State intervention and Development

- Normative: What are the arguments for state intervention?
  - Internalizing Learning Externalities: Endogenous growth models
  - Inequality: Imperfect credit market models
  - Coordination failure
  - Investment in Infrastructure
- Positive: How does state intervention work, in practice?
- How can effective institutions be designed to deliver these interventions?

Political institutions

- Political system as a mapping from individual preference orderings to a social preference ordering.
- Arrow's impossibility theorem shows that if this mapping is to satisfy certain weak conditions
  - Transitivity
  - Weakly Paretian
  - Independence of irrelevant alternatives
- The social preference must be 'dictatorial' in that it will reflect the preferences of a single agent.
- Implication: if agents differ in policy preferences cannot avoid conflict $\Rightarrow$ what matters is who has the political power (ability to choose policy).

- ➜ Political institutions: set of institutions which regulate the limits of political power, and determines how political power is acquired by a subset of citizens.
- ➜ Why did certain political institutions have emerged as dominant institutions across countries (e.g. universal franchise, representative democracy)
  - ➜ Historic accident, colonialism, efficiency, rent-seeking
- ➜ How does policy-making occur in these environments.
  - ➜ When will the impossibility theorem not bind - assumptions on preferences and institutions
  - ➜ Specific institutions for choosing public policy: Representative democracy

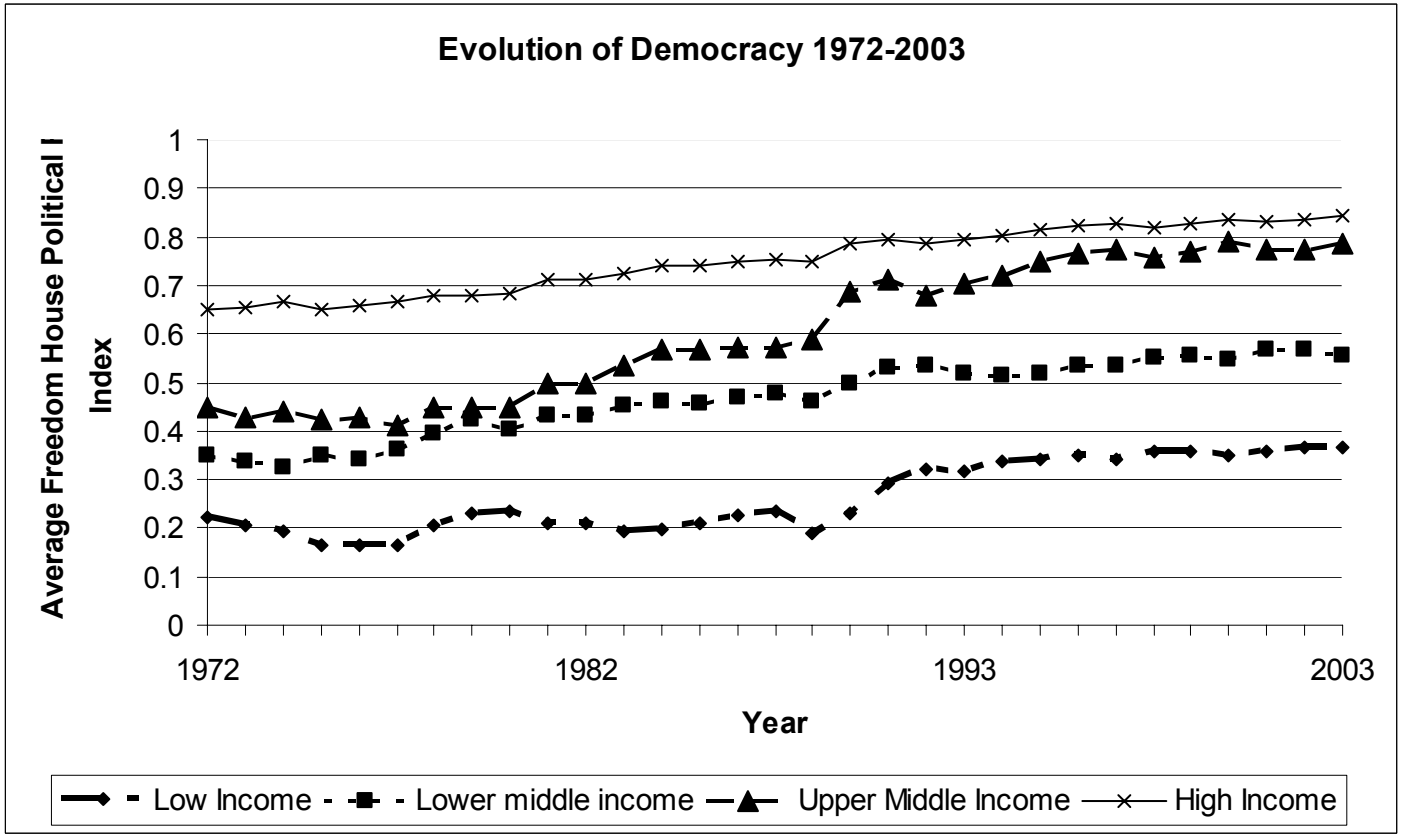

Figure 1: Growth of Democratic Institutions (Freedom House Index normalized between 0 and 1, where 1 is the most democratic)

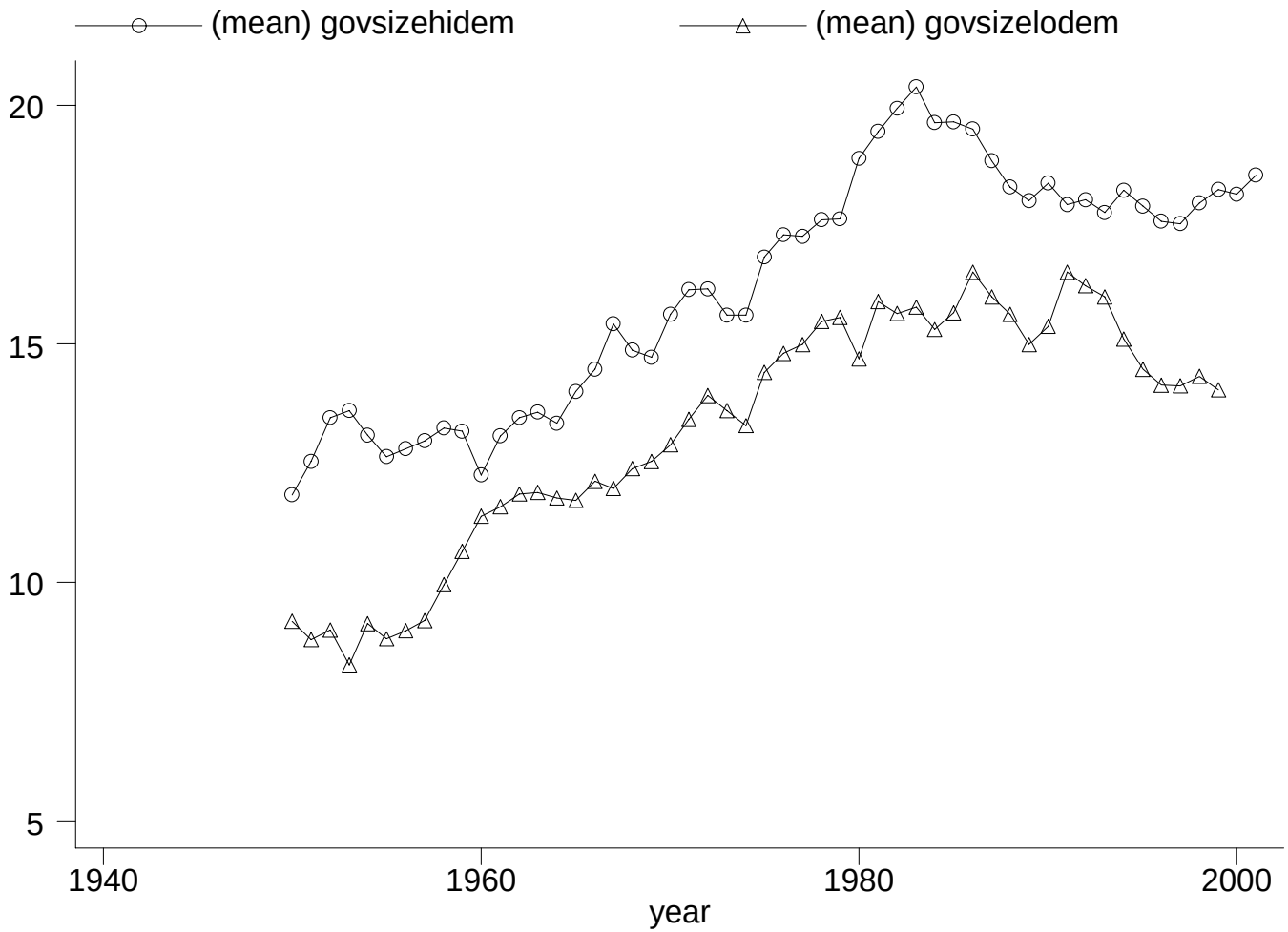

Figure 3 The size of government in countries with high and low democracy
(var: ratio of government consumption to GDP, threshold for democracy at 8).

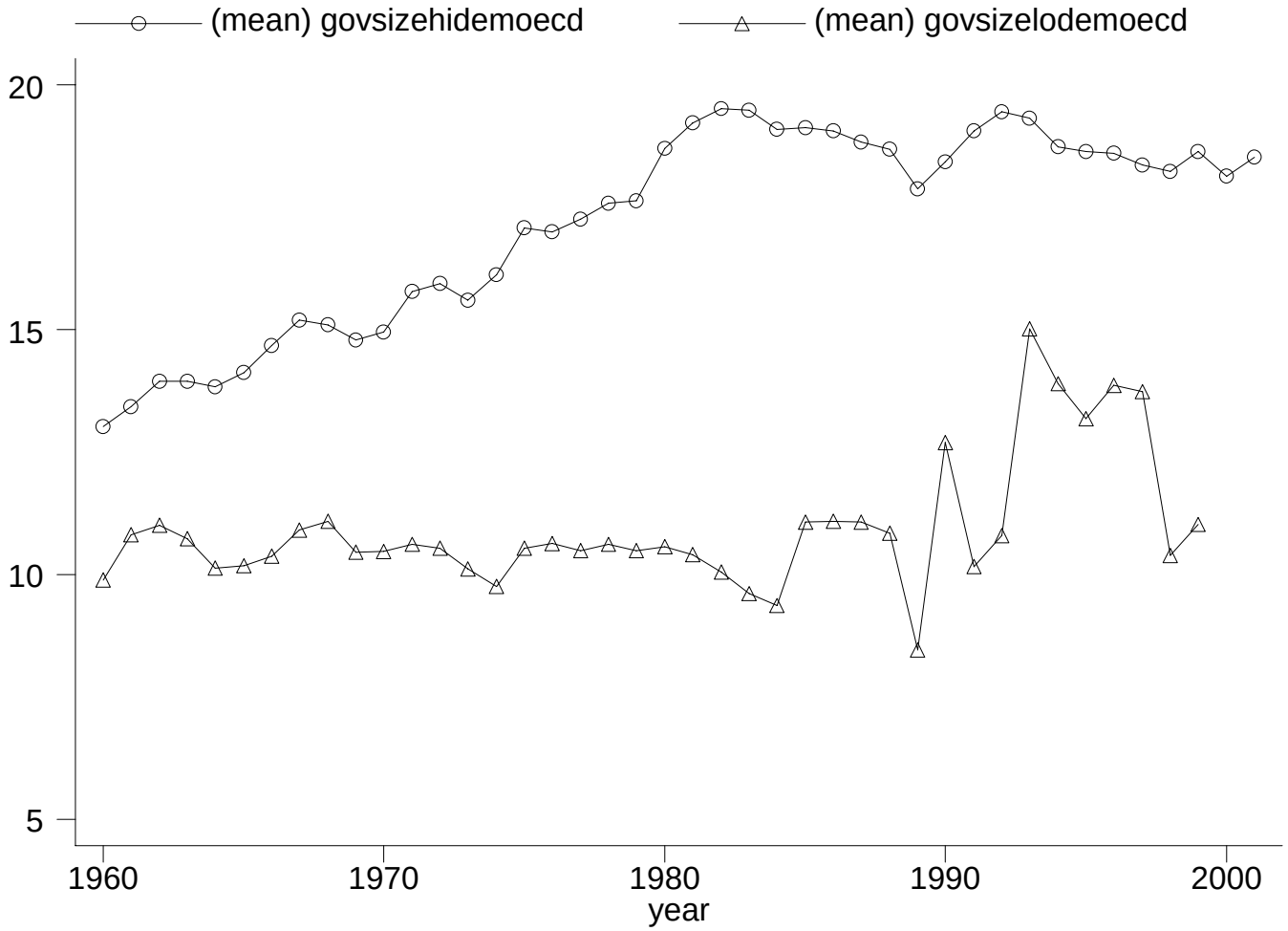

Figure 4 The size of government in OECD countries with high and low democracy
(var: ratio of government consumption to GDP, threshold for democracy at 8).

ECONOMIC ENVIRONMENT

- N citizens, make a social decision about a set of policies $x \in \aleph$, where $\aleph$ is the set of feasible policies.
- Citizens preferences over policy: $V^i(x, j)$ (where $i = 1, ...N$) and j is the identity of the policy-maker.
  - one dimensional political science environment $V^i(x, j) = - \parallel \alpha_i - x \parallel$ for all j
  - negative income tax model:
    - Agent preferences: $\omega^i = c^i + V(n^i)$ where c is consumption and n^i is leisure and $V(.)$ is concave utility function.
    - Budget constraint $c^i \leq (1 - t)l^i + T$

- Income tax rate is t and transfer level is T. The real wage is exogenous and normalized to one.

- Individuals have identical preferences over consumption c, and labor supply l, denoted by $u(c, l)$ but differ in productivity a_i s.t individual i's time constraint is

$$a_i \geq n^i + l^i$$

  Assume a_i is distributed in population with mean a and median a_m

- Since individual preferences are linear in consumption, optimal labor supply will be decreasing in tax rates (by concavity of $V()$). Specifically,

$$l^i = a^i - V_n^{-1}(1 - \tau)$$

- Let a_i denote ability/difference in preferences and x as before policy. Let $x(a_i)$ be individual i's most preferred policy

- **Single peaked preferences** Voter i has single peaked preferences if his preference ordering over alternative policies is determined by their distance from his most preferred policy (bliss point) - If $x^{"} > x^{'} > x^{a_i}$ or $x^{"} < x^{'} < x^{a_i}$ then $V(x^{"}, a_i) < V(x^{'}, a_i)$

- **Single crossing** The preferences of voters satisfy single-crossing when the following property holds: If $x > x^{'}$ and $a_i^{'} > a_i$ or if $x < x^{'}$ and $a_i^{'} < a_i$ then $V(x, a_i) \geq V(x^{'}, a_i) \Rightarrow V(x, a_i^{'}) \geq V(x^{'}, a_i^{'})$

- **Condorcet winner**A Condorcet winner exists if there is some alternative that beats all others in pairwise comparison. A particular policy is a Condorcet winner in the set $\aleph$ if there is no other policy $x \in \aleph/\{x_c\}$, which is (strictly) preferred to it by a majority in the population.

- **Median Voter Theorem**: If all voters have single peaked preferences over a given ordering of policy preferences or if their preferences satisfy the single-crossing property then a Condorcet winner always exists and coincides with the median ranked bliss (preferred) point (policy).

- (note doesn't require sincere voting)

- In the one dimensional pol-sci example, preferences are single peaked. The Condorcet winner is the median ideal point.
- In the negative income tax case Roberts shows that there is a Condorcet winner if $y(t, T, a) \equiv al(a(1-t), T)$ is increasing in a for all $(t, T) \in [0, 1] \times \Re$. It is the level of redistribution preferred by the median ability group.
- A Condorcet winner does not exist in a game of pure distribution
- Divide a cake of size one. A policy x is an element of the N-dimensional simplex. For any randomly selected alternative in this simplex, another can be found that beats it in pairwise comparison under majority rule.

Application

- Two parties compete
- Preferences are as in the labor supply model
- Preferences satisfy single-crossing $\Rightarrow$ outcome will be the tax rate preferred by the median voter.
- If the mean exceeds the median as we would expect for a skewed distribution then it must be the case that median productivity is less than mean productivity.
- Increases in difference between mean and median will increase tax rate $\Rightarrow$ greater inequality more redistribution.

EVIDENCE

- ➜ Inequality and Growth- evidence goes both ways
- ➜ Inequality and Redistribution: More equal countries redistribute more (Benabou/Perotti

Voter Preferences

- Typically, we assume that individual utility is increasing with own post tax income (and possibly with availability of public goods. Implies redistributive preferences will systematically vary with individual and group characteristics (Roberts (1977), Meltzer and Richards (1980))

- **Individual Characteristics**
  - Income: Richer individuals favor less redistribution. This holds up in both rich and poor countries.
  - Education: In rich countries more educated individuals are less likely to favor redistribution (Haider 2004). Less clear in the context of developing countries.
  - No studies that identify the causal effect of income or education on redistributive preferences in low income countries

Table 1: Interest in Government and Redistributive Preferences: World Values Survey

	Income Equality	Government Does Too Little	Left
	(1)	(2)	(3)
Income below 50th decile	0.0804***	0.0039	0.0164***
	(0.0085)	(0.0053)	(0.0060)
Income below 50th decile*	-0.0147	0.0120	-0.0045
Low income country	(0.0212)	(0.0134)	(0.0081)
Primary Education or less	0.0263	-0.0011	-0.0047
	(0.0249)	(0.0344)	(0.0128)
Primary Education*Low	0.0213	-0.0585	0.0083
Income country	(0.0266)	(0.0469)	(0.0288)
Female	0.0137	0.0086	-0.0281***
	(0.0030)***	(0.0017)***	(0.0062)
Female*Low Income	-0.0129	-0.0108	0.0037
country	(0.0067)*	(0.0056)*	(0.0092)
Fixed Effect	Country	Country	Country
N	142923	142923	142923
R-squared	0.09	0.58	0.04

Representative democracy

- Three stage game
  - Stage one: entry stage, the number of candidates is determined.
  - Stage two: citizens vote over candidates.
  - Stage 3: Policies are implemented.
  - Solve backward

- Policy choice: In a Downsian model each candidate is associated with: $\widehat{x}_i = argmaxxV^i(x)|x \in \aleph$. Assume unique per candidate.
- Let X_i denote the campaign announcement of candidate $i \in C$. Then we suppose the actual policy outcome will be

  $x_i^* = h(\widehat{x}_i, X_i)$
- With full policy commitment $x_i^* = X_i$, while in its absence it is $x_i^* = \widehat{x}_i$
- Given policy selection rule we can define utility imputation $(v_{1i}, ...v_{Ni})$ associated with each candidate's election, where $v_{ji} = V^j(x_i^*, i)$ is individual j's utility if i is elected.

Downsian model

Downsian model

- Downs assumed candidates only cared about winning. i.e. candidate preferences are of the form

$$V^i(x_i, j) = \Delta i f i = j; 0 otherwise$$

- In the two candidate case it follows that: **Result 1** Suppose that a Condorcet winner exists in $\aleph$. Then the unique Nash equilbrium has both candidates committing to x_c.

- Downsian model predicts convergence to the Condorcet winner. Underlies the usual practice of assuming that the outcome preferred by the median voter is selected in political equilibrium. This result generalizes to more than two candidates if entry is costly.

Citizen candidate model

- No restriction on who may enter as a candidate
- Announcements made about policy prior to the election have no force since candidates will simply implement preferred policy if they win.
- Besley and Coate (1997) provide conditions for equivalence between their and the Downsian model in the one candidate case:
- **Result 2** Suppose that $V^i(x, j)$ is independent of j for all $i \in N$, and that a Condorcet winner x_c^* exists in $\aleph$, then (i) if citizen i running unopposed is an equilibrium of the entry game for sufficiently small entry costs, $x_i^* = x_c^*$ and (ii)if $x_i^* = x_c^* \neq x_0$ then citizen i running unopposed is an equilibrium of the entry game for sufficiently small entry cost.

Policy Commitment and Candidate Identity

- Key distinction in political economy models: Can party (candidate) commit to policies which are independent of party (candidate) own preferred policy?
- Pande (2003): Can exploit existence of political institution which restricts identity of policy maker to examine whether policy commitment exists (also see Chattopadhyay and Duflo)
- Mandated political representation:
  - Representative democaracy $\Rightarrow$ political under-representation of individuals belonging to minority groups who might vote in their own interest
  - Solution: majority minority districts; electoral lists; political reservation
  - Key feature of political reservation: change candidate identity without affecting voter composition
  - Practiced in favor of low castes

- Candidate selection undertaken by two political parties, indexed by $J \in (R, P)$. Parties are ideologically differentiated on income – party R favors the rich, and party P the poor.
- Party chooses fraction of low castes (π) to field to maximize average member's utility

$$W_J = (1-t)y^k + T + \xi_J \delta,$$

- A political equilibrium is a pair of party entry decisions which constitute best responses. Every such equilibrium is associated with a probability distribution over policy outcomes. The probability that the policies associated with the election of a party's candidates are implemented equals the party's probability of electoral success.

- Result 1 *If the proportion of low caste members in each party is below their population share then an equilibrium with no low caste candidates and no targeted redistribution exists.*
- Result 2 *If parties can commit their candidates to policies then political reservation does not affect policy outcomes. However, if such commitment is absent then, relative to an equilibrium with no low caste candidates, political reservation increases the likelihood of targeted redistribution.*

- Other ways of modelling
  - Heterogenous costs of running: Chattopadhyay and Duflo
  - Differences in ability
  - Lobbying

Empirical tests of political reservation

- Indian constitution: fraction jurisdictions reserved for scheduled castes (scheduled tribes) should equal, as nearly as possible, the population share of scheduled caste (scheduled tribe) in the state. Moreover, the only permissible basis for changes in the extent of reservation enjoyed by a group in a state is changes in the census estimates of the group's population share in that state.
- Reservation is a non-linear function of the group's population in the most recent census.
-

$$Y_{st} = \alpha_s + \beta_t + \gamma \mathbf{R_{st}} + \phi \mathbf{P_{st^*}} + \delta \mathbf{P_{st}} + \eta \mathbf{X_{st}} + \varepsilon_{st}.$$

FINDINGS

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.

FINDINGS

- Identity matters - Duflo finds similar evidence for women reservation in local governments

Table 1: Fraction of Women among Pradhans in Reserved and Unreserved GP

	Reserved GP	Non reserved GP
	(1)	(2)
West Bengal		
Total number	54	107
Proportion of female Pradhans	100%	6.5%
Rajasthan		
Total number	40	60
Proportion of female Pradhans	100%	1.7%

Table 2: Village Characteristics in Reserved and Unreserved GP, 1991 Census

	West Bengal			Rajasthan		
	Mean, reserved GP	Mean, unreserved GP	Difference	Mean, reserved GP	Mean, unreserved GP	Difference
Dependent variables	(1)	(2)	(3)	(4)	(5)	(6)
Total population	974	1022	-49	1249	1564	-315
	(60)	(46)	(75)	(123)	(157)	(212)
Female literacy rate	0.35	0.34	0.01	0.05	0.05	0.00
	(.01)	(.01)	(.01)	(.01)	(.01)	(.01)
Male literacy rate	0.57	0.58	-0.01	0.28	0.26	0.03
	(.01)	(.01)	(.01)	(.02)	(.02)	(.03)
% cultivated land that is irrigated	0.45	0.43	0.02	0.05	0.07	-0.02
	(.03)	(.02)	(.04)	(.01)	(.01)	(.02)
Dirt road	0.92	0.91	0.01	0.40	0.52	-0.11
	(.02)	(.01)	(.02)	(.08)	(.07)	(.10)
Metal road	0.18	0.15	0.03	0.31	0.34	-0.04
	(.03)	(.02)	(.03)	(.07)	(.06)	(.10)
Bus stop or train station	0.31	0.26	0.05	0.40	0.43	-0.03
	(.04)	(.02)	(.04)	(.08)	(.07)	(.10)
Number of public health facilities	0.06	0.08	-0.02	0.29	0.19	0.10
	(.01)	(.01)	(.02)	(.08)	(.06)	(.1)
Tube well is available	0.05	0.07	-0.02	0.02	0.03	-0.01
	(.03)	(.02)	(.07)	(.02)	(.02)	(.03)
Handpump is available	0.84	0.88	-0.04	0.90	0.97	-0.06
	(.04)	(.03)	(.05)	(.05)	(.02)	(.05)
Wells	0.44	0.47	-0.02	0.93	0.91	0.01
	(.07)	(.04)	(.08)	(.04)	(.04)	(.06)
Tap water	0.05	0.03	0.01	0.12	0.09	0.03
	(.03)	(.02)	(.03)	(.05)	(.04)	(.06)
Number of primary schools	0.95	0.91	0.04	0.93	1.16	-0.23
	(.07)	(.03)	(.08)	(.09)	(.10)	(.15)
Number of middle schools	0.05	0.05	0.00	0.43	0.33	0.10
	(.01)	(.01)	(.01)	(.08)	(.07)	(.10)
Number of high schools	0.09	0.10	-0.01	0.14	0.07	0.07
	(.01)	(.01)	(.02)	(.06)	(.04)	(.07)

Notes:

1. There are 2120 observations in the West Bengal regressions, and 100 in the Rajasthan regressions.
2. Standard errors, corrected for clustering at the GP level in the West Bengal regressions, are in parentheses.

Table 3: Effect of Women's Reservation on Women's Political Participation

Dependent variables	Mean, reserved GP (1)	Mean, unreserved GP (2)	Difference (3)
West Bengal			
Fraction of women among participants in the	9.80	6.88	2.92
Gram Samsad (in percentage)	(1.33)	(.79)	(1.44)
Have women filed a complaint to	0.20	0.11	0.09
the GP in the last 6 months	(.04)	(.03)	(.05)
Have men filed a complaint to the GP in the	0.94	1.00	0.06
last 6 months	(.06)		(.06)
Observations	54	107	
Rajasthan			
Fraction of women among participants in	20.41	24.49	-4.08
the Gram Samsad (in percentage)	(2.42)	(3.05)	(4.03)
Have women filed a complaint to	0.64	0.62	0.02
the GP in the last 6 months	(.07)	(.06)	(.1)
Have men filed a complaint to the GP	0.95	0.88	0.073
in the last 6 months	(.03)	(.04)	(.058)
Observations	40	60	

Notes:
1. Standard errors in parentheses.
2. Standard errors are corrected for clustering at the GP level in the West Bengal regressions, using the Moulton (1986) formula.

Table 4: Issues Raised by Women and Men in the Last 6 Months

	West Bengal						Rajasthan					
	Women			Men	Average	Difference	Women			Men	Average	Difference
	Reserved	Unreserved	All				Reserved	Unreserved	All			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Other Programs												
Public works	0.84	0.84	0.84	0.85	0.84	-0.01	0.60	0.64	0.62	0.87	0.74	-0.26
Welfare programs	0.12	0.09	0.10	0.04	0.07	0.06	0.25	0.14	0.19	0.03	0.04	0.16
Child care	0.00	0.02	0.01	0.01	0.01	0.00	0.04	0.09	0.07	0.01	0.02	0.06
Health	0.03	0.04	0.04	0.02	0.03	0.02	0.06	0.08	0.07	0.04	0.03	0.03
Credit or employment	0.01	0.01	0.01	0.09	0.05	-0.08	0.06	0.06	0.05	0.04	0.09	0.01
Total number of issues	153	246	399	195			72	88	160	155		
Breakdown of public works issues												
Drinking water	0.30	0.31	0.31	0.17	0.24	0.13	0.63	0.48	0.54	0.43	0.49	0.09
Road improvement	0.30	0.32	0.31	0.25	0.28	0.06	0.09	0.14	0.13	0.23	0.18	-0.11
Housing	0.10	0.11	0.11	0.05	0.08	0.05	0.02	0.04	0.03	0.04	0.04	-0.01
Electricity	0.11	0.07	0.08	0.10	0.09	-0.01	0.02	0.04	0.03	0.02	0.02	0.01
Irrigation and ponds	0.02	0.04	0.04	0.20	0.12	-0.17	0.02	0.02	0.02	0.04	0.03	-0.02
Education	0.07	0.05	0.06	0.12	0.09	-0.06	0.02	0.07	0.05	0.13	0.09	-0.09
Adult education	0.01	0.00	0.00	0.01	0.00	0.00	0	0	0.00	0.00	0.00	0.00
Other	0.09	0.11	0.10	0.09	0.09	0.01	0.19	0.21	0.20	0.12	0.28	0.05
Number of public works issues	128	206	334	166			43	56	99	135		
Public works												
Chi-square	8.84		71.72				7.48		16.38			
p value	0.64		0.00				0.68		0.09			

Notes:
1. Each cell lists the number of times an issue was mentioned, divided by the total number of issues in each panel.
2. The data for men in West Bengal comes from a subsample of 48 villages.
3. Chi-square values placed across two columns test the hypothesis that issues come from the same distribution in the two columns.

Table 5: Effect of Women's Reservation on Public Goods Investments

Dependent variables	West Bengal Mean, reserved GP	West Bengal Mean, unreserved GP	West Bengal Difference	Rajasthan Mean, reserved GP	Rajasthan Mean, unreserved GP	Rajasthan Difference
	(1)	(2)	(3)	(4)	(5)	(6)
A. VILLAGE LEVEL						
Number of drinking water facilities	23.83	14.74	9.09	7.31	4.69	2.62
newly built or repaired	(5.00)	(1.44)	(4.02)	(.93)	(.44)	(.95)
Condition of roads (1 if in good	0.41	0.23	0.18	0.90	0.98	-0.08
condition)	(.05)	(.03)	(.06)	(.05)	(.02)	(.04)
Number of panchayat run	0.06	0.12	-0.06			
education centers	(.02)	(.03)	(.04)			
Number of irrigation facilities	3.01	3.39	-0.38	0.88	0.90	-0.02
newly built or repaired	(.79)	(.8)	(1.26)	(.05)	(.04)	(.06)
Other public goods (ponds, biogas, sanitation,	1.66	1.34	0.32	0.19	0.14	0.05
community buildings)	(.49)	(.23)	(.48)	(.07)	(.06)	(.09)
B. GP LEVEL						
1 if a new tubewell was built	1.00	0.93	0.07			
		(.02)	(.03)			
1 if a metal road was built or repaired	0.67	0.48	0.19			
	(.06)	(.05)	(.08)			
1 if there is an informal education	0.67	0.82	-0.16			
center in the GP	(.06)	(.04)	(.07)			
1 if at least one irrigation pump was built	0.17	0.09	0.07			
	(.05)	(.03)	(.05)			

Notes:
1. Standard errors in parentheses.
2. In West Bengal, there are 322 observations in the village level regressions, and 161 in the GP level regressions. There are 100 observations in the Rajasthan regressions.
3. Standard errors are corrected for clustering at the GP level in the village level regressions, using the Moulton (1986) formula, for the West Bengal regressions.

INTERPRETATION

- ➜ In a static model difficult to argue that distributive implications of change in leadership have any efficiency implications.
- ➜ One response is to start with the observation that group identity, say gender or ethnicity, carries information about preferences
- ➜ If a basic premise of representative democracy is to provide all citizens with equal voice and, under the assumption that these groups had no voice, the institution led to an improvement
- ➜ However, the more basic question remains why does group identity matter?

Gender

- For most countries, cross-sectional data suggests that women are socially but not politically liberal
- In rich countries we observe a strong time trend – over time women have become relatively more left wing. One explanation that is supported in the data is that this is related to increased non-marriage (Edlund and Pande, Edlund, Pande and Haider).
- In developing countries this trend is absent (Inglehart and Norris). At least two possible explanations
  - Marriages are more stable
  - Transfers are typically received by the male head or other male members in the family and so women do not receive redistributive benefits. A more extreme version is that they do not even know about these benefits, even if they get benefits.
- No causal studies

ETHNICITY

- ➜ Ethnicity predicts group preference when public or private goods are targeted by ethnicity.

- ➜ Correlation in household data
- ➜ Randomized experiment: Wanchekeon study for Benin randomizes use of ethnic messages across villages during political campaign. However, very small sample size
- ➜ Limited evidence on how, over and above income, ethnicity predicts preference of non-targeted goods. Alternative explanations such as ability to enforce social sanctions (Miguel and Gugerty)..

Interpretation

- In a static model difficult to argue that distributive implications of change in leadership have any efficiency implications.
- One response is to start with the observation that group identity, say gender or ethnicity, carries information about preferences
- If a basic premise of representative democracy is to provide all citizens with equal voice and, under the assumption that these groups had no voice, the institution led to an improvement
- However, the more basic question remains why does group identity matter?
- And if this reflects imperfections in some markets, should politics be the fix?

Politician Quality

- We have talked about what is often referred to as the 'spatial' dimension in politics. Underlying most discussion of political misbehavior is often the notion of ability/quality

- One view is that politician misbehavior is all about moral hazard – there are insufficient institutions of restraints (Barro/Ferejohn). These models have to make a lot of use of voter indifference to identify equilibrium. Also hard to explain term limit and incumbency (dis)advantage effects

- Some evidence that identity matters for quality – Jones and Olken (2005)

Politician Quality

- Theory: Political rents, imperfect information and coordination problems can drive entry of bad politicians (Caselli and Morelli (2004); Besley and Coate (1997)).
- Case Studies
  - Gelbach and Sonin (2004) suggest running for office as an alternative to lobbying for influence. Argue more likely in developing countries where more discretion in how business is treated. Example - recent gubernatorial election in a large Siberian region dominated by two industrial interests, with the winner of the election the former general director of one of the two firms.
  - Shatkin (2004) provides a case study based on politics in the Eastern Seaboard in Thailand. Points to rise of contractors in local politics, and links it to increased decentralization. Argues clientelist politics more likely in developing countries

- Also evidence that political connection matter for resource allocation – Cole (2005), Khwaja and Mian (2005), Faco (2005).
- But, can we take these findings to imply
  - Existence of ‘bad’ politicians
  - Resource allocation via political process is relatively ‘worse’ in low income countries
  - Changing the form of resource allocation is the right answer

BANERJEE- MISGOVERNANCE

- Agents: Government, Bureaucrats and Others ($N > 1$)
- Publicly provided private good - slots (measure 1)
- Applicants are of type L or H, where $L < H$, $N_H < 1$ and $\pi H - p_h$ is the return for an applicant
- Credit market imperfection: Ability to pay bounded by y
- Government benevolent social welfare maximizer. Allocation of slots done by bureaucrat – who seeks to maximize income
- Red tape: Unit costs applicant δ and cost/unit to bureaucrat is $\frac{v}{\delta}$

- Government audit: sample a small fraction and determine their type
- Impose a fine F on bureaucrat for every slot in excess of $1 - N_H$ which goes to L type.
- Implies the marginal cost of giving a type L applicant a slot is set at F.
- If both bureaucrat and government welfare oriented
  - Offer L type a sufficient discount on what high type is paying and then L type will be willing to accept lower probability of getting the good.
- Both bureaucrat and government profit oriented
  - Set price equal to y - bureaucrat pays government a lump sum
- No red tape!

- Bureaucrat profit minded and government welfare minded
- Set price y but use red tape to prevent low types from mimicking high types
- Set price at y and red tape at

$$L - y - \delta T_H = \frac{(L-y)(1-N_H)}{N_L}$$

- Red tape is created by bureaucrat, not government
- Holmstrom and Milgrom: Increasing incentives along a dimension of performance that is measurable (number of slots going to low types) will distort incentives along a non-measurable dimension (here red tape)
- If social cost of red tape is high, provide very low powered incentives to bureaucrats

- "The basic claim of this paper is that it is possible to develop a theory of misgovernance by a benevolent government based on two eminently reasonable premises: one, that a substantial part of what governments do is to respond to market failures; and two, like all other organizations, the government has agents who are more interested in their own welfare than in any collective goals."
- Why should red tape be higher in poorer countries?
  - Mismatch between ability to pay and willingness to pay higher
  - Capital markets are worse

EMPIRICAL EVIDENCE ON CORRUPTION

- Measuring corruption
- Identifying cost of corruption
- Factors that affect extent of corruption
  - Measuring Corruption
    - Perception data: Ask businessman either whether there is corruption (too vague): used by Millenium Challenge
    - Specifically about bribes paid(Svensson and Reinikka)
    - Cross-validation/audits
    - Use stock market returns to estimate value of political connections

Stock market valuation: Fisman

- Event analysis on health events leading upto Suharto's departure
- Use lexis-nexus search to identify periods of poor health between 1995 and 1997: six episodes when rumors about Suharto's state of health
  - Construct a Suharto dependency index for each firm: goes from 1 to 5 – 5 if firm owned by Suharto's children, 1 if owned by long term opponents
  - R_{ie} is firm i's returns during the event window: (price end-price beginning)/price beginning. Run six separate regressions
  - $$R_{ie} = \alpha + \beta POL_i + \epsilon_i e$$
  - Find negative coefficient for every day

- Run pooled regression:

$$R_{ie} = \alpha + \rho_1 POL + \rho_2 NR + \rho_3 POL * NR \epsilon_{ic}$$

- NR is stock market value on that day, and proxies for how bad the news is
- Find a positive coefficient on ρ_3: Upto a quarter of a firm's share price may be accounted for by political connections

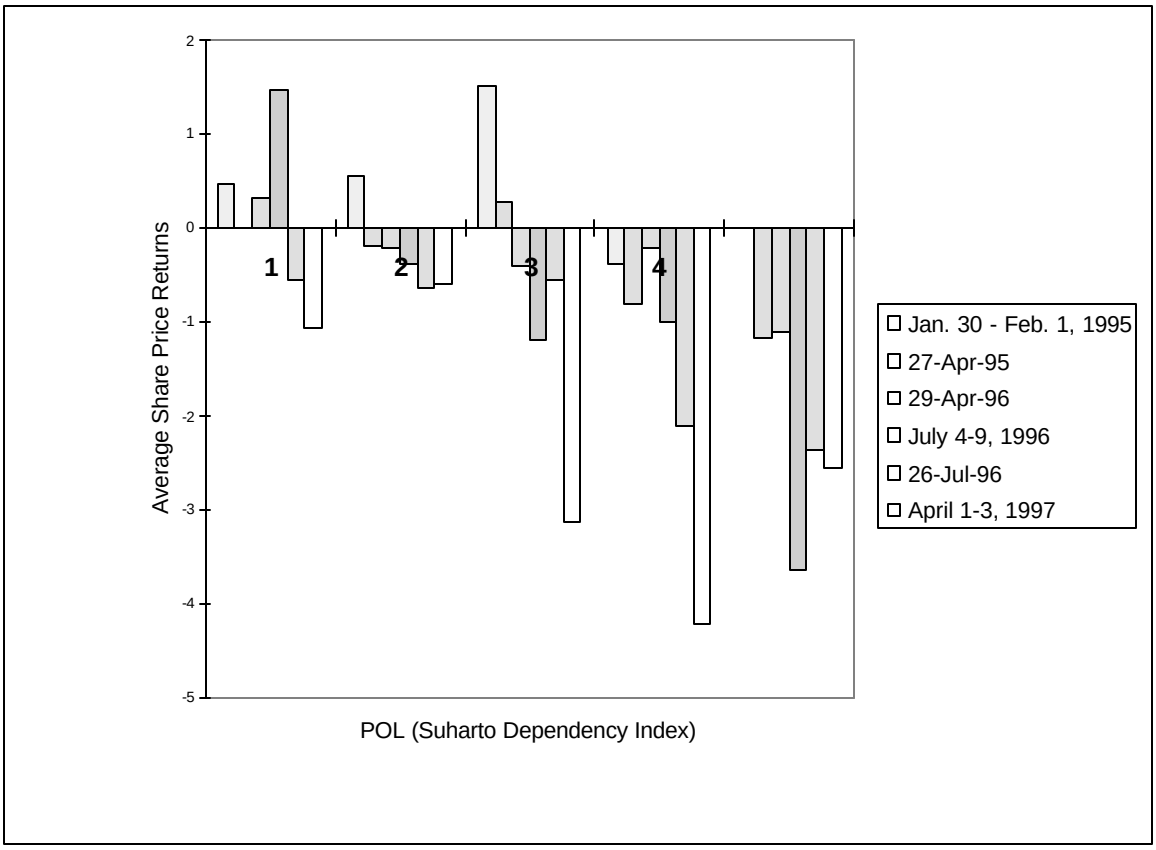
2
1
0
-1
-2
-3
-4
-5
Average Share Price Returns
1
2
3
4
POL (Suharto Dependency Index)
Jan. 30 - Feb. 1, 1995
27-Apr-95
29-Apr-96
July 4-9, 1996
26-Jul-96
April 1-3, 1997

Figure 1

Cross-validation and technical audits

- Missing Imports in China (Fisman and Wei)
- WITS data base: information on export and import for each country at 6 digit harmonized coding system
- Exports reported by Hong Kong; Imports reported by China
- How can we rule out that difference is not measurement error?
- Difference is bigger for goods with higher tax rate

Table 5: The Effect Of Tax Rates on Evasion (Measured in Value)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Tax Rate	2.93 (0.74)	2.46 (0.67)	3.21 (0.87)	3.57 (0.89)	2.98 (0.81)	2.61 (0.79)	3.4 (0.96)
Constant	-1.31 (0.29)	-1.04 (0.23)	-1.31 (0.30)	-1.48 (0.31)	-1.29 (0.29)	-1.12 (0.27)	-1.46 (0.34)
Excluding Outliers?	No	Yes	No	No	Yes	Yes	Yes
Excluding products lacking tax on similar products?	No	No	Yes	No	No	Yes	Yes
Excluding products lacking Obs. on Quantities?	No	No	No	Yes	Yes	No	Yes
No of Observations	1663	1639	1470	1102	1087	1450	968
R^2	0.020	0.017	0.022	0.031	0.025	0.017	0.029

Note: Dependent Variable: log(Value of Exports from HK to China) – log(Value Imports to China from HK). Robust standard errors in parentheses, accounting for clustering of standard errors by 4-digit HSC.

SVENSSON

- Determinants of Bribe payments by Ugandan firms: 1998 Ugandan Enterprise survey: based on firm census
- Employers association fielded questionnaire: Many business people have told us that firms are often required to make informal payments to public officials to deal with customs, taxes, licenses, regulations etc. Can you estimate what a typical firm in your line of business has to typically pay in a year?
- Ability to extract bribes depends on existing regulatory framework
- Bribes paid will depend on
  - Firm profits
  - Low sunk cost technology

Who pays

WHO PAYS

- 81 percent of firms said they had to pay a bribe -

TABLE I

PROBIT REGRESSIONS ON THE INCIDENCE OF CORRUPTION

Specification	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Constant	0.203	0.647	0.428	0.254	0.206	-0.090	
	(.342)	(.155)	(.276)	(.356)	(.467)	(.461)	
	[.554]	[.000]	[.121]	[.476]	[.659]	[.846]	
Employment	8.4E-5	-7.9E-5	-8.2E-5	0.001	0.001	0.001	0.001
	(4.3E-4)	(4.4E-4)	(4.4E-4)	(.001)	(.001)	(.001)	(.001)
	[.848]	[.857]	[.852]	(.280)	(.278)	(.477)	(.380)
Infrastructure service	0.192						
	(.094)						
	[.041]						
Trade		0.430					
		(.238)					
		[.070]					
Pay tax			0.374				
			(.220)				
			(.089)				
Formal sector				0.140	0.141	0.213	0.200
				(.082)	(.083)	(.099)	(.074)
				[.088]	[.087]	[.032]	[.007]
Profit				-2.6E-9	-4.0E-9	1.7E-8	2.4E-9
				(4.8E-8)	(4.8E-8)	(4.9E-8)	(5.3E-8)
				[.957]	[.935]	[.730]	[.964]
Capital stock				-3.2E-7	-3.1E-7	-4.2E-7	-3.4E-7
				(2.5E-7)	(2.6E-7)	(2.5E-7)	(2.8E-7)
				[.199]	[.224]	[.090]	[.224]
Alternative return				-8.8E-7	-7.6E-7	2.4E-7	-6.3E-7
				(1.1E-5)	(1.1E-5)	(1.1E-5)	(1.1E-5)
				[.934]	[.884]	[.983]	[.956]
Competition					0.003		
					(.018)		
					[.884]		
Sell to government						-0.337	
						(.272)	
						[.216]	
Exemption						0.515	
						(.216)	
						[.017]	
Industry	-	-	-	-	-	-	5.09
							[.885]
LR(**z**)				6.15	5.84	7.05	4.86
				[.104]	[.119]	[.070]	[.183]
Observations	176	167	173	149	148	134	149

a. Dependent variable "incidence of graft" takes the value 1 if the firm reported positive bribe payments and 0 otherwise.

b. Standard errors in parenthesis and p-values in brackets.

c. Industry is the likelihood-ratio test statistic for the H_0 that the industry effects are equal.

d. LR(**z**) is the likelihood-ratio test statistic for the H_0 that the coefficients on the bargaining measures (profit, capital stock, alternative return) are zero.

WHO PAYS

- ➜ 81 percent of firms said they had to pay a bribe -
- ➜ Formal sector more likely to pay bribe
- ➜ No evidence that profitability affects likelihood
- ➜ Larger firms pay more bribes

How much?

How much?

➜ Bribe rate increases with profits, falls with alternative uses of capital

TABLE II

CORRUPTION REGRESSIONS

Specification	(1)	(2)	(3)	(4)	(5)
Constant	17.1	14.2	38.8	-3.19	
	(37.1)	(35.9)	(49.1)	(46.2)	
	[.646]	[.694]	[.432]	[.945]	
Profit per employee	0.0040	0.0040	0.0042	0.0042	0.0038
	(.0008)	(.0008)	(.0008)	(.0008)	(.0008)
	[.000]	[.000]	[.000]	[.000]	[.000]
Capital stock per employee	0.0041	0.0043	0.0040	0.0047	0.0041
	(.0024)	(.0022)	(.0024)	(.0023)	(.0027)
	[.089]	[.062]	[.090]	[.043]	[.123]
Alternative return per employee	-0.234	-0.239	-0.235	-0.253	-0.228
	(.096)	(.093)	(.094)	(.092)	(.099)
	[.017]	[.012]	[.014]	[.007]	[.024]
Formal sector	9.83	9.61	8.20	12.2	7.13
	(7.41)	(7.22)	(7.52)	(8.31)	(8.72)
	[.187]	[.186]	[.278]	[.145]	[.416]
Competition			-1.30		
			(1.75)		
			[.460]		
Sell to government				-3.29	
				(24.0)	
				[.891]	
Exemption				0.977	
				(17.2)	
				[.955]	
Industry	-	-	-	-	8.41
					[.752]
LR(**z**)[c]	27.8	30.1	30.4	32.7	27.9
	[.000]	[.000]	[.000]	[.000]	[.000]
Observations	119	117	116	105	117

a. Dependent variable is graft in US$ per employee.

b. Least-squares estimates with standard errors in parenthesis and p-values in brackets.

c. Specification (1) includes two outliers.

d. Industry is the likelihood-ratio test statistic for the H_0 that the industry effects are equal.

e. LR(**z**) is the likelihood-ratio test statistic for the H_0 that the coefficients on the bargaining measures (profit, capital stock, alternative return) are zero.

How much?

- Bribe rate increases with profits, falls with alternative uses of capital
- Average amount paid - 8,300 US dollars with median payment of 1800 US dollars- correspond to 88 US dollars per worker or roughly 8 percent of total costs.
- main concerns?
- Instrumenting for profits
  - Firm specific controls - proxies of human and social capital
  - Industry-location averages of profits

- Large literature on measuring corruption. Until recently, the literature on the economic impact of corruption mainly relied on cross country regressions. Difficult to use these results to understand mechanisms through which corruption affects outcome
- Equally, the counterfactual is unclear, especially when talking about politics. What will be distribution system if its not through political means
- Perhaps more promising to focus on specific policies to affect corruption, e.g. audits, which have a well defined alternative to current practice (Olken 2005)