

Lecture 5:

Political Institutions and Policy Outcomes

- One the key areas of empirical political economy is to understand the impact that institutions have on policy outcomes
- There are basically two kinds testing grounds for this:
 - comparison across countries
 - comparisons within countries
- The question is how to proceed.

General Issues

Components of the Policy Process

- – **Policy Making Institutions** (I_{1st}).
 - * For cross-country situations: bicameralism, presidentialism
 - * For U.S.: Restrictions on the governor's and legislators' freedoms, including tax and expenditure limitations; super-majority requirements for tax increases; the governor's possession of a line item veto; rules for appointing regulators and judges; rules governing whether a state permits direct democracy, such as citizens' initiatives; and rules on whether governors face term limits.

– **Electoral Institutions** (I_{2st}).

- * For cross-country situations: majoritarian versus parliamentary system, size of districts
- * For U.S.: Rules affecting who can run for office and who can vote, including those affecting the costs of registering to vote (such as poll taxes and literacy tests); those regulating campaign contributions in state elections; and those governing the conduct of primary elections.

Preferences

- – Virtually all approaches to political processes take the preferences of voters and parties as given, and we shall do so here.
- Suppose then that preferences of voters are defined over a policy space $x_{st} \in \mathcal{A}_t$.
- This is a potentially wide-ranging description of all policies that can be controlled or influenced by state governments in the U.S..
- Suppose also that heterogeneity across the voting population can be parametrized for voter i by $\theta_i \in \Theta$.
- Preferences can be written as:

$$v(x_{st}, y_{st}, \theta_i)$$

where y_{st} is a vector of state demographic and economic characteristics that affect policy preferences.

- – Let Θ_{st} parametrize the distribution of voter tastes in the population in state s at date t .
- Party preferences:

$$V(x_{st}, \chi_{jst}, y_{st}) \text{ for } j \in \{P\},$$

where χ_{jst} parametrizes the distribution of party members and/or influential party elites.

The Post-Election Policy Process

- To describe the post-election policy process, let ℓ_{st} be a variable that characterizes the political outcomes in state s at time t .
- There is a legislative outcome function:

$$x_{st} = G(\ell_{st}, X_{Dst}, X_{Rst}, I_{1st}, y_{st}) \quad (1)$$

where

- – X_{jst} be the “platform” of party j in state s at time t , and

- I_{1st} are the policy making institutional variables
- The function $G(\cdot)$ is intended to capture, in reduced-form, a potentially complicated policy process such as a legislative bargaining model or a model of the separation of powers between the executive and the legislature.
- Consider the following empirical model for the kth policy in state s at time t of the form:

$$x_{kst} = \alpha_{ks} + \beta_{kt} + \omega_k I_{1st} + \gamma^k y_{st} + \psi^k \ell_{st} + d_k X_{Dst} + r_k X_{Rst} + \eta_{kst}, \quad (2)$$

where α_{ks} is a state indicator variable and β_{kt} is a year indicator. The focus is on how I_{1st} affects the outcome of interest.

- For OLS yield an unbiased estimate of ω_k , all relevant elements of ℓ_{st} need to be included, as they are likely to be correlated with I_{1st} and that (X_{Dst}, X_{Rst}) must either be fully observed or be uncorrelated with I_{1st} .
- Reduced for model:

$$x_{kst} = \alpha_{ks} + \beta_{kt} + \omega_k I_{1st} + \gamma^k y_{st} + \eta_{kst}$$

which gives an unbiased estimate of the direct effect of I_{1st} on policy outcomes ex post only if I_{1st} have no impact on ℓ_{st} .

Elections

- Let

$$P(\ell; X_{Dst}, X_{Rst}, c_{Dst}, c_{Rst}, y_{st}, I_{2st}, H_{st}) \quad (3)$$

denote the probability that a particular political outcome is ℓ , when the platforms of the parties are (X_{Dst}, X_{Rst}) , the candidates' characteristics are (c_{Dst}, c_{Rst}) , the history of policy is H_{st} and the institutions thought to affect the electoral process are I_{2st} .

- The role of the variable H_{st} is potentially quite important and surfaces, in particular, in models of political agency relationships as introduced by Barro (1973) and Ferejohn (1986).

- Let w_{st} be the incumbent's advantage over the challenger, with

$$w_{st} = a_s + b_t + \zeta I_{2st} + \iota y_{st} + \mu H_{st} + \rho_{st} \quad (4)$$

where a_s is a state fixed effect and b_t is a year effect. Then we could suppose that

$$\ell_{st} = \begin{cases} = 1 & \text{if } w_{st} \geq 0 \\ 0 & \text{otherwise.} \end{cases} \quad (5)$$

This kind of model can help to pinpoint policies for which the governor is held to account, which are those elements of H_{st} that influence reelection. It can also be used to see whether reelection rates are dependent on the institutions within a state.

Party Strategies

- Party preferences induced by (3) be denoted:

$$W \left(X_{Dst}, X_{Rst}, c_{Dst}, c_{Rst}, y_{st}, I_{st}, \chi_{jst}, H_{st} \right) \text{ for } j \in \{D, R\}. \quad (6)$$

- The strategic problem facing parties at election times is to select platforms and candidates to maximize these payoffs.
- For the purposes of taking these relationships to the data, it would typically be assumed that a Nash equilibrium exists and is unique.

- The outcomes are now party platforms and candidate lists.

Political Outcomes

- Given a set of party strategies, the electoral process (3) gives rise to a particular realization of ℓ_{st} .
- This could be modeled empirically for the k th political outcome, as follows:

$$\ell_{kst} = \zeta_{ks} + \xi_{kt} + \lambda^k I_{st} + \phi^k y_{st} + \nu_{kst}, \quad (7)$$

where ζ_{ks} is a state indicator, ξ_{kt} is a year indicator.

- In (3), political outcomes were allowed to depend on political and policy history.

- However, in the empirical work to date, estimation of (7) has rarely included history variables. In principle, this could be done by estimating

$$\ell_{kst} = \zeta_{ks} + \xi_{kt} + \lambda^k I_{st} + \phi^k y_{st} + \kappa^k H_{st} + \nu_{kst}. \quad (8)$$

- In practice, H_{st} can be represented by lagged policy and political control.

Policy Outcomes

- Reduced-form approach:

-

$$x_{kst} = \alpha_{ks} + \beta_{kt} + \omega_k I_{st} + \gamma^k y_{st} + \eta_{kst}. \quad (9)$$

- Again, history is generally overlooked in the estimation of policy equations.
- But we could have

$$x_{kst} = \alpha_{ks} + \beta_{kt} + \omega_k I_{st} + \gamma^k y_{st} + \tau_k H_{st} + \eta_{kst}. \quad (10)$$

The variable H_{st} could again include lagged policy and political controls, raising similar econometric issues to those that arise in estimating (8).

Institutional Change

- Consider

$$\begin{aligned} & \widehat{W} \left(y_{st}, I_{st}, \chi_{jst}, H_{st} \right) \\ &= W \left(X_{Dst}^*, X_{Rst}^*, c_{Dst}^*, c_{Rst}^*, y_{st}, I_{st}, \chi_{jst}, H_{st} \right) \\ & \text{for } j \in \{D, R\} \end{aligned}$$

where the $*$ denotes that we are considering the equilibrium values of platforms and candidate choices which themselves depend upon institutions and other exogenous variables.

- Suppose that a party is in office and, by incurring some costs, could change the institutions that affect future payoffs. Then:

$$I_{jst}^* = \arg \max_{I_{st}} = \widehat{W} \left(y_{st}, I_{st}, \chi_{jst}, H_{st} \right) .$$

- From the standpoint of empirical modeling, institutions can be modeled in the same way as policy and legislative outcomes.
- Consider the following:

$$I_{est} = \alpha_{es} + \beta_{et} + \gamma_e H_{st} + \sigma_e w_{st} + \omega_{est}. \quad (11)$$

Summary

- The effect of policy making institutions I_{1st} on the *ex post* policy process as represented by equation (2).
- The effect of institutions I_{2st} on the electoral process as represented by equation (4).
- The effect of institutions (mainly electoral institutions I_{2st}) on political outcomes as represented by equation (7).
- The effect of institutions, I_{st} , on policy as represented by the equation (9).

- The process determining institutional change as represented by equation (11).

Persson and Tabellini

- They have an ambitious research program looking at differences between different systems on policy outcomes:
- Main comparisons which I will focus on here are:
 - Majoritarian versus Proportional Systems
 - Presidential versus Parliamentary systems
- They have recently published a whole book on this which is worth looking at.

- Here, I will focus on their article which is coming out in the AER.

**Table 1 Constitutions, policy outcomes and covariates:
Cross sectional data for 85 countries 1990-98**

	(1)	(2)	(3)	(4)	(5)	(6)
	<i>maj</i> =1	<i>maj</i> =0	<i>p</i> (1,2)	<i>pres</i> =1	<i>pres</i> =0	<i>p</i> (3,4)
<i>cgexp</i>	25.6 (8.2)	30.8 (11.3)	0.03	22.2 (7.2)	33.3 (10.0)	0.00
<i>ssw</i>	4.7 (5.4)	10.1 (6.6)	0.00	4.8 (4.6)	9.9 (7.0)	0.00
<i>lyp</i>	8.1 (1.2)	8.6 (0.8)	0.04	7.9 (0.9)	8.7 (0.9)	0.00
<i>trade</i>	83.7 (59.9)	75.6 (37.5)	0.44	62.5 (27.5)	89.1 (54.2)	0.01
<i>prop65</i>	6.7 (4.4)	9.6 (4.9)	0.01	5.6 (3.5)	10.3 (4.8)	0.00
<i>age</i>	0.22 (0.25)	0.20 (0.20)	0.77	0.16 (0.23)	0.24 (0.21)	0.09
<i>gastil</i>	2.7 (1.4)	2.3 (1.1)	0.08	3.1 (1.2)	2.0 (1.1)	0.00

Mean values by constitutional rules; standard deviations in brackets

p(x,y) is the probability of falsely rejecting equal means across groups corresponding to columns x and y, under the assumption of equal variances.

Table 2 Size of government and constitutions: OLS estimates

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dep. var.	<i>cgexp</i>	<i>cgexp</i>	<i>cgrev</i>	<i>dft</i>	<i>cgexp</i>	<i>cgexp</i>	<i>cgexp</i>
<i>pres</i>	-5.18 (1.93)***		-5.00 (2.47)**	0.16 (1.15)	-2.65 (2.70)	-7.75 (2.70)***	-6.46 (2.98)**
<i>maj</i>	-6.32 (2.11)***		-3.68 (2.15)*	-3.15 (0.87)***	-1.45 (2.32)	-7.94 (3.74)**	-6.33 (2.48)**
<i>propres</i>		-6.56 (3.01)**					
<i>majpar</i>		-6.96 (3.72)*					
<i>majpres</i>		-10.37 (3.03)***					
<i>pres_newdem</i>						3.50 (2.72)	
<i>maj_newdem</i>						3.58 (4.03)	
<i>newdem</i>						-4.08 (2.23)*	
<i>pres_baddem</i>							2.42 (4.16)
<i>maj_baddem</i>							2.06 (5.97)
<i>baddem</i>							-5.73 (3.46)
<i>F-test (pres)</i>		0.43				4.01**	1.40
<i>F-test (maj)</i>						3.18*	0.66
Sample	90s	90s	90s	90s	60-73	90s	90s
Obs.	80	80	76	72	42	80	80
R2	0.71	0.70	0.68	0.50	0.79	0.72	0.70

Robust standard errors in parentheses : * significant at 10%; ** significant at 5%; *** significant at 1%

All regressions include our standard controls, *lyp*, *lpop*, *gastil*, *age*, *trade*, *prop65*, *prop1564*, *federal*, and *oecd*, plus a set of indicator variables for continental location and colonial origin, except that *age* is missing in col 5-6, while *gastil* is missing in col 7 and replaced by *polity* in col 5.

F-test (pres) refers to tests of the hypotheses that the coefficient for *propres* is equal to the difference between the coefficients for *majpres* and *majpar* (col 2), the sum of the coefficients for *pres* and *pres_newdem* is zero (col 6), and the sum of the coefficients for *pres* and *pres_baddem* is zero (col 7). *F-test(maj)* refers to the corresponding tests with regard to *maj* (cols 6 and 7).

**Table 3 Size of government and constitutions:
Instrumental-variable, Heckman and Matching Estimates**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dep. var.	<i>cgexp</i>	<i>cgexp</i>	<i>cgexp</i>	<i>cgexp</i>	<i>cgexp</i>	<i>cgexp</i>	<i>cgexp</i>
<i>pres</i>	-5.29 (2.18)**	-11.52 (4.54)**	-6.51 (3.71)*	-4.22 (3..99)	-5.89 (3.02)*	-3.23 (2.74)	-7.45 (2.34)***
<i>maj</i>	-6.21 (2.82)**	-6.77 (1.98)***	-4.83 (3.19)	-4.18 (3.17)	-4.81 (3.41)	-5.34 (2.73)*	-5.59 (2.61)**
Conts & Cols	Yes	Yes	<i>col_uka</i>	<i>col_uka, laam</i>			
Sample	90s	90s	90s	90s	90s	90s	90s
Endogenous selection	<i>maj</i>	<i>pres</i>	<i>pres</i> <i>maj</i>	<i>pres</i> <i>maj</i>	<i>pres</i> <i>maj</i>	<i>pres</i> <i>maj</i>	<i>pres</i> <i>maj</i>
Estimation	Heckman ML	Heckman ML	2SLS	2SLS	Stratification	Nearest neighbor	Kernel
Rho	0.05 (0.29)	0.62 (0.33)					
Chi-2			3.29	2.23			
Adj. R2			0.59	0.59			
Obs.	75	75	75	75	66(<i>pres</i>) 70(<i>maj</i>)	66(<i>pres</i>) 70(<i>maj</i>)	66(<i>pres</i>) 70(<i>maj</i>)

Standard errors in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%.

Always included in second-stage specification in cols 1-4: *age, lyp, trade, prop1564, prop65, gastil, federal, oecd, lpop*; Conts & Cols refer to indicator variables for continental location and colonial history.

Specification of constitution selection in Heckman procedure in cols 1-2 includes: *engfrac, eurfrac, lat01, avelf, lpop, laam*; Rho is the estimated correlation coefficient between the error terms in the first and second stage. Estimation is by maximum likelihood.

First-stage specification of 2SLS in cols 3-4 includes (see Table A2, appendix): for *maj*: *con2150, con5180, con81, engfrac, eurfrac, lpop, avelf*; for *pres*: *con2150, con5180, con81, engfrac, eurfrac, lat01, age*; Chi-2 is the test statistic for rejecting the over-identifying restrictions implied by exogenous (additional) instruments; critical value chi-2 (5,0.05) = 11.07.

Propensity-score logit estimation underlying cols 5-7 includes: *lyp, prop65, gastil, federal, col_uka, laam*; estimates of the constitutional effects in these columns are carried out separately rather than jointly; numbers at bottom indicate observations used in estimation (observations outside the common support for the propensity score of each constitutional feature deleted).

Table 4 Composition of government and constitutions: OLS estimates

	(1)	(2)	(3)	(4)	(5)
Dep. var.	<i>ssw</i>	<i>ssw</i>	<i>ssw</i>	<i>ssw</i>	<i>ssw</i>
<i>pres</i>	-2.24 (1.11)**		-0.25 (2.06)	-5.47 (1.19)***	-4.28 (1.30)***
<i>maj</i>	-2.25 (1.25)*		-1.02 (1.36)	-2.66 (1.52)*	-3.03 (1.50)**
<i>propres</i>		-3.22 (1.74)*			
<i>majpar</i>		-3.14 (2.18)			
<i>majpres</i>		-3.91 (2.41)			
<i>pres_newdem</i>				4.97 (1.65)***	
<i>maj_newdem</i>				1.74 (1.77)	
<i>newdem</i>				-5.36 (1.69)***	
<i>pres_baddem</i>					5.61 (2.00)***
<i>maj_baddem</i>					3.67 (1.62)**
<i>baddem</i>					-4.24 (1.75)**
<i>F-test (pres)</i>		0.83		0.17	0.83
<i>F-test (maj)</i>				0.65	0.19
Sample	90s	90s	72-77	90s	90s
Obs.	69	69	42	69	69
R2	0.81	0.81	0.77	0.84	0.82

Robust standard errors in parentheses : * significant at 10%; ** significant at 5%; *** significant at 1%

All regressions include our standard controls, *lyp*, *gastil*, *age*, *prop65*, *federal*, and *oecd*, plus a set of indicator variables for continental location and colonial origin, except that *age* is missing in col 3-4, while *gastil* is missing in col 5 and replaced by *polity_gt* in col 3.

F-test(pres) refers to tests of the hypotheses that the coefficient for *propres* is equal to the difference between the coefficients for *majpres* and *majpar* (col 2), the sum of the coefficients for *pres* and *pres_newdem* is zero (col 4), and the sum of the coefficients for *pres* and *pres_baddem* is zero (col 5). *F-test(maj)* refers to the corresponding tests with regard to *maj* (cols 4 and 5).

**Table 5 Composition of government and constitutions:
Instrumental variables, Heckman and Matching Estimates**

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Dep. var.	<i>ssw</i>	<i>ssw</i>	<i>ssw</i>	<i>ssw</i>	<i>ssw</i>	<i>ssw</i>	<i>ssw</i>
<i>pres</i>	0.20 (3.27)	-2.38* (1.33)	0.75 (2.00)	0.49 (2.14)	-3.06 (2.67)	-2.28 (1.79)	-3.79 (2.36)
<i>maj</i>	-2.05* (1.12)	-4.27 (1.79)**	-3.21 (1.61)*	-3.21 (1.62)*	-1.85 (1.91)	-1.90 (1.67)	-3.46 (1.84)*
Conts & Cols	Yes	Yes	<i>col_uka</i>	<i>col_uka laam</i>			
Sample	90s	90s	90s	90s	90s	90s	90s
Endogenous	<i>pres</i>	<i>maj</i>	<i>pres</i>	<i>pres</i>	<i>pres</i>	<i>pres</i>	<i>pres</i>
Selection			<i>maj</i>	<i>maj</i>	<i>maj</i>	<i>maj</i>	<i>maj</i>
Estimation	Heckman 2-step	Heckman 2-step	2SLS	2SLS	Stratification	Nearest neighbor	Kernel
Rho	-0.46	0.59					
Chi-2			9.53*	9.98*			
Adj. R2			0.78	0.78			
Obs.	64	64	64	64	64(<i>pres</i>) 70(<i>maj</i>)	64(<i>pres</i>) 70(<i>maj</i>)	64(<i>pres</i>) 70(<i>maj</i>)

Standard errors in parentheses; * significant at 10%; ** significant at 5%; *** significant at 1%.

Always included in second-stage specification in cols 1-4: *age*, *lyp*, *trade*, *prop1564*, *prop65*, *gastil*, *federal*, *oecd*, *lpop*; Conts & Cols refer to indicator variables for continental location and colonial history.

First-stage specification of Heckman procedure in cols 1-2 includes: *engfrac*, *eurfrac*, *lat01*, *avelf*, *lpop*, *laam*; Rho is the estimated correlation coefficient between the error terms in the first and second stage.

First-stage specification of 2SLS in cols 3-4 includes (see appendix): for *maj*: *con2150*, *con5180*, *con81*, *engfrac*, *eurfrac*, *lpop*, *avelf*;

for *pres*: *con2150*, *con5180*, *con81*, *engfrac*, *eurfrac*, *lat01*, *age*; Chi-2 is the test statistic for rejecting the over-identifying restrictions implied by exogenous (additional) instruments; critical value chi-2 (5,0.05) = 11.07.

Propensity-score logit estimation underlying cols 5-7 includes: *lyp*, *prop65*, *gastil*, *federal*, *col_uka*, *laam*; estimates of the constitutional effects in these columns are carried out separately rather than jointly; numbers at bottom indicate observations used in estimation (observations outside the common support for the propensity score of each constitutional feature deleted).

Table A1 Electoral rules and forms of government in the 1990s

Country	<i>maj</i>	<i>pres</i>	Country	<i>maj</i>	<i>pres</i>	Country	<i>maj</i>	<i>pres</i>	Country	<i>maj</i>	<i>pres</i>
Argentina	0	1	Finland	0	0	Netherlands	0	0	Trinidad&Tob	1	0
Australia	1	0	France	1	0	New Zealand	1	0	Turkey	0	0
Austria	0	0	Gambia	1	1	Nicaragua	0	1	USA	1	1
Bahamas	1	0	Germany	0	0	Norway	0	0	Uganda	1	1
Bangladesh	1	0	Ghana	1	1	Papua N Guinea	1	0	UK	1	0
Barbados	1	0	Greece	0	0	Pakistan	1	1	Ukraine	1	0
Belarus	1	1	Guatemala	0	1	Paraguay	0	1	Uruguay	0	1
Belgium	0	0	Honduras	0	1	Peru	0	1	Venezuela	0	1
Belize	1	0	Hungary	0	0	Philippines	1	1	Zambia	1	1
Bolivia	0	1	Iceland	0	0	Poland	0	0	Zimbabwe	1	1
Botswana	1	0	India	1	0	Portugal	0	0			
Brazil	0	1	Ireland	0	0	Romania	0	0			
Bulgaria	0	0	Israel	0	0	Russia	0	1			
Canada	1	0	Italy	0	0	Senegal	0	0			
Chile	1	1	Jamaica	1	0	Singapore	1	0			
Colombia	0	1	Japan	1	0	Slovak Rep	0	0			
Costa Rica	0	1	Latvia	0	0	South Africa	0	0			
Cyprus	0	1	Luxembourg	0	0	South Korea	0	1			
Czech Rep.	0	0	Malawi	1	1	Spain	0	0			
Denmark	0	0	Malaysia	1	0	Sri Lanka	0	1			
Dominican Rep	0	1	Malta	0	0	St.Vin&Gren	1	0			
Ecuador	0	1	Mauritius	1	0	Sweden	0	0			
El Salvador	0	1	Mexico	0	1	Switzerland	0	1			
Estonia	0	0	Namibia	0	1	Taiwan	0	0			
Fiji	0	0	Nepal	1	0	Thailand	1	0			

Classifications follow criteria described in the text: exclusive reliance on plurality rule in (lower house) legislative elections are coded *maj* =1, other countries *maj* = 0; countries in which the executive is not accountable to the legislature through a confidence procedure are coded *pres* = 1, others *pres* =0 (see Persson and Tabellini, 2003 for a discussion of borderline cases). For Fiji, Japan, New Zealand, the Philippines and Ukraine, which all reformed their electoral rules in the mid 1990s leading to a change in *maj*, the pre-reform classification is used.

Table A2 First-stage specification of 2SLS estimates

	(1)	(2)
Dep. var	<i>pres</i>	<i>maj</i>
<i>con2150</i>	-0.04 (0.14)	-0.13 (0.12)
<i>con5180</i>	-0.13 (0.18)	0.28 (0.10)**
<i>con81</i>	0.29 (0.20)	0.12 (0.11)
<i>engfrac</i>	-0.68 (0.13)***	1.09 (0.13)***
<i>eurfrac</i>	0.39 (0.11)***	-0.21 (0.13)
<i>lpop</i>		0.07 (0.02)***
<i>lat01</i>	-1.43 (0.34)***	
<i>age</i>	0.56 (0.31)*	
<i>avelf</i>		0.74 (0.21)***
<i>F</i> -test	4.26***	3.26**
R ²	0.51	0.51
Obs.	75	75

Robust standard errors in parentheses

* significant at 10%; ** significant at 5%; *** significant at 1%.

F-test refers to joint significance of *con2150*, *con5180*, and *con81*.