce similar results—as in a randomized experiment—since

23. This is due to few outliers in the outer part of the vote share range. When the polynomial is estimated including only districts with vote share between 25 percent and 75 percent, the coefficients becomes insignificant. The gap for percent urban and open seats, while not statistically significant at the 5 percent level, is significant at the 10 percent level.

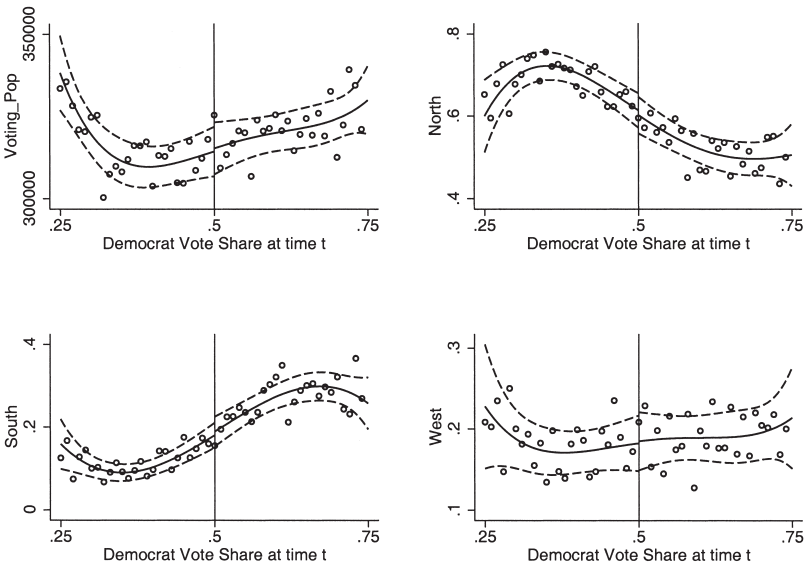

FIGURE IV

Similarity of Constituents' Characteristics in Bare Democrat and Republican Districts—Part 2

Panels refer to (from top left to bottom right) the following district characteristics: voting population, North, South, West. Circles represent the average characteristic within intervals of 0.01 in Democrat vote share. The continuous line represents the predicted values from a fourth-order polynomial in vote share fitted separately for points above and below the 50 percent threshold. The dotted line represents the 95 percent confidence interval.

all predetermined characteristics appear to be orthogonal to D_t. We have reestimated all the models in Table I conditioning on all of the district characteristics in Table II, and found estimates that are virtually identical to the ones in Table I.

As a similar empirical test of our identifying assumption, in Figure V we plot the ADA scores from the Congressional sessions that *preceded* the determination of the Democratic two-party vote share in election t. Since these past scores have already been determined by the time of the election, it is yet another predetermined characteristic (just like demographic composition, income levels, etc.). If the RD design is valid, then we should observe no discontinuity in these lagged ADA scores—just as we would expect, in a randomized experiment, to see no systematic differences in any variables determined prior to the experiment. The

TABLE II
DIFFERENCE IN DISTRICT CHARACTERISTICS BETWEEN DEMOCRAT AND REPUBLICAN DISTRICTS, BY DISTANCE FROM 50 PERCENT

	All	+/− 25	+/− 10	+/− 5	+/− 2	Polynomial
	(1)	(2)	(3)	(4)	(5)	(6)
North	−0.211	−0.156	−0.096	−0.054	−0.059	−0.041
	(0.018)	(0.019)	(0.021)	(0.024)	(0.036)	(0.045)
South	0.250	0.145	0.093	0.053	0.009	0.015
	(0.015)	(0.014)	(0.016)	(0.019)	(0.028)	(0.036)
West	−0.031	−0.012	−0.036	−0.003	0.001	0.001
	(0.013)	(0.015)	(0.020)	(0.017)	(0.020)	(0.036)
Log income	−0.086	−0.036	0.014	0.026	0.030	0.052
	(0.013)	(0.012)	(0.014)	(0.017)	(0.026)	(0.033)
Percentage high-school grad.	−0.035	−0.024	−0.008	−0.001	0.001	0.008
	(0.003)	(0.003)	(0.004)	(0.004)	(0.007)	(0.008)
Percentage urban	0.070	0.065	0.053	0.053	0.056	0.053
	(0.011)	(0.011)	(0.012)	(0.014)	(0.023)	(0.028)
Percentage black	0.082	0.042	0.013	0.003	−0.003	−0.053
	(0.005)	(0.004)	(0.004)	(0.005)	(0.009)	(0.013)
Manufacturing employment	−0.002	0.000	0.004	0.004	0.005	0.003
	(0.001)	(0.001)	(0.002)	(0.002)	(0.004)	(0.005)
Total population	−1817.9	3019.2	4961.5	3211.4	8640.4	2007.5
	(3517.3)	(3723.0)	(4562.4)	(5524.2)	(8427.9)	(10483.0)
Percentage eligible to vote	0.005	0.010	0.007	0.006	−0.003	−0.003
	(0.002)	(0.002)	(0.003)	(0.004)	(0.006)	(0.007)
Open seats	0.070	0.065	0.053	0.053	0.056	0.053
	(0.011)	(0.011)	(0.012)	(0.014)	(0.023)	(0.028)
Number of observations	13413	10229	4174	2072	910	13413

Standard errors are in parentheses. The unit of observation is a district-congressional session. Columns (1) to (5) report the difference in average district characteristics between Democrat and Republican districts. Column (1) includes the entire sample. Columns (2) to (5) include only districts with Democrat vote share between 25 percent and 75 percent, 40 percent and 60 percent, 45 percent and 55 percent, and 48 percent and 52 percent, respectively. The model in column (6) includes a fourth-order polynomial in Democrat vote share that enters separately for vote share above and below 50 percent. The coefficient reported in column (6) is the predicted difference at 50 percent. All standard errors account for district-decade clustering.

lack of discontinuity in the figure lends further credibility to our identifying assumption.[24]

Overall, the evidence strongly supports a valid regression discontinuity design. And as a consequence, it appears that among close elections, who wins appears virtually randomly assigned, which is the identifying assumption of our empirical strategy.

24. The estimated gap is 3.5 (5.6).

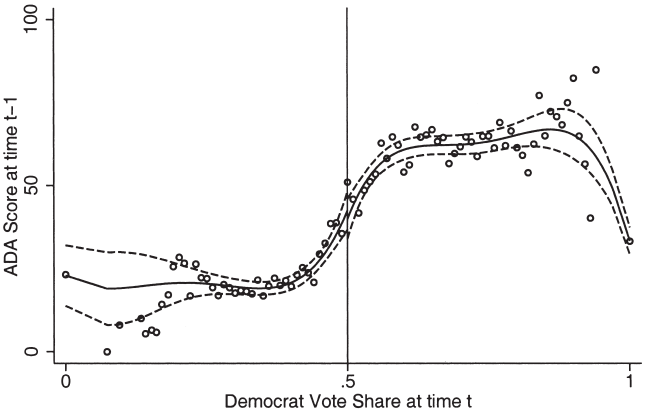

FIGURE V

Specification Test: Similarity of Historical Voting Patterns between Bare Democrat and Republican Districts

The panel plots one time lagged ADA scores against the Democrat vote share. Time t and $t - 1$ refer to congressional sessions. Each point is the average lagged ADA score within intervals of 0.01 in Democrat vote share. The continuous line is from a fourth-order polynomial in vote share fitted separately for points above and below the 50 percent threshold. The dotted line is the 95 percent confidence interval.

V.C. Sensitivity to Alternative Measures of Voting Records

Our results so far are based on a particular voting index, the ADA score. In this section we investigate whether our results generalize to other voting scores. We find that the findings do not change when we use alternative interest groups scores, or other summary measures of representatives' voting records.

Table III is analogous to Table I, but instead of using ADA scores, it is based on two alternative measures of roll-call voting. The top panel is based on McCarty, Poole, and Rosenthal's DW-NOMINATE scores. The bottom panel is based on the percent of individual roll-call votes cast that are in agreement with the Democrat party leader. All the qualitative results obtained using ADA scores (Table I) hold up using these measures. When we use the DW-NOMINATE scores, γ is -0.36, remarkably close to the corresponding estimate of $\pi_1[P^D_{t+1} - P^R_{t+1}]$ in column (4), which is -0.34. The estimates are negative here because, unlike ADA scores, higher Nominate scores correspond to a more conservative voting record. When we use the measure "percent voting with the Democrat leader," γ is 0.13, almost indistinguishable from the

TABLE III
RESULTS BASED ON NOMINATE SCORES AND ON PERCENT VOTED LIKE DEMOCRAT LEADERSHIP—CLOSE ELECTIONS SAMPLE

Variable	Total effect γ Z_{t+1} (1)	π_1 Z_t (2)	$(P^D_{t+1} - P^R_{t+1})$ DEM_{t+1} (3)	Elect component $\pi_1[(P^D_{t+1} - P^R_{t+1})]$ (col. (2)*(col. (3)) (4)	Affect component $\pi_0[P^{*D}_{t+1} - P^{*R}_{t+1}]$ (col. (1)) − (col. (4)) (5)
(a) Results based on Nominate scores					
Estimated gap	−0.36	−0.58	0.62		
	(0.03)	(0.02)	(0.04)		
				−0.34	−0.02
				(0.04)	(0.04)
(b) Results based on percent voted like Democrat leadership					
Estimated gap	0.13	0.29	0.46		
	(0.01)	(0.006)	(0.02)		
				0.13	0.00
				(0.02)	(0.02)

Standard errors are in parentheses. The unit of observation is a district-congressional session. The sample includes only observations where the Democrat vote share at time t is strictly between 48 percent and 52 percent. The estimated gap is the difference in the relevant variable for observations for which the Democrat vote share at time t is strictly between 50 percent and 52 percent and observations for which the Democrat vote share at time t is strictly between 48 percent and 50 percent. Time t and $t + 1$ refer to congressional sessions. The top panel uses the DW-NOMINATE score constructed by McCarty, Poole, and Rosenthal. Higher Nominate scores correspond to more conservative roll-call voting records. The bottom panel uses the percent of a representative's votes that agree with the Democrat party leader. Sample size is 276 in top panel and 1010 in bottom panel.

estimate $\pi_1[P^D_{t+1} - P^R_{t+1}]$ in column (4), which is 0.13. We show the graphical analysis for the estimate of π_1 in Figure VI.

Our empirical findings are also not sensitive to the use of ratings from various liberal and conservative interest groups. Liberal interest groups include the American Civil Liberties Union, the League of Women Voters, the League of Conservation Voters, the American Federation of Government Employees, the American Federation of State, County, and Municipal Employees, the American Federation of Teachers, the AFL-CIO Building and Construction, and the United Auto Workers. Conservative groups include the Conservative Coalition, the U. S. Chamber of Commerce, the American Conservative Union, and the Christian Voice. All the ratings range from 0 to 100. For liberal groups, low ratings correspond to conservative roll-call votes, and high ratings correspond to liberal roll-call votes. For conservative groups the opposite is true.

These alternative ratings yield results that are qualitatively similar to our findings in Table I and III. Instead of presenting these results in a table format as we did in Table I and III, we present the main results in graphical form. We summarize our

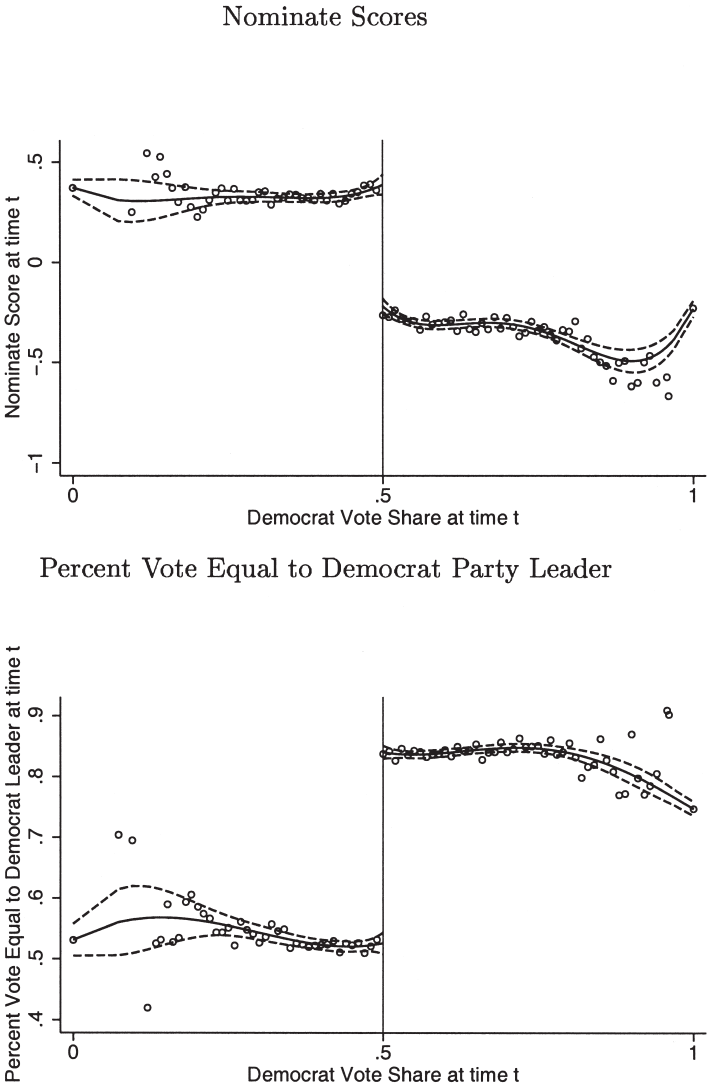

FIGURE VI

Nominate Scores, by Democrat Vote Share; and Percent Voted with Democrat Leader, by Democrat Vote Share

The top panel plots DW-Nominate scores at time t against the Democrat vote share at time t. Circles represent the average Nominate score within intervals of 0.01 in Democrat vote share. The bottom panel plots the fraction of a Representative's votes that agree with the Democrat party leader at time t against the Democrat vote share at time t. Circles represent the percent voted with Democrat leader within intervals of 0.01 in Democrat vote share. The continuous line is from a fourth-order polynomial in vote share fitted separately for points above and below the 50 percent threshold. The dotted line is the 95 percent confidence interval.

TABLE IV
RESULTS BASED ON ADA SCORES, BY DECADE—CLOSE ELECTIONS SAMPLE

Variable	(1) Total effect γ ADA_{t+1}	(2) π_1 ADA_t	(3) $(P^D_{t+1} - P^R_{t+1})$ DEM_{t+1}	(4) Elect component $\pi_1[(P^D_{t+1} - P^R_{t+1})]$ (col. (2)*(col. (3))	(5) Affect component $\pi_0[P^{*D}_{t+1} - P^{*R}_{t+1}]$ (col. (1)) − (col. (4))
1946–1958	14.2	41.7	0.41		
	(3.2)	(2.3)	(0.05)		
				17.0	−2.8
				(4.8)	(4.0)
1960–1968	23.5	49.5	0.51		
	(3.5)	(2.7)	(0.05)		
				25.2	−1.7
				(4.9)	(4.1)
1970–1978	11.5	46.6	0.40		
	(4.7)	(3.1)	(0.06)		
				18.6	−7.1
				(5.1)	(5.1)
1980–1996	46.8	56.6	0.76		
	(3.7)	(2.8)	(0.05)		
				43.0	3.8
				(4.9)	(4.5)

Standard errors are in parentheses. The unit of observation is a district-congressional session. The sample includes only observations where the Democrat vote share at time t is strictly between 48 percent and 52 percent. The estimated gap is the difference in the average of the relevant variable for observations for which the Democrat vote share at time t is strictly between 50 percent and 52 percent and observations for which the Democrat vote share at time t is strictly between 48 percent and 50 percent. Time t and $t + 1$ refer to congressional sessions. ADA_t is the adjusted ADA voting score. Higher ADA scores correspond to more liberal roll-call voting records. Sample sizes are 322 in 1946–1958; 245 in 1960–1968; 183 in 1970–1978; 164 in 1980–1996.

VI. RELATION TO PREVIOUS EMPIRICAL LITERATURE

A number of empirical studies have directly or indirectly examined the policy convergence issue.[28] Typically, the studies examine whether party affiliation matters for the observed voting records of the legislator. Most studies find evidence of this, which is strictly inconsistent with the *complete* policy convergence result. For example, Poole and Rosenthal [1984] show that senators from the same state belonging to different parties have significantly different voting records.

28. An example of early empirical work in this area is Miller and Stokes [1963]. The literature is too large to be summarized here. Other examples include, but are not limited to, Snyder and Ting [2001a], Fiorina [1999], Poole and Rosenthal [2001], Snyder and Ting [2001b], Lott and Davis [1992], Canes-Wrone, Brady, and Cogan [2002], Krehbiel [2000], Bender [1991], McArthur and Marks [1988], and McCarty, Poole, and Rosenthal [2000].

Do parties matter? VIII

- Problems:
  - Interpretation & External Validity
    - Benefit of Approach: Clean identification
    - Cost of Approach: Small Sample
      - Heterogeneous Treatment Effects and External Validity
      - Statistical Power

- Specific Problems with Lee et. Al. Paper
  - Estimates of electing policies: clean
  - Estimates of affecting policies: not so clean
  - Other identification problems
    - impact on composition of legislature and thus on what bills are voted in?
    - do we care about voting in the legislature? maybe the only difference in voting patterns is for votes which are sufficiently lop-sided that the differences are policy irrelevant?

Minority Politics and Distribution I

- Rohini Pande, AER 2003
  - Looks at set aside sides in India
  - Uses variation in reporting of minority population every 10 years in the census to look at impact of set-aside seats on policy outcomes
  - Finds that set-aside seats lead to greater redistribution towards minority groups

Minority Politics and Distribution II

- Institutional Background
  - Scheduled Tribes are 8% of the Indian population
  - Scheduled Castes are 16% of the Indian population
  - 1931 Census defined these groups: updated twice in 1956 and in 1976
  - Much poorer than the average population / much more likely to be discriminated against

- Elections
  - Certain percentage of district seats in state governments are reserved for scheduled tribes and scheduled castes (districts are single representative districts as of 1962 – before that some were dual member districts)
  - These percentages are updated before the first election after the census is tabulated (every 10 years)

TABLE 2—LEGAL IDENTIFICATION OF SCHEDULED CASTES AND SCHEDULED TRIBES

Selection criteria for scheduled castes
1. Cannot be served by clean Brahmans
2. Cannot be served by the barbers, water-carriers, tailors, etc. who serve the caste Hindus
3. Pollutes a high-caste Hindu by contact or by proximity
4. Is one from whose hands a caste Hindu cannot take water
5. Is debarred from using public amenities such as roads, ferries, wells, or schools
6. Will not be treated as an equal by high-caste men of the same educational qualification in ordinary social intercourse
7. Is depressed on account of the occupation followed and, but for that, occupation would be subject to no social disability
Selection criteria for scheduled tribes
1. Tribal origin
2. Primitive ways of life and habitation in remote and less accessible areas
3. General backwardness in all respects

Note: The above criteria were the required basis for the selection of "scheduled caste" and "scheduled tribe" communities, as stated in the Constitutional (scheduled caste and scheduled tribe) orders of 1950.

TABLE 3—ECONOMIC CHARACTERISTICS OF SCHEDULED CASTES AND SCHEDULED TRIBES: 1991

Variable	Scheduled castes	Scheduled tribes	Non-SC/ST population
Overall population share	16.4	7.9	75.4
Within-group characteristics:			
Urban population share	18.7	7.3	29.2
Literacy rate	37.4	29.6	57.8
Labor force participation rate	36	42	32.8
Percent labor force in the primary sector	77.1	90	62.1
Percent population below poverty line	48.3	52.0	31.4

Notes: All numbers are from 1991 census, except poverty figures which are from the Indian National Sample Survey (1993–1994), Planning Commission Estimates. The primary sector includes those employed in agricultural and allied activities. Within-group characteristics are reported as a percentage of the group population.

The constitutional (scheduled caste and scheduled tribe) orders of 1950 established state-specific lists which identified the castes and tribes that fall in the categories of scheduled castes and scheduled tribes respectively. The caste identification criteria of the 1931 census formed the basis for the selection of scheduled castes, and a tribal identification criteria developed by a 1950 Parliamentary the basis for choosing scheduled tribes. Table 2 describes these criteria. The scheduled caste and scheduled tribe lists have been revised twice—in 1956 to remove anomalies arising from the linguistic reorganization of states, and in 1976 to remove within-state discrepancies in the identification of certain castes and tribes as scheduled castes and scheduled tribes respectively.

Scheduled castes make up roughly 16 percent of the Indian population, and scheduled tribes another 8 percent. Relative to the rest of the population, individuals belonging to these two groups remain socially and economically disadvantaged. The incidence of poverty in these groups is roughly one and a half times that in the rest of the population (see Table 3). The economic backwardness of scheduled castes can be directly traced to the caste system.[14] Members of scheduled castes were traditionally assigned to menial occupations such as skinning animal carcasses and removing human waste, and faced restrictions on asset ownership.[15] In

[14] Roughly 85 percent of the Indian population is Hindu. Every Hindu belongs to a caste, and caste membership is hereditary. The genesis of the caste system is usually traced to the Aryan invasion of India in approximately 1500 B.C. Caste groupings are, in general, endogamous. The caste system is hierarchical, with a caste's rank the primary determinant of its members' occupation.

[15] For instance, Manu Smriti, the definitive treatise on caste system, decrees that the dwellings of low castes be

Minority Politics and Distribution III

- Elections (continued)
  - Certain percentage of district seats in state governments are reserved for scheduled tribes and scheduled castes
  - These percentages are updated before the first election after the census is tabulated (every 10 years)
  - There are also some one-time changes in seats for scheduled groups (see Table 4)

- Data
  - Outcomes: Log State Expenditure, Education Spending (share of state expenditure going to education), SC Welfare Spending (as a share of total expenditures), ST Welfare Spending (as a share of total expenditures), Land Reform (dummy variable), Job Quota (proportion of government jobs reserved for STs and SCs), State Income, Price Deflators

Minority Politics and Distribution IV

- Data
  - Political: SC reservations (as a proportion of seats by state and year), ST reservations (as a proportion of seats by state and year), Election Dummy (if an election occurs in a given year)
  - Population Data: State-level population from census years, interpolated in intermediate years (for 16 states)

Minority Politics and Distribution V

- Regressions (Tables 6 and 7):

$$Y_{st} = \alpha_s + \beta_t + \gamma R_{st} + \varphi P^*_{st} + \delta P_{st} + \eta X_{st} + \varepsilon_{st}$$

Y_{st} = Outcome variable

α_s = State fixed effect

β_t = Year fixed effect

R_{st} = SC Reservations and ST Reservations

P^*_{st} = Most Recent Census Population Shares of ST and SC

P_{st} = Interpolated ST and SC Population Shares

X_{st} = Lagged change in income, Population density, Election Dummy

TABLE 6—POLITICAL RESERVATION AND GENERAL POLICY OUTCOMES

	Total spending				Education				Land reform			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
SC reservation	−0.005	−0.009	−0.006	−0.004	−0.15	−0.141	−0.129	−0.115	0.007	0.008	0.01	0.016
	(0.005)	(0.005)	(0.005)	(0.007)	(0.122)	(0.121)	(0.116)	(0.146)	(0.013)	(0.013)	(0.013)	(0.015)
ST reservation	0.023***	0.028***	0.019***	0.019***	−0.542***	−0.385***	−0.252*	−0.380**	0.008	0.007	0.003	0.013
	(0.003)	(0.006)	(0.006)	(0.006)	(0.082)	(0.136)	(0.151)	(0.155)	(0.010)	(0.019)	(0.019)	(0.019)
SC census population share		0.011***	0.006	0.006		−0.039	−0.044	−0.068		−0.001	−0.005	−0.007
		(0.004)	(0.006)	(0.006)		(0.050)	(0.070)	(0.079)		(0.006)	(0.008)	(0.008)
ST census population share		−0.004	−0.011**	−0.011**		−0.168	0.015	0.078		0	−0.001	0.001
		(0.005)	(0.005)	(0.005)		(0.104)	(0.128)	(0.121)		(0.015)	(0.016)	(0.017)
SC current population share			0.012	0.011			0.025	0.17			0.01	0.016
			(0.008)	(0.009)			(0.101)	(0.141)			(0.015)	(0.015)
ST current population share			0.028***	0.029***			−0.587***	−0.691***			0.009	−0.014
			(0.007)	(0.008)			(0.177)	(0.192)			(0.020)	(0.020)
Other controls	NO	NO	NO	YES	NO	NO	NO	YES	NO	NO	NO	YES
Adjusted R^2	0.96	0.96	0.96	0.96	0.72	0.73	0.76	0.78	0.11	0.11	0.11	0.11
Number of observations	519	519	519	505	513	513	513	499	519	519	519	505

Notes: Robust standard errors are in parentheses. Regressions include state and year dummies. The Data Appendix describes the construction and source of variables. The data are for the 16 main states, and the period 1960–1992. For Haryana, which split from Punjab in 1965, the data starts in 1967, and for Jammu-Kashmir in 1962. This gives 519 observations. Deviations from this are due to missing data (on which, see the Data Appendix). Total spending is the log real state per capita expenditure. Education spending is expressed as a share of total spending. Land reform is a dummy variable which equals one in years a state passes a land reform act. SC/ST population variables are expressed as a share of total state population. SC/ST census population share refers to population shares as measured by the census when reservation was determined; SC/ST current population share is the population share measured in the current year. Other controls include census population density, state income per capita lagged one period and the election dummy.

* Significant at the 10-percent level.

** Significant at the 5-percent level.

*** Significant at the 1-percent level.

TABLE 7—POLITICAL RESERVATION AND TARGETED POLICY OUTCOMES

	Job quotas				SC welfare spending				ST welfare spending			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
SC reservation	0.539***	0.493***	0.659***	0.675***	0.011	0.082	0.083	0.126	−0.524	−0.511	−0.436	−0.305
	(0.120)	(0.115)	(0.108)	(0.135)	(0.181)	(0.196)	(0.200)	(0.198)	(0.324)	(0.324)	(0.289)	(0.301)
ST reservation	0.199*	−0.316	−0.301	−0.371*	0.092	0.067	0.076	−0.024	0.713**	0.693**	1.019***	0.863***
	(0.109)	(0.204)	(0.225)	(0.223)	(0.103)	(0.104)	(0.108)	(0.127)	(0.335)	(0.330)	(0.301)	(0.325)
SC census population share		0.188***	−0.071	−0.113		−0.052	−0.055	−0.104		−0.063	−0.145	−0.195
		(0.065)	(0.073)	(0.081)		(0.077)	(0.080)	(0.068)		(0.151)	(0.170)	(0.169)
ST census population share		0.559***	0.842***	0.861***		−0.033	−0.028	0.07		0.033	0.19	0.317*
		(0.170)	(0.190)	(0.192)		(0.077)	(0.080)	(0.081)		(0.138)	(0.161)	(0.187)
SC current population share			0.648***	0.699***			−0.052	−0.092			−0.435**	−0.347**
			(0.132)	(0.172)			(0.121)	(0.123)			(0.189)	(0.172)
ST current population share			−0.675**	−0.689**			−0.12	−0.163			−0.576**	−0.706***
			(0.294)	(0.313)			(0.136)	(0.131)			(0.233)	(0.257)
Other controls	NO	NO	NO	YES	NO	NO	NO	YES	NO	NO	NO	YES
Adjusted R^2	0.88	0.9	0.9	0.91	0.76	0.76	0.76	0.76	0.83	0.83	0.84	0.84
Number of observations	519	519	519	505	274	274	274	274	298	298	298	298

Notes: Robust standard errors are in parentheses. Regressions include state and year dummies. The Data Appendix describes the construction and source of variables. The data are for the 16 main states, and the period 1960–1992. For Haryana, which split from Punjab in 1965, the data starts in 1967, and for Jammu-Kashmir in 1962. This gives 519 observations. Deviations from this are due to missing data (on which, see the Data Appendix). Total spending is log real state per capita expenditure. Education spending is expressed as a share of total spending. Land reform is a dummy variable which equals one in years a state passes a land reform act. SC/ST population variables are expressed as a proportion of total state population. SC/ST census population share is population shares as measured by the census when reservation was determined; SC/ST current population share is the population share measured in the current year. Other controls include census population density, state income per capita lagged one period and the election dummy.

* Significant at the 10-percent level.

** Significant at the 5-percent level.

*** Significant at the 1-percent level.

Minority Politics and Distribution VI

- Robustness Regressions (Table 8):
  - Nonlinear Census and Population Controls (i.e. Increases in SC and ST shares do nothing at low levels but do alot at high levels and high levels are correlated with changes in number of seats)
  - Lagged Current Population Controls (one and two year lags)
  - State-Specific Piecewise Linear Trend (increases by one in years where there is a change in number of reserved seats – controls for omitted variables which increase when number of reserved seats change)
  - Discontinuity Sample (5 years before and after a given election with a change in reserved seats)... More like an event study
  - Also, does but doesnt report SC and ST shares instrumented by census shares (measurement error)

TABLE 8—POLITICAL RESERVATION AND POLICY OUTCOMES: ROBUSTNESS CHECKS

	Nonlinear census population controls	Lagged current population controls	State-specific piecewise linear trend	Discontinuity sample
	(1)	(2)	(3)	(4)
PANEL A: Dependent variable: Total spending				
SC reservation	0.001	−0.005	−0.001	0.011
	(0.009)	(0.007)	(0.006)	(0.008)
ST reservation	0.016**	0.020***	0.025***	0.011
	(0.008)	(0.006)	(0.006)	(0.009)
PANEL B: Dependent variable: Education spending				
SC reservation	0.03	−0.103	−0.205	−0.238
	(0.197)	(0.157)	(0.135)	(0.223)
ST reservation	−0.358	−0.474***	−0.560***	−0.558**
	(0.247)	(0.159)	(0.150)	(0.236)
PANEL C: Dependent variable: Job quotas				
SC reservation	0.709***	0.590***	0.558***	0.345**
	(0.219)	(0.111)	(0.135)	(0.161)
ST reservation	−0.716**	−0.560**	−0.607***	−0.319
	(0.309)	(0.222)	(0.233)	(0.288)
PANEL D: Dependent variable: ST Welfare spending				
SC reservation	0.092	−0.233	−0.303	0.058
	(0.321)	(0.316)	(0.302)	(0.303)
ST reservation	0.705**	0.841**	0.864***	1.516***
	(0.303)	(0.353)	(0.326)	(0.359)

Notes: Robust standard errors are reported in parentheses. All regressions include (i) state and year fixed effects, (ii) state income per capita lagged one period, population density and election year dummy, and (iii) SC/ST census population share and SC/ST current population share as controls. Panel A includes as covariates SC/ST census population shares squared/100; panel B includes SC/ST one- and two-period lagged current population shares. Panel C includes a state-specific trend which increases by units of one in years in which reservation changes. The data are for the 16 main states, and the period 1960–1992. For Haryana, which split from Punjab in 1965, the data spans 1967–1992, and for Jammu-Kashmir 1962–1992. This gives 519 observations. Deviations are accounted for by missing data (on which, see the Data Appendix). Panel D regressions restrict the sample for each state to data for two years prior to an election in which the proportion reserved jurisdictions changed, the election year and two subsequent years. The number of observations is 187, except for ST spending for which it is 82.

* Significant at the 10-percent level.

** Significant at the 5-percent level.

*** Significant at the 1-percent level.

instrument for SC and ST current population share.[25]

In summary, the regressions reported in Table 8 control, in different ways, for arguments of the function which determines the extent of reservation enjoyed by a group in an Indian state. In every case, I continue to find a significant relationship between reservation and policy outcomes. Increases in both SC and ST reservation are associated with increases in targeted redistribution. In addition, increases in ST reservation lower education spending while raising overall government spending. Taken together, the results in this section suggest that changes in legislator identity in India have exerted a significant influence on state-level policies in a way that is consistent with a model of political competition in which parties have policy preferences, but cannot commit their candidates to policies.

[25] This specification checks for possible measurement error bias in the regression induced by the use of interpolated population data for inter-census years.

IV. Discussion

A number of countries, including the United States, have experimented with mandates that seek to enhance minority representation in the legislature. However, most of these experiments stop short of directly changing legislator identity. For instance, in the 1980's, U.S. courts succeeded in increasing African-American representation in the legislature by requiring states

Extending the Franchise: I

- Income is exogenous. Two types of individuals: rich and poor : $y^p, \mathrm{y}^{\mathrm{r}}$
- The share of total income of the rich is θ
- The share of the population who are rich is given by: $\delta < \frac{1}{2}$
- Average income is given by: $\bar{y}$

Extending the Franchise: II

- There are measure one individuals in the economy so that total income of the poor is given by : $(1-\delta)y^p = (1-\theta)\bar{y}$

- Similarly for the rich: $\delta y^r = \theta \bar{y}$

- We assume the aggregate income of the rich is greater than that of the poor so that:

$$\frac{(1-\theta)}{(1-\delta)}\bar{y} = y^p < \bar{y} < y^r = \frac{\theta}{\delta}\bar{y} \Rightarrow \theta > \delta$$

Extending the Franchise: III

- Taxes are collected and redistributed by the government. Initially the government is controlled by the elite (the rich). Government expenditures are revenue neutral and the tax rate is given by:

$$\tau$$

- The cost of tax collection is given by:

$$C(\tau)$$

- Total tax revenues are then given by:

$$T = \tau\left((1-\delta)y^p + \delta y^r\right) - C(\tau)\overline{y} = \left[\tau - C(\tau)\right]\overline{y}$$

Extending the Franchise: IV

- We can see from this that
  - Elites prefer no redistribution $\tau = 0$
  - Poor prefer equalization of wealth

- Utility is given by:

$$U^i = E_0 \sum_{t=0}^{\infty} \beta^t \hat{y}_t^i = E_0 \sum_{t=0}^{\infty} \beta^t \left((1-\tau_t) y^i + (\tau_t - C(\tau_t)) \bar{y} \right)$$

- Actions: Every period, the elites choose the tax rate; then, the poor decide whether or not to revolt.

Extending the Franchise: V

- Revolutions are always succesful; however, they are costly as output is destroyed. There are two states: high and low with:

$$1=\mu^{L}>\mu^{H}=\mu,\quad \mathrm{P}\left(\mu_{\mathrm{t}}=\mu\middle|h_{t}\right)=q$$

- If a revolution is succesful, the poor share total output so that utility is given by:

$$U^{i}=E_{0}\sum_{t=0}^{\infty}\beta^{t}\left[\left(1-\overline{\rho}_{t}\right)\left(\left(1-\tau_{t}\right)y^{i}+\left(\tau_{t}-C\left(\tau_{t}\right)\right)\overline{y}\right)+\overline{\rho}_{t}y_{R}^{i}\right]$$

- Where $\overline{\rho}_{t}$ is equal to 1 if there has been a revolution and 0 otherwise;
- The amount received by the poor after a revolution: $y_{R}^{i}=\frac{\left(1-\mu^{S}\right)\overline{y}}{1-\delta}$

Extending the Franchise: VI

- Timing of each stage of the game:
  - (1.) The state is revealed μ_t
  - (2.) The elites set the tax rate τ_t
  - (3.) The citizens decide whether or not to initiate a revolution $\overline{\rho}_t$

- A Markov-Perfect Equilibrium is a set of functions:

$$\tau^N : \{\mu_H, \mu_L\} \rightarrow [0,1]$$
$$\rho : \{\mu_H, \mu_L\} X [0,1] \rightarrow \{0,1\}$$

such that each agent maximizes U_t^i when making their choice at date t given the state of nature.

Extending the Franchise: VII

- We have to calculate the best response of the poor given the state and given a tax rate.

- Using backward induction, we have to calculate the best reponse of the elite given the state (for a given period). We do not have to condition on prior histories because we are restricting ourselves to Markov-Perfect Equilibria.

- So, we calculate value functions for the poor which are functions of both the state and the tax rate set by the elite as a function of the state: $V^p\left(\rho, \mu^S, \tau\left(\mu^S\right)\right)$

Extending the Franchise: VIII

- We will deviate slightly from the ordering of solution in backward induction and solve first for the strategy of the rich. Note that in the case of revolution, there value function is zero.

- Since in the low state, there is no credible threat of revolution, the rich will always set the tax rate equal to zero (their optimal choice). In the high state, they will set the tax rate equal to the minimal one which averts revolution if that is possible.

- Therefore, the optimal strategy for the rich is:

$$\tau^N : \mu_L \rightarrow \tau^N = 0$$

- $$\tau^N : \mu_H \rightarrow \tau^N = \tau^{\min}$$

Extending the Franchise: IX

- The value of a Revolution is independent of the tax rate and is equal to:

$$V^p\left(R,\mu^S,\tau\left(\mu^S\right)\right)=\sum_{k=t}^{\infty}\beta^{k-t}\frac{\left(1-\mu^S\right)}{\left(1-\delta\right)}\bar{y}=\frac{\left(1-\mu^S\right)}{\left(1-\delta\right)\left(1-\beta\right)}\bar{y}$$

- In particular, note that the value of Revolution when the state is low is zero, which is greater than the value of No Revolution when the state is low.

- Since, in the low state, the revolution is never credible, the only time consistent strategy for the rich is to set the tax rate equal to zero. Therefore, the value of No Revolution in the low state is:

$$V^p\left(N,\mu^L,\tau\left(\mu^S\right)\right)=y^p+\beta\left[qV^p\left(N,\mu^H,\hat{\tau}\left(\mu^H\right)\right)+(1-q)V^p\left(N,\mu^L,\hat{\tau}\left(\mu^L\right)\right)\right]$$

-

Extending the Franchise: X

- Now we calculate the value of No Revolution in the high state. First remember that total tax revenues are given by:

$$T = \left[\tau - C(\tau)\right]\bar{y}$$

- Since the population has measure 1, each person gets exactly the above amount plus their initial endowment minus taxes. Thus the value function of the poor is:

$$V^p\left(N, \mu^H, \hat{\tau}\left(\mu^H\right)\right) = y^p + \left[\hat{\tau}\left(\bar{y} - y^p\right) - C(\hat{\tau})\bar{y}\right] +$$
$$\beta\left[qV^p\left(N, \mu^H, \hat{\tau}\left(\mu^H\right)\right) + (1-q)V^p\left(N, \mu^L, \hat{\tau}\left(\mu^L\right)\right)\right]$$

Extending the Franchise: XI

- Turning to the Rich, their value functions are as follows.
  - The value of Revolution is always zero.
  - The value of Non-Revolution is given by:

$$V^r\left(N,\mu^S,\hat{\tau}\left(\mu^S\right)\right)=y^r+\left[\hat{\tau}\left(\overline{y}-y^r\right)-C(\hat{\tau})\overline{y}\right]+$$
$$\beta\left[qV^r\left(N,\mu^H,\hat{\tau}\left(\mu^H\right)\right)+(1-q)V^r\left(N,\mu^L,\hat{\tau}\left(\mu^L\right)\right)\right]$$

Extending the Franchise: XII

- Now we have two dynamic equations with two unknowns. We can solve for the two value functions (the value of Non-Rev. in the low state depends upon both the value in the low and the high state and the same for the value of Non-Rev. in the high state):

$$\begin{pmatrix} V^p(N,\mu^L) \\ V^p(N,\mu^H) \end{pmatrix} = \begin{pmatrix} y^p \\ y^p + \hat{\tau}\left(\bar{y} - y^p\right) - C(\hat{\tau})\bar{y} \end{pmatrix} + \beta \begin{bmatrix} q & 1-q \\ q & 1-q \end{bmatrix} \begin{bmatrix} V^p(N,\mu^H) \\ V^p(N,\mu^L) \end{bmatrix}$$

- Similarly, we have a set of value functions for the rich:

$$\begin{pmatrix} V^r(N,\mu^L) \\ V^r(N,\mu^H) \end{pmatrix} = \begin{pmatrix} y^r \\ y^r + \hat{\tau}\left(\bar{y} - y^r\right) - C(\hat{\tau})\bar{y} \end{pmatrix} + \beta \begin{bmatrix} q & 1-q \\ q & 1-q \end{bmatrix} \begin{bmatrix} V^r(N,\mu^H) \\ V^r(N,\mu^L) \end{bmatrix}$$

-

Extending the Franchise: XIII

- We already know that in the low state, there will never be a revolution. Therefore, we solve for the value of No Revolution in the high state:

$$V^p(N,\mu^H)=\frac{y^p+(1-\beta(1-q))\left[y^p+\hat{\tau}\left(\bar{y}-y^p\right)-C(\hat{\tau})\bar{y}\right]}{1-\beta}$$

- We compare this with the value of Revolution in the high state to figure out whether (as a function of the tax rate) there will be a revolution in the high state:

$$\frac{y^p+(1-\beta(1-q))\left[y^p+\hat{\tau}\left(\bar{y}-y^p\right)-C(\hat{\tau})\bar{y}\right]}{1-\beta}>\frac{(1-\mu)\bar{y}}{(1-\delta)(1-\beta)}$$

-

Extending the Franchise: XIV

- In particular, a revolution will not occur if given that the rich implement the optimal tax rate for the poor in the high state, the poor still prefer to revolt:

$$\frac{y^p + (1-\beta(1-q))\left[y^p + \tau^p\left(\bar{y} - y^p\right) - C\left(\tau^p\right)\bar{y}\right]}{1-\beta} > \frac{(1-\mu)\bar{y}}{(1-\delta)(1-\beta)}$$

- With some manipulation of algebra, this reduces to the following condition:

$$\mu > \theta - (1-\beta(1-q))\left[\tau^p(\theta-\delta) - (1-\delta)C\left(\tau^p\right)\right]$$

- Notice that revolution is more likely when (1.) people are patient and (2.) the probability of a credible threat of revolution is low, and notice that (3.) an increase in the share of the population who are poor has an ambiguous effect on the likelihood of revolution.

Extending the Franchise: XIVB (mathematical note)

$$\frac{y^p + (1-\beta(1-q))\left[\tau^p\left(\bar{y} - y^p\right) - C\left(\tau^p\right)\bar{y}\right]}{1-\beta} > \frac{(1-\mu)\bar{y}}{(1-\delta)(1-\beta)}$$

$$\Rightarrow (1-\delta)y^p + (1-\delta)(1-\beta(1-q))\left[y^p + \tau^p\left(\bar{y} - y^p\right) - C\left(\tau^p\right)\bar{y}\right] > (1-\mu)\bar{y}$$

$$\Rightarrow (1-\theta)\bar{y} + (1-\delta)(1-\beta(1-q))\left[\tau^p\left(\frac{(1-\delta)}{(1-\delta)}\bar{y} - \frac{(1-\theta)\bar{y}}{(1-\delta)}\right) - C\left(\tau^p\right)\bar{y}\right] > (1-\mu)\bar{y}$$

$$\Rightarrow (1-\theta) + (1-\delta)(1-\beta(1-q))\left[\tau^p\left(\frac{(1-\delta)}{(1-\delta)} - \frac{(1-\theta)}{(1-\delta)}\right) - C\left(\tau^p\right)\right] > (1-\mu)$$

$$\Rightarrow (1-\theta) + (1-\delta)(1-\beta(1-q))\left[\tau^p\left(\frac{\theta-\delta}{1-\delta}\right) - C\left(\tau^p\right)\right] > (1-\mu)$$

$$\Rightarrow \mu > \theta - (1-\beta(1-q))\left[\tau^p(\theta-\delta) - (1-\delta)C\left(\tau^p\right)\right]$$

Extending the Franchise: XV

- Also, note that when the value of Revolution is below the value of No Revolution even with a tax rate of zero in the high state, then the elite will always set the tax rate equal to zero. This will happen when:

$$\frac{y^p}{1-\beta} > \frac{(1-\mu)\bar{y}}{(1-\delta)(1-\beta)}$$

$$\Leftrightarrow \frac{(1-\theta)\bar{y}}{(1-\delta)(1-\beta)} > \frac{(1-\mu)\bar{y}}{(1-\delta)(1-\beta)}$$

$$\Leftrightarrow \mu > \theta$$

- In other words, when the fraction of output lost from revolution is larger than the share of income accruing to the rich, the poor's threats are never credible and so the elite do not feel a need to redistribute.
-

Extending the Franchise: XVI

- We now have a theorem: there exists a unique Markov-Perfect Equilibrium such that the rich follow (uniqueness is not hard to show):

$$\tau^N : \mu_L \rightarrow \tau^N = 0$$

$$\tau^N : \mu_H \rightarrow \tau^N = \tau^{\min}$$

where $\tau^{\min} = \max\left[\tau^p, \tau : \frac{y^p + (1-\beta(1-q))\left[y^p + \tau\left(\bar{y} - y^p\right) - C(\tau)\bar{y}\right]}{1-\beta} > \frac{(1-\mu)\bar{y}}{(1-\delta)(1-\beta)}\right]$

and the poor follow:

$$\sigma^N : \mu_L \rightarrow \sigma^{NR}$$

$$\sigma^N : \mu_H \rightarrow \sigma^{NR} \text{ if } \mu > \theta - (1-\beta(1-q))\left[\tau^p(\theta-\delta) - (1-\delta)C\left(\tau^p\right)\right] \& \tau \geq \tau^{\min}$$

- $\mu_H \rightarrow \sigma^R \text{ if } \mu \leq \theta - (1-\beta(1-q))\left[\tau^p(\theta-\delta) - (1-\delta)C\left(\tau^p\right)\right]$

Extending the Franchise: XVII

- Robustness: One can imagine that revolution can always be avoided by allowing for non-Markovia strategies like trigger strategies. The outcome that minimizes the chance of revolution is one where the elite offer a high level of redistribution in the low states under the threat of the poor revolting in the next high state following an elite deviation.

- If we enrich the strategy spaces by using general subgame perfection, we reduce the proportion of the parameter space where revolution occurs. However, unless discounting disappears, there will still be portion of the remainder of the parameter space where revolution will occur along the equilibrium path.

Extending the Franchise: XVIII

- Four reasons for franchise extension:
  - Enlightenment, Change of Values
  - Political Party Competition (Disraeli versus Gladstone)
  - Middle Class Drive (many different theories starting with Barrington Moore)
  - Conflict Between Insiders and Outsiders: Acemoglu and Robinson are most in this tradition (though somewhat in the Barrington Moore tradition)

Extending the Franchise: XIX

- We now add two more stages to the repeated game. The new timeline is:
  - (1.) The state is revealed.
  - (2.) The elite decide whether or not to use repression (binary variable denoted by). If the elite use repression, revolution is impossible however repression is costly. The elites then set a tax rate.
  - (3.) If the elite do not use repression, they can extend the franchise and the tax rate is set by the media voter (who is poor).
  - (4.) The poor decide whether or not to initiate a revolution. If they initiate a revolution, they set the tax rate forever. If they do not initiate a revolution, they receive payoffs based upon the tax rate set by the elite.

Extending the Franchise: XX

- Now the strategies for the rich and the poor are given by:

$$Rich:$$

$$\tau^N : \{\mu_H, \mu_L\} \to [0,1]$$

$$\omega : \{\mu_H, \mu_L\} \to \{0,1\}$$

$$\phi : \{\mu_H, \mu_L\} \to \{0,1\}$$

$$Poor:$$

$$\rho : \{\mu_H, \mu_L\} X [0,1] X \{0,1\} X \{0,1\} \to \{0,1\}$$

Extending the Franchise: XXI

- The tradeoffs for the poor do not change in the new setup. So, we do not need to calculate new value functions for them. The only thing we need to calculate is their action under democracy extension. However, we already know they will choose:

$$\tau = \tau^{p}$$

- For the rich, they have two additional actions: repression and extension of democracy. In the case where temporary redistribution is sufficient to forestall revolution, the rich will use temporary redistribution (because it will certainly be less costly than either extension or repression). Therefore, we already know that the elite will provide temporary redistribution in the high state and no redistribution in the low state and the poor will not revolt when:

$$\mu > \theta$$

- We now must calculate the value of repression and value of extension of the franchise. We will compare these with the value of temporary redistribution in the high state (when the above condition is not satisfied).

- Note: we are ignoring here the possibility that the poor will revolt even with a franchise extension. This is possible because the poor can drive the utility of the rich down to zero (which can not be done with anonymous taxation and redistribution). We will ignore this possibility.

Extending the Franchise: XXII

- Under democracy extension, the poor will implement their optimal tax policy (since the median voter is poor) forever. Thus the value for the rich is:

$$V^r(D) = \frac{y^r + \tau^p\left(\overline{y} - y^r\right) - C(\tau)\overline{y}}{1-\beta}$$

- The value of repression is given by the following (assuming a stationary strategy):

$$V^r(O,\mu^H) = ky^r + \beta\left[qV^r\left(O,\mu^H\right) + (1-q)V^r\left(\mu^L\right)\right]$$

- Similarly, in the low state, we get:

$$V^r(O,\mu^L) = y^r + \beta\left[qV^r\left(O,\mu^H\right) + (1-q)V^r\left(\mu^L\right)\right]$$

Extending the Franchise: XXIII

- We solve these two equations simultaneously to get:

$$V^r(O) = \frac{y^r - (1 - \beta(1-q))ky^r}{1-\beta}$$

- So the value of opression is just the net present discounted value of the rich income minus the expected state-contingent costs of repression.

- Now, we compare the values of repression and democratization as well as repression and temporary redistribution.

Extending the Franchise: XXIV

- First we compare extension of democracy with repression. Repression will occur when:

$$V^r(O) > V^r(D) \Leftrightarrow \frac{y^r - (1-\beta(1-q))ky^r}{1-\beta} > \frac{y^r + \tau^p\left(\bar{y} - y^r\right) - C(\tau)\bar{y}}{1-\beta}$$

- This defines a minimum k such that for k higher, the elites will choose enfranchisement and for k lower repression:

$$\bar{k} = \frac{1}{\theta(1-\beta(1-q))}\left(\delta C\left(\tau^p\right) - \tau^p(\delta - \theta)\right)$$

- Similarly, we compare repression with temporary redistribution (it is clear that temporary redistribution is always preferable to the elites - when possible - to democratization)

Extending the Franchise: XXV

- Repression will occur when in lieu of temporary redistribution when:

$$V^r(O,\mu^H) > V^r(N,\mu^H,\hat{\tau})$$

- This also defines a minimum k such that for k higher, the elites will choose temporary redistribution over repression and for k lower, they will always choose repression:

$$k^* = \frac{1}{\theta}\left(\delta C\left(\tau^{\min}\right) - \tau^{\min}\left(\delta - \theta\right)\right)$$

Extending the Franchise: XXVI

- We now have a theorem: there exists a unique Markov-Perfect Equilibrium such that the rich follow (uniqueness is not hard to show):

  $\theta \leq \mu$ the revolution constraint is not binding and the rich never redistribute, enfranchise, or repress; also, the poor never revolt.

$\theta > \mu$

- (1.) $\mu \geq \mu^* = \theta - (1-\beta(1-q))\left[\tau^p(\theta-\delta) - (1-\delta)C(\tau^p)\right],\ \mathrm{k} \geq \mathrm{k}^*$

  Repression is costly but temporary redistribution can forestall revolution.

- (2.) $\mu \geq \mu^*,\ \mathrm{k} < \mathrm{k}^*$ or $\mu < \mu^*,\ \mathrm{k} < \bar{\mathrm{k}}$

  There are temporary redistributive schemes which forestall revolution but repression is cheaper or revolution is credible for all taxatation schemes and repression is preferred to enfranchisement.

- (3.) $\mu \geq \mu^*,\ \mathrm{k} \geq \bar{\mathrm{k}}$

  Revolution is credible even for the highest tax rate in the high state and repression is too costly.

Extending the Franchise: XXVII

- Notice that: democracy arises when $\mu^* > \mu$ and $\mathrm{k} < \mathrm{k}^*$

- But $\frac{\partial \bar{k}}{\partial \theta} > 0$ and $\frac{\partial \theta^*}{\partial \theta} > 0$. This means that democracy does not emerge when societies are too unequal or too equal. On the one hand, inequality makes revolution credible (the mu effect). On the other hand, inequality makes repression desirable (the k effect). This is somewhat similar in spirit to Barrington Moore.

- Similar to what we found before, an increase in q makes franchise extension less likely (through the mu effect). It makes temporary redistribution more frequent, decreasing the credibility of revolt.

- These results are all qualitatively robust to using Subgame Perfection rather than Markov Perfection as an equilibrium concept.

Extending the Franchise: XXVIII

- Problems/Questions:
  - Why can't the elite commit to economic redistribution but can commit to retaining the franchise extension?
  - Does this theory apply to extension towards women? Ethnic minorities? Why? Why not?
  - Why doesn't redistribution happen earlier (i.e. the emergence of the welfare state coincide more with the extension of the franchise)?
  - Can we interpret the differential cost of revolution across states as a coordination cost (as in a global game)?

Franchise Extension and Special Interests: I

- Persico and Lizzeri (QJE, May 2004)

- They claim that taxation for public expenditure started well after extension of the franchise (1832, 1867, 1884)

- Their reason for extension of the franchise is to reduce inefficient expenditures on vote buying by increasing the costliness of vote-buying.

Franchise Extension and Special Interests: II

- Simple example of mechanism:
  - Suppose the public desires a public good.
  - There are 2 parties. A moves first then B.
  - The public good is worth $2<G<4$ where utility is linear in money.
  - The elite is half the population, which has measure 1. Therefore, a measure ½ votes.
  - Suppose A supports the public good. Then party B can offer G+e dollars where e is small to 1/G people. This is certainly at least ¼ of the population and ½ of the voters (given that $G<4$). Thus, party B will win.

Franchise Extension and Special Interests: III

- Simple example of mechanism:
  - By promissing redistribution, party A can lose with up to zero percent of the voteshare (because party B can offer epsilon more than party A to almost everyone); by promissing the public good, it assure itself of almost ½ of the voteshare.

  - Now consider extension of the franchise. Everyone now votes so that giving G+e to 1/G people is less than ½ of the vote. Now it is less cotsly to provide the public good (too costly to vote buy).

Franchise Extension and Special Interests: IV

- Why doesn’t extension happen immediately as opposed to in the 19th century?

- Note that if interest groups can get special tax exclusions, you can have under-taxation.