Women Legislators and Economic Performance

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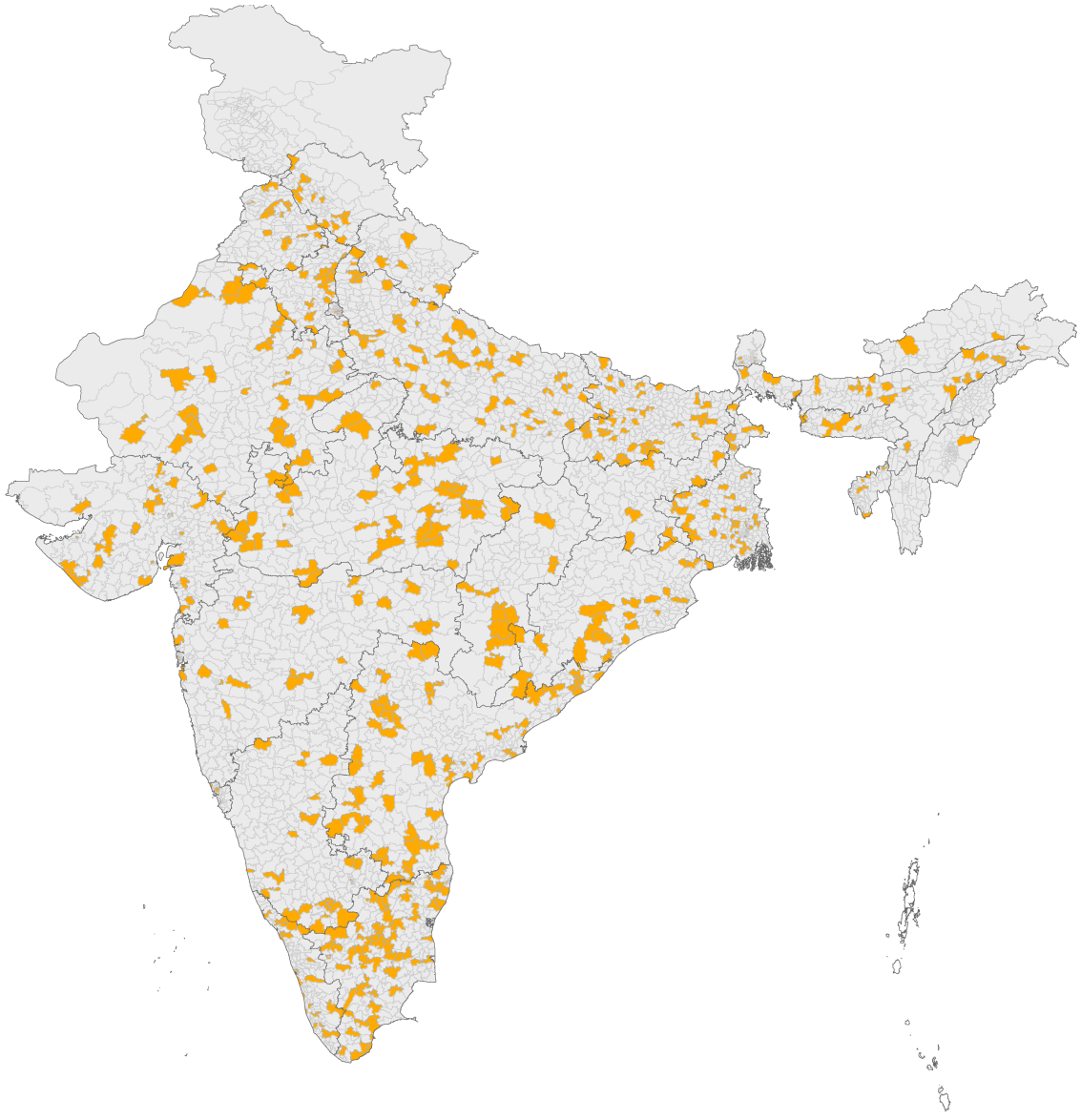
Women's Political Participation

Rising Share of Women in Political Office

- Substantial under-representation
  - Worldwide 23%, UK 32%, India 10%
- Phenomenal increase since 1990- doubling (global & India)
  - The feminization of politics is one of the most exciting political phenomena of our time.
  - Important to consider substantive impacts of widening representation.

Figure: Geographic Distribution of Female Legislators: 1992-2008.



Women Politicians Change Policy Choices

- Legislator gender affects **composition** of public spending
- Consistent with women & men having different preferences: lab experiments, voter surveys

- However, no evidence for economic activity, the rising tide thought to lift all boats.
- Lurking suspicion that women leaders may compromise growth given they favour redistribution.
  - Edlund and Pande 2002; British Election Survey 2011

Women on Corporate Boards

- Ambiguous/ mixed results for economic performance
  - Gagliadurci & Paserman 2014- Germany- no impact once sorting is accounted for
  - Ahern and Dittmar 2012-Norway quotas- deterioration of performance- women less experienced.
- Our approach avoids candidate selection, and the distortions introduced by quotas

Data

- Elections to India's state legislative assemblies
- Electoral data- 4265 constituencies, 1992-2012, spanning 4 elections
- Map satellite imagery of night luminosity to constituencies to measure economic performance (Henderson et al. 2012)

Figure: Level of luminosity in India in 1992.

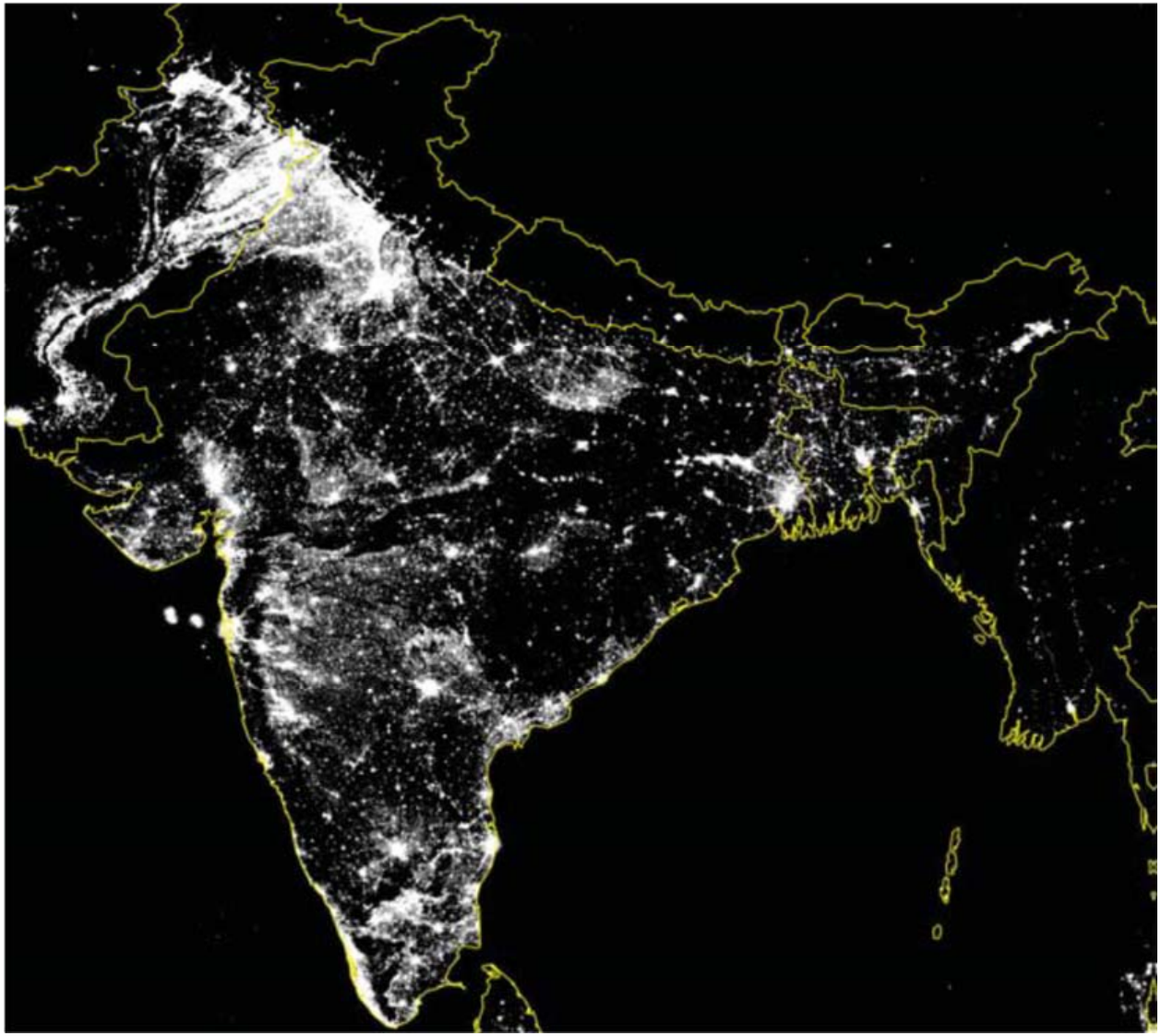
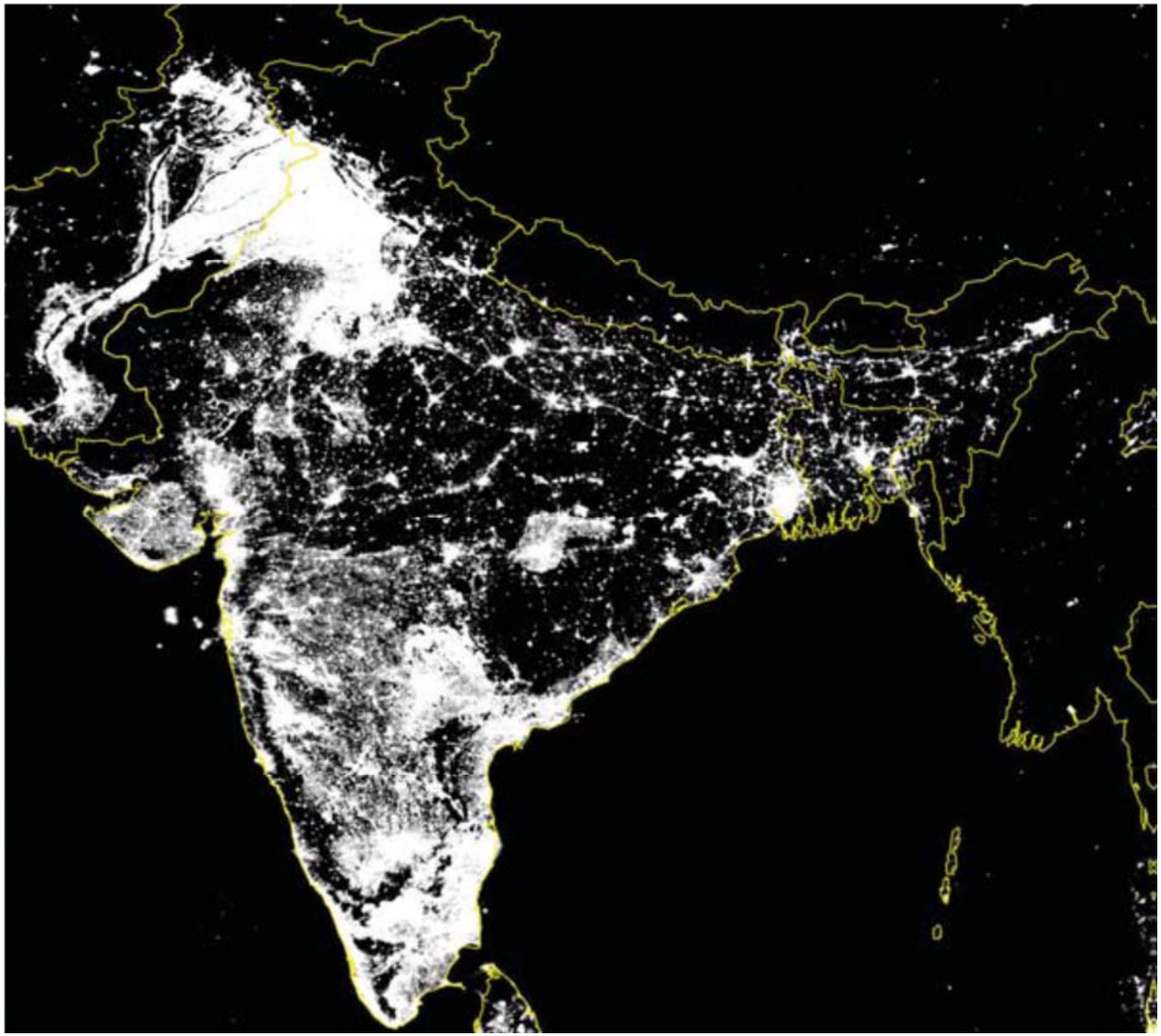


Figure: Level of luminosity in India in 2009.



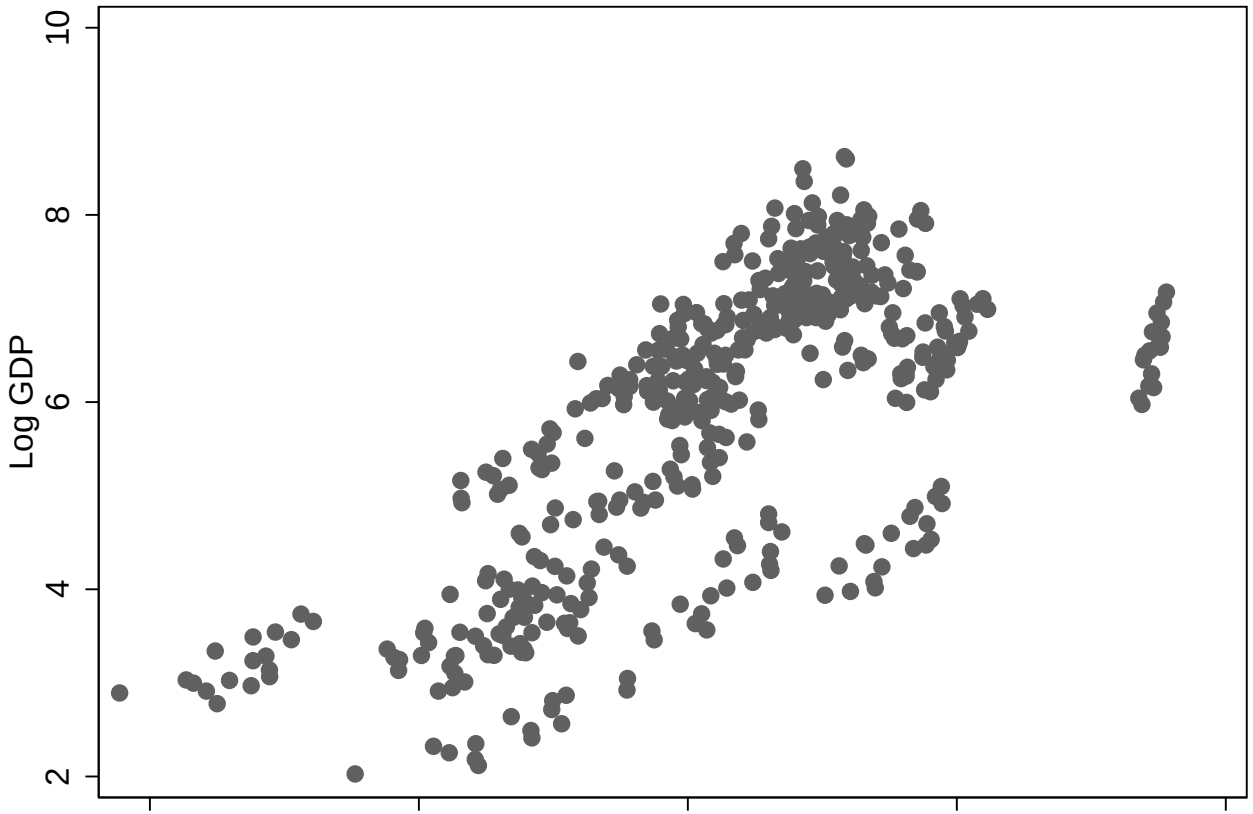


Figure: Scatter of GDP against Night Light Luminosity: State data Note: Log(Light/Area) is the natural log of total light output of a state in a given year divided by its geographical area. Data for 1992-2009.

Empirical Strategy- RD

- Design challenge: Voter preferences are likely to be different in places where women win
- Need to isolate legislator preferences from voter preferences
- Use RD design on close elections between men and women- so gender of the winner is quasi-random (Lee 2008)
- Analyze mechanisms- corruption, public infrastructure, strategic vs intrinsic motivation

RD Estimator

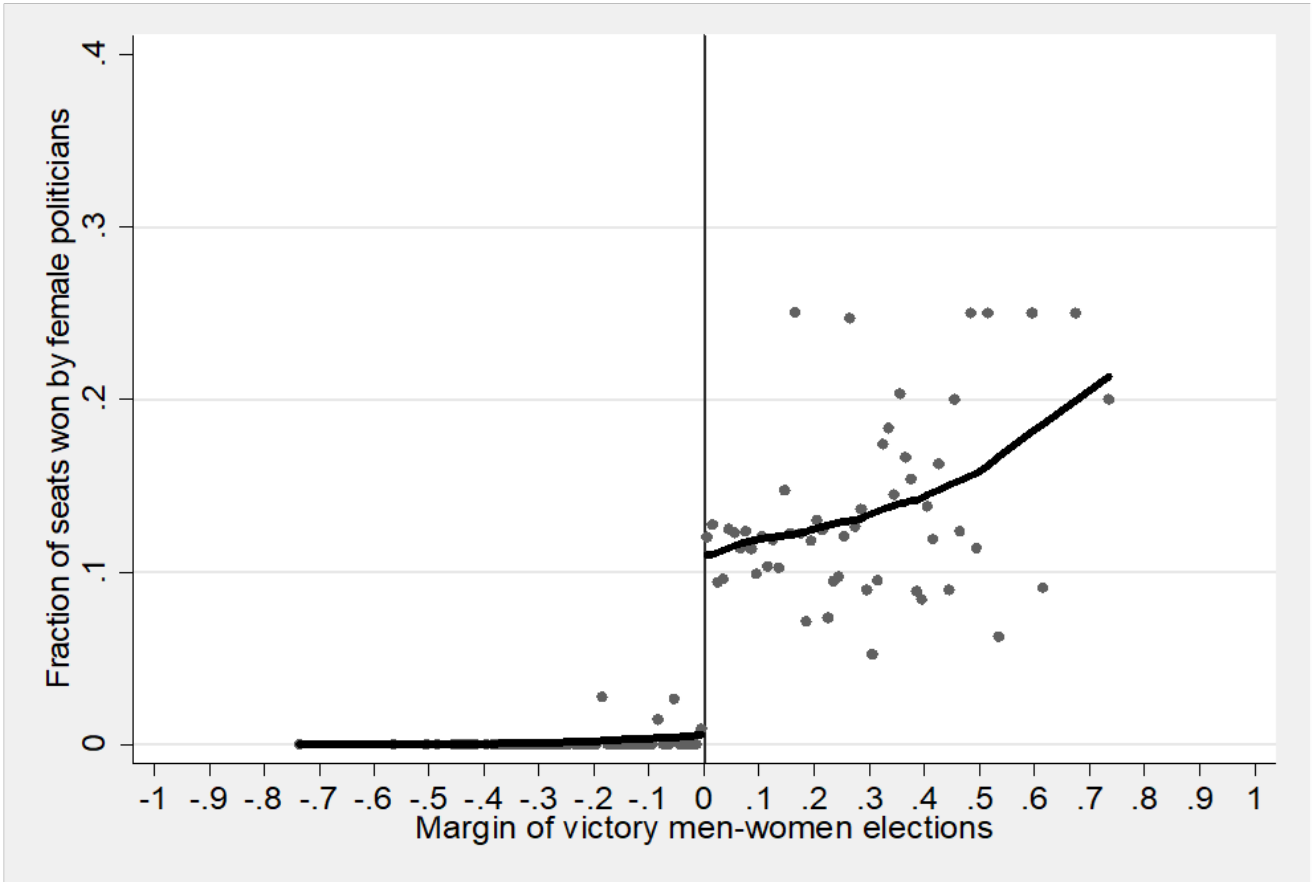
- The estimated equation is

$$y_{ist} = \alpha + \tau WomanLegislator_{ist} + f(Margin_{ist}) + \epsilon_{ist} \qquad (1)$$

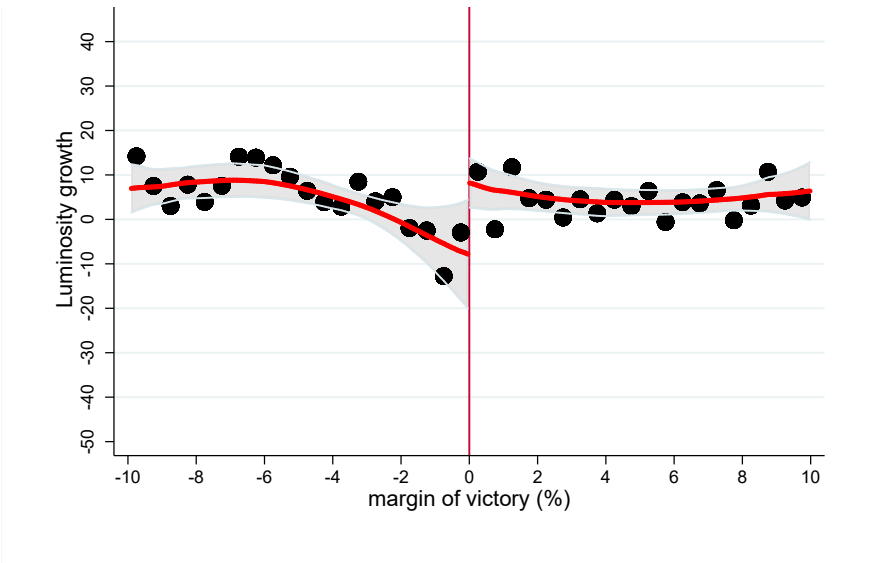
$$WomanLegislator_{ist} = \begin{cases} 1 & \text{if } Margin_{ist} > 0 \\ 0 & \text{if } Margin_{ist} \leq 0 \end{cases}$$

- y_{ist} is the growth of light in constituency i in state s during election term t
- Local linear regressions (Imbens and Lemieux, 2007) restricting sample to an optimal bandwidth around the discontinuity (Imbens and Kalyanaraman, 2011).

Figure: Discontinuity [jump] in winning chances when the victory margin is small.



Main Result: Legislator Gender and Luminosity Growth



- Quasi-random assignment of a female (rather than a male) winner to a constituency increases economic growth by 2 ppt p.a.
- Given average growth in sample period of 7%, the growth premium associated with having a female legislator is 25%

Table: Legislator Gender and Luminosity Growth

	(1)	(2)	(3)	(4)	(5)
	Growth of Light$_{t+1}$				
	Local Linear				Local Quadratic
	IK (h)	h/2	2h	IK (h) with Covariates	IK (h)
Female MLA$_t$	15.25**	16.97*	8.52**	10.53**	17.11*
	[6.12]	[8.96]	[3.79]	[4.40]	[9.42]
R^2	0.03	0.03	0.02	0.75	0.03
N	584	316	980	428	584
Bandwidth	6.68	3.34	13.36	6.68	6.68

Specification Checks

- Pre-determined covariates do not jump at threshold
  - Electoral and demographic characteristics of constituency
  - Lagged outcomes
- McCrary density test for sorting at the zero victory margin
- Control for party of legislator
- Vary bandwidth, rank of women, remove outliers

Spillovers to neighbours

We have shown women are more effective than men at raising growth in their own constituencies.

- We tested for offsetting negative spillovers to contiguous constituencies
- Found none- hence women raise economic performance *overall*.
  - Dep variable changed to growth averaged over neighbours of constituency j (mean of 6).
  - Independent variable is gender of the legislator in j.
  - Imprecisely determined positive effect- consistent with yardstick competition between neighbours (Besley and Case, 1995) and infrastructure spillovers.

Mechanisms 1- Corruption tendencies

- Data: Candidates required to file affidavits which include pending criminal charges
  - 10% women legislators are 'criminal' vs 32% men.
  - This explains 25% of the estimated performance gap (cf Prakash et al. 2017)
- Women appear to have weaker preferences for criminal behaviour
  - Criminal behaviour is correlated with risk-aversion, patience, fairness which exhibit gender differences
  - Andreoni and Vesterlund, 2001; Eckel and Grossman, 2008; Fletschner et al., 2010

Mechanisms 2- Corruption in office

- Once elected, politicians are s.t. a re-election constraint
- Or office may ennoble (Brennan and Pettit, 2002; Benabou and Tirole, 2003)
- We estimate rent-seeking indicated by net asset growth in office (Fisman et al. 2014)
- We estimate that this is 10 ppt p.a. lower among women

Mechanisms 3- Public infrastructure provision

- Administrative data on federally funded but locally implemented village road building scheme from 2000
- No difference in number of road contracts won by women
- But share of incomplete road projects is 22 ppt lower for women
  - Road construction has higher returns for men (Asher and Novosad 2018)
  - Our result shows that women are not only good at serving the interests of women.

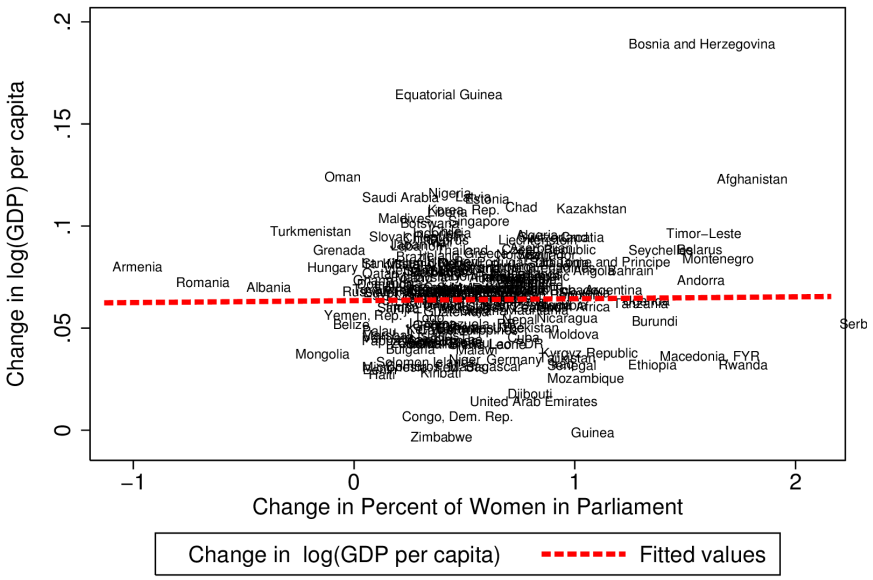
Mechanisms 4- Political opportunism

- Politicians can be opportunistic or intrinsically motivated
  - Mani and Mukand 2007; Cole 2009 vs Brennan and Pettit 2002; Benabou and Tirole 2003
- Opportunistic (electoral) incentives sharper in swing constituencies
- Define swing if previously won by a <5% margin
- Find women only more effective in non-swing constituencies

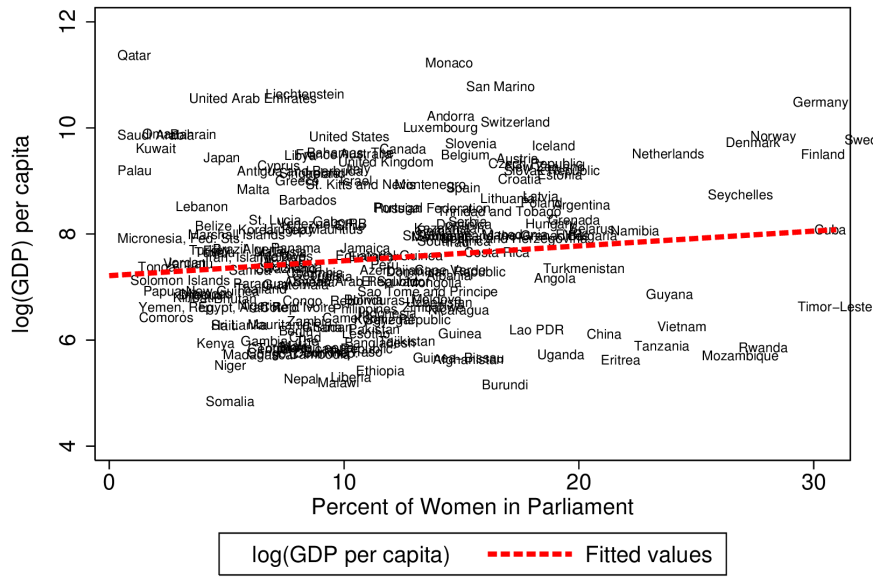
Conclusions

- Women raise economic performance in their constituencies, and overall
  - This result is not apparent in the raw data because of selection
- Mechanisms indicated are lower corruption, higher intrinsic motivation and efficacy in completing infrastructure projects
- To the extent that opportunities for corruption are greater in less developed countries, women may be especially effective relative to men in these countries

Cross-Country Scatter: Women in Parliament & Growth



Averages for 1961–2012. Women in parliament is measured by WDI, ICPSR and the UN.

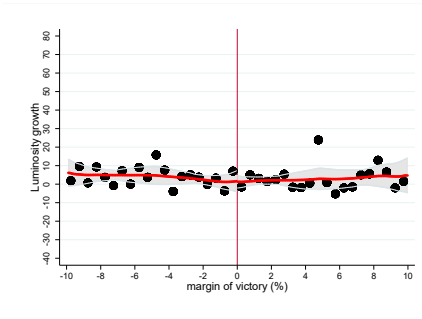


Averages for 1961–2012. Women in parliament is measured by WDI, ICPSR and the UN.

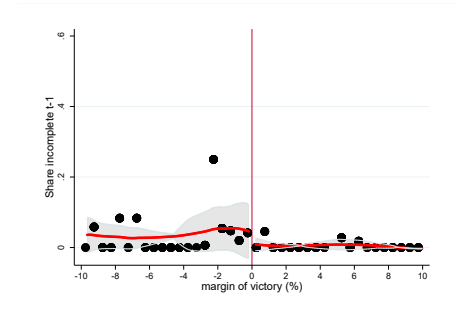
Figure: Raw scatter- does not account for selection

Balance in pre-determined covariates I

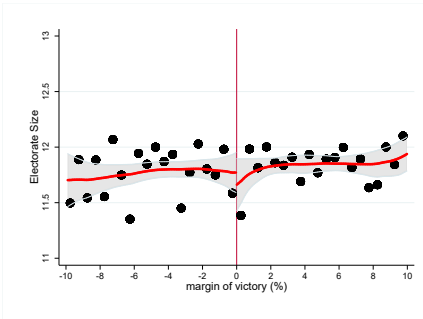
Figure: Continuity Checks



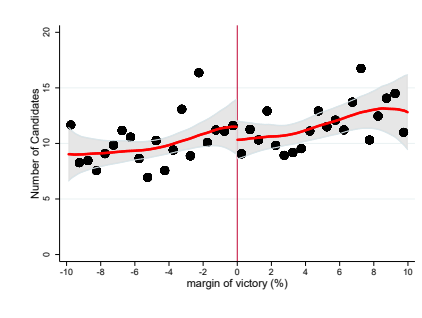
(a) Growth of Light in t-1



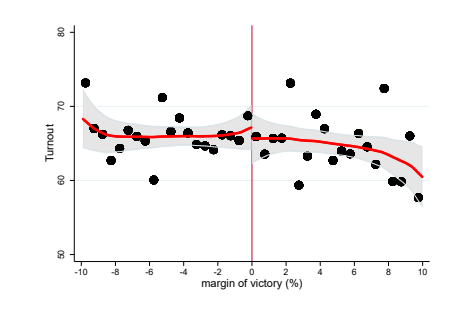
(b) Share Incomplete Roads in t-1



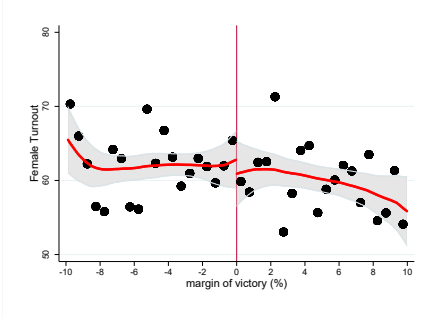
(c) Electorate Size in t-1



(d) Number of candidates in t-1

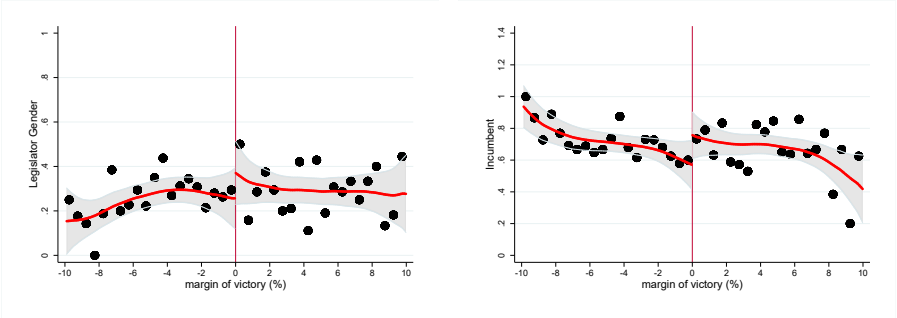


(e) Turnout in t-1



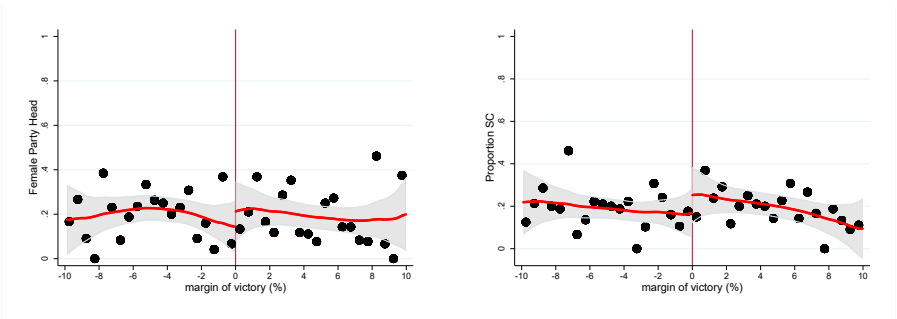
(f) Female Turnout in t-1

Balance in pre-determined covariates II



(g) Female legislator in t-1

(h) Incumbent in t-1

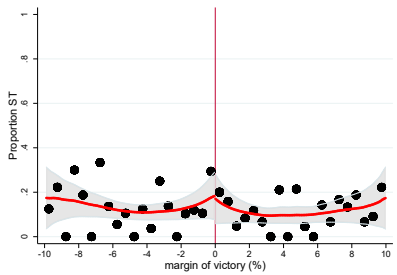


(i) Female party head in t-1

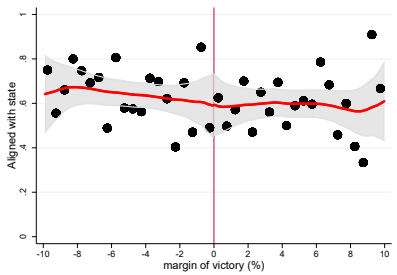
(j) SC-reserved constituency in t-1

Figure: Continuity Checks

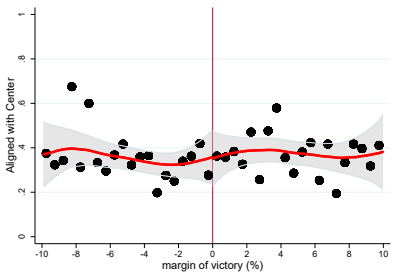
Balance in pre-determined covariates III



(a) ST-reserved constituency in t-1



(b) Aligned with state government in t-1

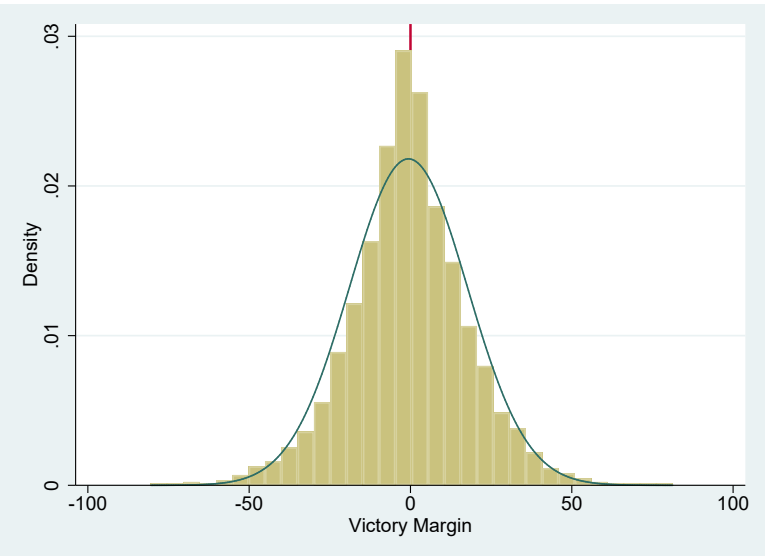


(c) Aligned with central government in t-1

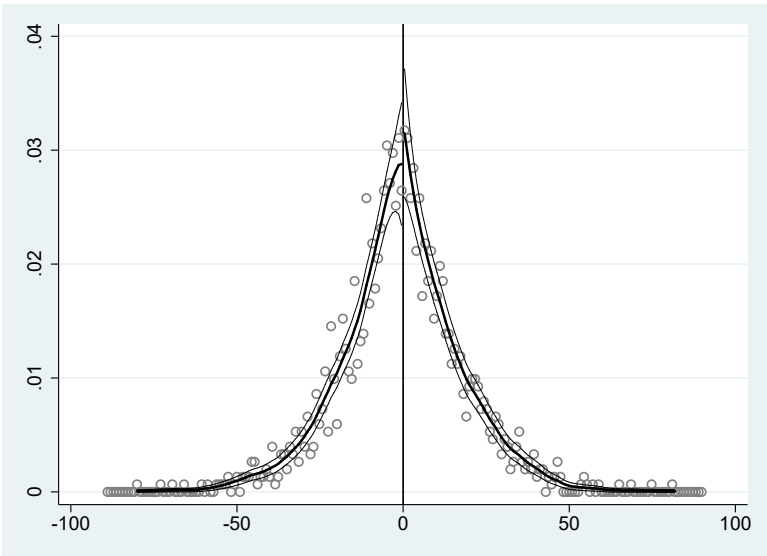
Figure: Continuity Checks

Distribution of running variable

Figure: Density of the Forcing Variable



(a) Density of Victory Margin



(b) McCrary's Density Test

Table: Robustness tests

	(1)	(2)	(3)	(4)
	Growth of Light$_{t+1}$			
	Local Linear			
	Without outliers	With alternative margin	Neighbor sample	Party affilation
Female MLA$_t$	7.18**	14.78***	15.52**	13.52**
	[3.61]	[5.50]	[6.54]	[5.90]
INC				6.32**
				[2.69]
BJP				1.79
				[3.44]
R^2	0.02	0.02	0.03	0.04
N	568	685	553	584
Bandwidth	6.61	7.55	7.4	6.68

Legislator Gender and Asset Growth

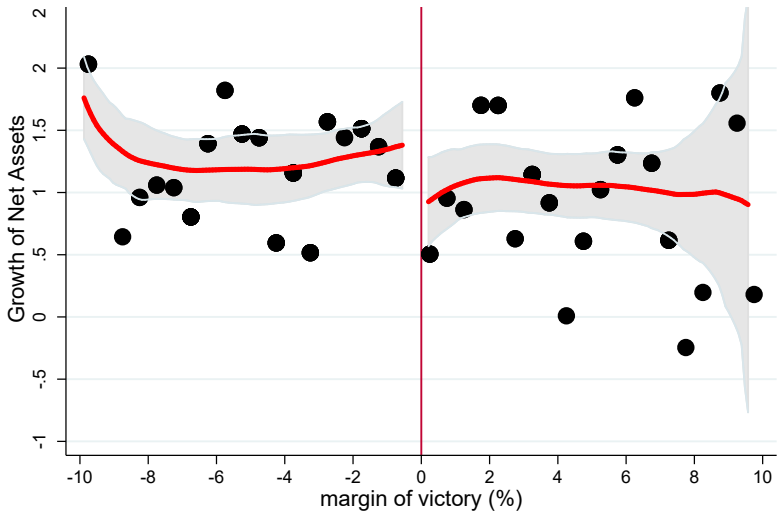


Table: Legislator Gender and Asset Growth

	(1)	(2)	(3)	(4)	(5)
	Growth of Assets				
	Local Linear				Local Quadratic
	IK (h)	h/2	2h	IK (h) with Covariates	IK (h)
Female MLA_t	-0.50*	-0.61	-0.03	-0.48**	-0.76*
	[0.25]	[0.45]	[0.28]	[0.22]	[0.41]
R^2	0.01	0.01	0	0.12	0.01
N	383	176	734	340	383
Bandwidth	3.27	1.63	6.54	3.27	3.27

Legislator Gender and Road Completion

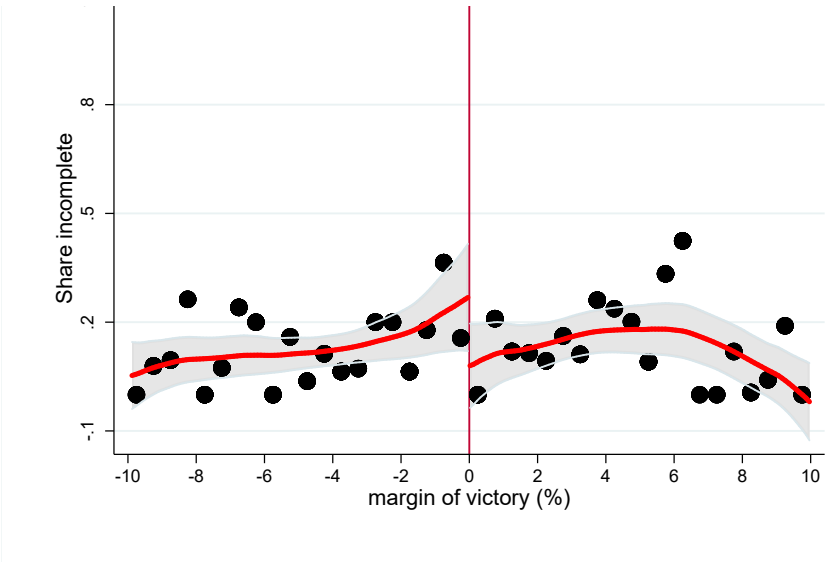


Table: Legislator Gender and Road Completion

	(1)	(2)	(3)	(4)	(5)
	Road Projects				
	Local Linear				Local Quadratic
	IK (h)	h/2	2h	IK (h) with Covariates	IK (h)
	Panel A: Share of Incomplete Road Projects				
Female MLA	-0.22*	-0.26*	-0.17*	-0.22**	-0.35*
	[0.12]	[0.15]	[0.08]	[0.09]	[0.18]
R^2	0.04	0.11	0.03	0.83	0.05
N	122	63	226	67	122
Bandwidth	3.29	1.64	6.58	3.29	3.29
	Panel B: Number of Road Projects Awarded				
Female MLA	-1.13	-1.38	-0.88	0.05	-1.08
	[0.85]	[1.12]	[0.69]	[0.94]	[1.25]
R^2	0.01	0.03	0.01	0.43	0.02
N	255	134	435	110	255
Bandwidth	6.11	3.05	12.21	6.11	6.11

Table: Probability of Winning as a Function of Criminality

	(1)	(2)	(3)
	Probability of Winning		
	Panel A: Full Sample		
	OLS	IK(h)	IK(h) with covariates
Criminal	0.107***	-0.0424	-0.0855
	(0.0189)	(0.0596)	(0.0669)
N	2823	1227	977
	Panel B: Mixed Gender Sample		
Criminal	0.180***	0.0142	-0.0833
	(0.0534)	(0.175)	(0.204)
N	342	142	111

Table: RD Check for Road Completion- Constituency population thresholds

	(1)	(2)	(3)
	Average Village Population	Proportion of Villages with Population>=500	Proportion of Villages with Population>=1000
Female MLA_t	155.1	-0.0764	0.00707
	(500.10)	(0.10)	(0.12)
Bandwidth	10.7	2.27	3.23
N	281	72	104