Maternal Mortality and Women's Political Power

Sonia Bhalotra,[1] Damian Clarke,[2]
Joseph F. Gomes[3] & Atheendar Venkataramani[4]

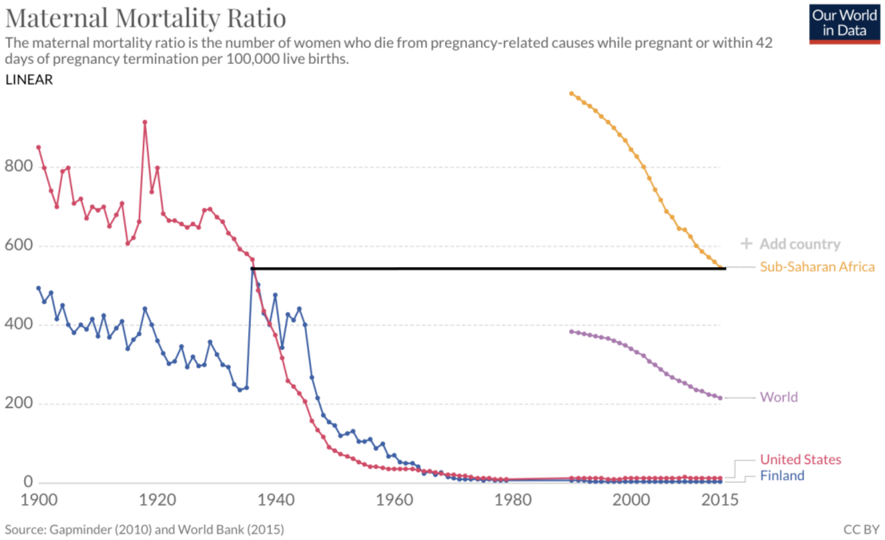
[1]University of Warwick
[2]Universidad de Chile
[3]UCLouvain
[4]University of Pennsylvania

Teaching Material
Journal of the European Economic Association

March 11, 2023

Maternal mortality is among our greatest embarrassments

- A woman's lifetime risk of maternal death is 1 in 190 today – 1 in 5400 in HIC and 1 in 45 in LIC (WHO, 2019)
  - MMR is the "tip of the iceberg" of maternal morbidities which hamper the long-term health and productivity of women
  - For every woman who dies from obstetric complications, another 30 suffer injuries, infection and disabilities (Hunt and Bueno De Mesquita, 2007)
  - There is no single cause of death and disability for men aged 15–44 that is close in magnitude to maternal death and disability
- Considerable variation in levels and rates of decline of MMR conditional upon income (Ritchie 2020)
- Skilled care before, during and after childbirth can prevent about 75% of maternal deaths


Maternal Mortality Ratio
The maternal mortality ratio is the number of women who die from pregnancy-related causes while pregnant or within 42 days of pregnancy termination per 100,000 live births.
Our World in Data
LINEAR
800
600
400
200
0
1900
1920
1940
1960
1980
2000
2015
+ Add country
Sub-Saharan Africa
World
United States
Finland
Source: Gapminder (2010) and World Bank (2015)
CC BY

Why are maternal mortality rates still so high?

- Resource scarcity?
  - Access to prenatal health, skilled attendants, obstetric services, antibiotics
  - But these provisions are relatively low cost
- Knowhow?
  - These technologies have been around for decades
- Barriers to adoption?
  - Policy makers are primarily male and do not prioritise this female-specific condition

Our hypothesis

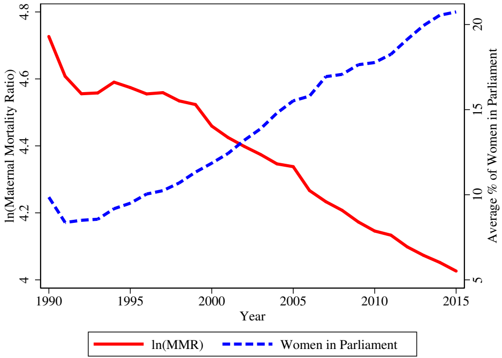
Political Will

- **Raising the share of women in policy can generate sharper MMR reduction**
- Women may have stronger **preferences** over MMR reduction
  - Consistent with models of political identity – Besley and Coate 1997, Chattopadhyay and Duflo 2004
- Women have different **information** over MMR (Ashraf et al., 2021)
- Gender quotas give women **instrumental power**

Trends I

MMR and women in parliament both show unprecedented global trends

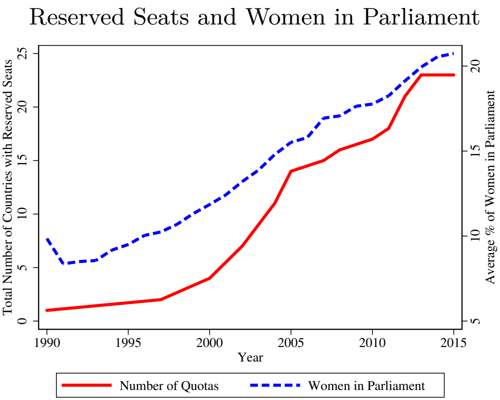
Women in Parliament and Maternal Mortality



- Maternal mortality fell by 44% in 1990–2015
- Share of women in parliament rose 10% to > 20%
- We study whether these trends are causally related

Trends II

Trends in women in parliament track trends in quotas



- Hard to isolate causal effects as share of women in parliament rises smoothly
- We exploit abrupt legislation of quotas sweeping through LICs

Gender quotas

- Unanimous signing of the Beijing Platform for Action at the Fourth World Conference on Women, 1995
  - "A new agenda for women's empowerment"
  - Recommended 30% of parliamentary seats for women

- During 1990–2015, 22 countries adopted quotas of which constitutionally protect reserved seats for women in parliament

- Our identifying assumption is that the timing of quota implementation is quasi-random

Main Results

- Increasing representation of women leaders in national parliaments produces sharp and persistent reductions in maternal mortality
- Auxiliary paper (Bhalotra et al. 2023 (forthcoming as CEPR WP)):
  - Historical records show MMR declined significantly in the late-1930s
  - We show sharper declines in MMR in U.S. states with longer exposure to women's suffrage
- Public health discussion has failed to see the potential for political economy changes driving reductions in MMR
  - Already at scale
  - Addresses two SDGs at once
  - Cost of gender quotas may be low (Baskaran et al. 2021)

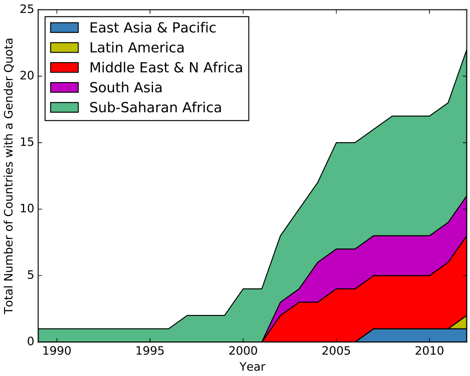
Data and Methods

Data

We generate data for (a maximum of) 178 countries between 1990–2015

1. Maternal mortality data: (see map →)
   - United Nations Mortality Estimation Inter-Agency Group (MMEIG) recently released harmonized annual data for 1990–2015 (summary)
   - We adjust inference for data uncertainty
   - We construct MMR from DHS sisterhood modules
2. Quota data: (see maps of reserved seats → & candidate quotas →)
   - Adoption dates by country from Dahlerup (2005) (Size: →)
   - We crosscheck and update with the Global Database of Quotas for Women
3. Women in parliament:
   - WDI, UN MDG Indicators, ICPSR (Paxton, Green and Hughes, 2008) (Density of quota/non-quota countries → & country-specific trends →)
4. Other:
   - Mechanisms variables, quota predictors including women's rights and political predictors, confounders

Gender quota adoption in 1990–2012 by region



NOTES: Countries passing gender quotas since 1990: Afghanistan, Algeria, Bangladesh, Burundi, China, Djibouti, Eritrea, Haiti, Iraq, Jordan, Kenya, Morocco, Niger, Pakistan, Rwanda, Saudi Arabia, South Sudan, Sudan, Swaziland, Tanzania, Uganda (1989), Zimbabwe.

Empirical Strategy

Flexible event study specification, Jacobson et al., (1993)

$$
\begin{aligned}
Y_{ct} &= \alpha + \sum_{l=2}^{10+} \beta_l^{lead} Quota_c \times 1\{lead_t = l\} \\
&\quad + \sum_{k=0}^{10+} \beta_k^{lag} Quota_c \times 1\{lag_t = k\} + X'_{ct}\gamma + \mu_t + \phi_c + \varepsilon_{ct}.
\end{aligned} \tag{1}
$$

- Identifying assumption: timing of quota implementation is quasi-exogenous
- Robustness to time-varying controls, sample restrictions, population weights
- Cluster standard errors by country

Threats to Identification I

1. Selection into treatment
   - Scrutinize pre-trends in event plots
   - Partial identification (Rambachan & Roth, 2019, Conley et al., 2012)
   - Synthetic controls (Abadie et al., 2010, Cavallo et al., 2013)
   - Synthetic Difference-in-Differences (Arkhangelsky et al., 2021)
   - Adjust for predictors of quota uptake (Krook 2010, Baines & Rubio-Martin 2005)
   - Results for India, where quota assignment was random (Iyer et al., 2012)
   - "Dose response" + examine impacts of candidate quotas

2. Dynamic treatment effects with treatment effect heterogeneity
   - Issue of negative weights attached to some treated units when treatment is staggered over time and treatment effects are heterogeneous
   - De Chaisemartin & D'Haultfoeuille (2020) estimates
   - Provide Goodman-Bacon (2018) decomposition

Threats to Identification II

1. Endogenous changes in composition
   - Gender quotas may alter the composition of mothers giving birth, and this alone can change MMR
2. Measurement issues
   - Uncertainty in MMR data: estimates using a double-bootstrap procedure resampling over the uncertainty intervals to calculate the standard errors
   - Alternate MMR measure from DHS microdata estimates

Results

Main Results

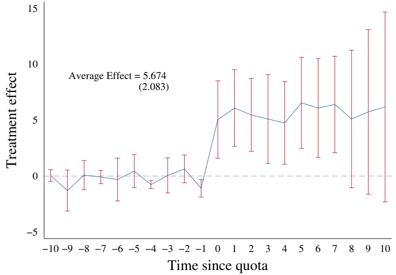
- The de Chaisemartin & D'Haultfoeuille (2020) estimates: Aggregating estimates of outcome changes between adopters and non-adopters, comparing periods surrounding adoption.
- Robust to de Chaisemartin & D'Haultfoeuille (2020) Long Placebos (→)

With Time-varying controls With No Controls

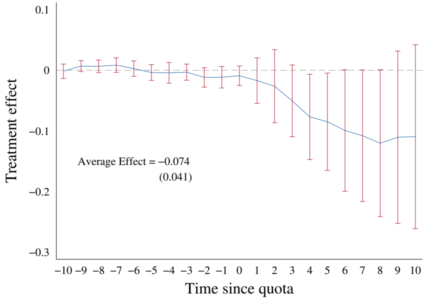
Main Results

- The de Chaisemartin & D'Haultfoeuille (2020) estimates: Aggregating estimates of outcome changes between adopters and non-adopters, comparing periods surrounding adoption.
- Robust to de Chaisemartin & D'Haultfoeuille (2020) Long Placebos (→)

With Time-varying controls With No Controls



(a) % women in parliament

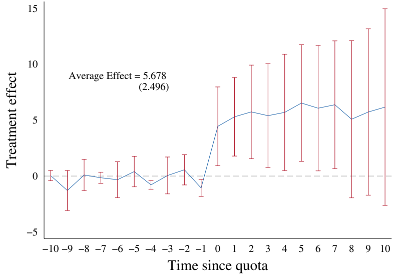


(b) ln(maternal mortality ratio)

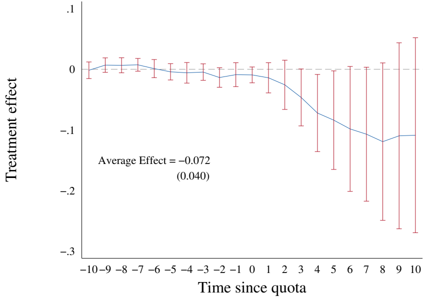
Main Results

- The de Chaisemartin & D'Haultfoeuille (2020) estimates: Aggregating estimates of outcome changes between adopters and non-adopters, comparing periods surrounding adoption.
- Robust to de Chaisemartin & D'Haultfoeuille (2020) Long Placebos (→)

With Time-varying controls With No Controls



(a) % women in parliament



(b) ln(maternal mortality ratio)

Effect sizes

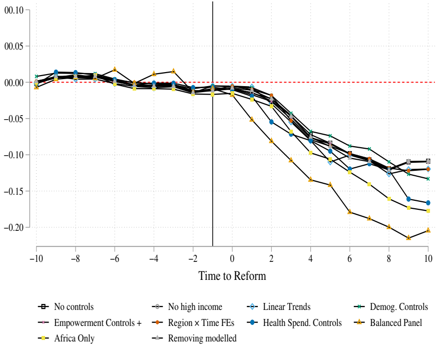
- Following quota adoption % of Women in parliament:
  - Saw an increase of 5.7–6.6 pp
  - Relative to the baseline average in 1985–1990 of 9%, this represents about a 64% increase.
- Following quota adoption MMR:
  - Saw a decrease of 7.2–12.7%
  - Benchmark: MMR declined 44% in the last 25 years (worldwide)
  - Perspective: Achieving similar $\approx$ 10% decline would require a $\sim$30% increase in GDP
- The standard event study (→) estimates provide similar estimates.
- IV estimation (LIML; Anderson-Rubin; Conley et al. 2012 (→)) :
  - A 1 pp increase in women in parliament reduces MMR by 1.5–2%.
  - Back of the envelope estimates: adoption of quotas in all non-adopting countries could reduce MMR in Africa by 7.1%, in Oceania by 1.6%, in Asia by 1.3%, in the Americas by 0.8%, and in Europe by 0.1%.

Heterogeneity +

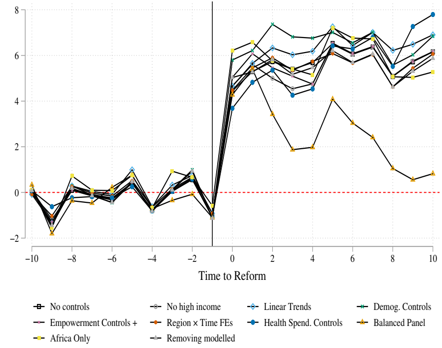
- MMR decline is increasing in exposure duration
  - Ten years out, MMR is 13% lower in quota countries
- Clear "Dose-response": MMR decline increasing in quota size (→ & →)
  - Quotas of < 10%: MMR decline of 0.6%
  - Quotas of 20–30%: MMR decline of 13.4%
- MMR decline is increasing in baseline level of MMR (→ & →)
  - MMR declines by 8% in low-baseline
  - 16% in high-baseline countries
- Candidate List quotas (→ & →)
  - Smaller increases in % of women in parliament than reserved seat quotas
  - No impact on MMR
- Sub-national estimates for India (→)
  - Gender quotas at village level and MMR at state level
  - Confirms our main finding of quota-led declines in MMR of 14.2%

Investigate Sensitivity to Alternative Specifications and Estimators

Robustness



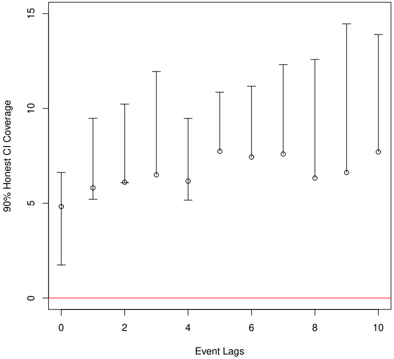
(a) ln(MMR)



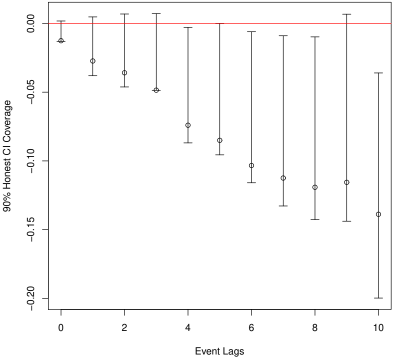
(b) % Women in Parliament

Hollow black square coefficients correspond to baseline de Chaisemartin and D'Haultfoeuille (2020) estimates without controls. Alternatives are labelled in the graph legend. Balanced panel refers to sample consisting only of countries which adopted quotas prior to 2005 and as such exist in the entire range of quota post-treatment lags. "Removing modelled" removes from the sample any countries based only on modelled maternal mortality data. "Empowerment Controls +" controls for 25 variables measuring predictors of quotas indicated by the political science literature, and measures of empowerment and women's rights. Controls are consistently specified using a baseline index based on z-scores of each variable interacted with post-quota adoption indicators. For more detailed alternative specifications see → & →.

Post-quota coefficient bounds based on "Honest DiD"



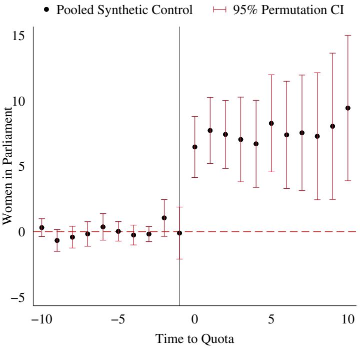
(a) Percent of women in parliament



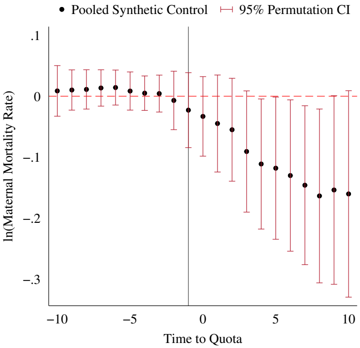
(b) ln(maternal mortality ratio)

If standard tests of pretrends are underpowered, we might fail to capture the evolution of a relevant unobservable trend. We address this using Rambachan and Roth (2020)'s "Honest DiD" procedure to estimate bounds on the dynamic effects. Instead of assuming parallel trends in quota and non-quota countries, we construct valid 95% CIs under the assumption that post-quota trends in quota countries relative to non-adopters would have followed their prevailing path from the pre-quota period, permitting violations of standard parallel trend assumptions.

Matched synthetic controls



(a) Percent of women in parliament



(b) ln(maternal mortality ratio)

Coefficients estimated using a pooled synthetic control approach: for each quota country a synthetic control is chosen based on leads of the variable of interest (up to period -3), over-weighting units which come from the same region as the country of interest. Averages of each lag and lead are taken across all treatment–synthetic control matches. Inference is conducted by permutation, where each permutation consists of randomly assigning the same distribution of quota reforms (blocked by countries to ensure identical treatment paths over time) but to non-reforming countries. We also generate adoption-specific Synethtic DID (→)

Single-Coefficient Estimates: Table

	(1)	(2)	(3)	(4)	(5)	(6)
	Outcome: ln(MMR)					
Method A: Two-way FE Model						
Reserved Seats	-0.082	-0.156*	-0.075	-0.106*	-0.071	-0.246*
	(0.051)	(0.090)	(0.056)	(0.056)	(0.055)	(0.130)
Method B: ***DID_M*** **Estimates**						
Reserved Seats	-0.072*	-0.074*	-0.072*	-0.074*	-0.080*	-0.082
	(0.043)	(0.043)	(0.043)	(0.043)	(0.047)	(0.050)
Method C: Pooled Event Study						
Reserved Seats	-0.079**	-0.154	-0.076*	-0.106*	-0.058	-0.232
	(0.039)	(0.100)	(0.042)	(0.058)	(0.045)	(0.166)
Method D: Synthetic DID						
Reserved Seats	-0.127*	-0.116*	-0.129*	-0.103	-0.128	-0.099
	(0.067)	(0.069)	(0.072)	(0.064)	(0.080)	(0.062)
Negative Weights	-0.005	-0.143	-0.019	-0.006	-0.012	-0.445
Observations	4335	4241	4335	4241	4335	4241
Controls (baseline):						
Empowerment & Predictors		Y				Y
Democracy			Y			Y
Resources				Y		Y
Region×year FE					Y	Y

Single-Coefficient Estimates: Table

	(1)	(2)	(3)	(4)	(5)	(6)
	Outcome: Women in Parliament					
Method A: Two-way FE Model						
Reserved Seats	5.793***	6.333	6.071**	6.077**	6.038***	9.207
	(2.167)	(4.521)	(2.478)	(2.645)	(2.145)	(6.266)
Method B: DID_M **Estimates**						
Reserved Seats	5.678**	5.674***	5.678**	5.674***	5.167**	5.128***
	(2.222)	(1.880)	(2.222)	(1.880)	(2.154)	(1.872)
Method C: Pooled Event Study						
Reserved Seats	6.622***	7.179	6.940***	7.079**	6.242***	9.668
	(1.862)	(5.082)	(2.015)	(3.314)	(1.891)	(8.341)
Method D: Synthetic DID						
Reserved Seats	8.281***	7.523***	8.361**	7.950**	7.661***	7.014**
	(2.611)	(2.344)	(3.597)	(3.246)	(2.552)	(2.724)
Negative Weights	-0.005	-0.143	-0.019	-0.006	-0.012	-0.445
Observations	4335	4241	4335	4241	4335	4241
Controls (baseline):						
Empowerment & Predictors		Y				Y
Democracy			Y			Y
Resources				Y		Y
Region×year FE					Y	Y

Single-Coefficient Estimates: Discussion

- Tables show that summary effect sizes from alternative estimators are similar in magnitude.
  - Hence, potential bias in the single coefficient TWFE model (Goodman-Bacon, 2021; de Chaisemartin & D'Haultfoeuille, 2020) is small.
  - Borne by Goodman-Bacon (2021) decomposition of the identifying variation into its treatment vs. pure control and differential timing components
  - The drop in MMR (of about 7%) is similar when we compare early to late adopters (prior to adoption) to that obtained when comparing aggregate TWFE estimates of treated vs. never treated countries, albeit the weight attached to the latter is much greater (Table →).
  - Figure (→) reveals estimates closely clustered around the average effect, which suggests that the observed reduction in MMR is observed broadly.
  - This is confirmed in by leave-one-out estimates (→ & →).

Investigate Endogenous Quota Adoption

Selection into Gender Quota legislation

- Is legislation passed when social preferences are ripe? (Doepke and Zilibotti, 2005)
  - We directly investigate if results derive from social preferences evolving gradually to favor gender equality
  - To measure social preferences and gender progressiveness in the policy environment, we use 18 indicators of gender progressiveness in the political, economic and civil domains (→)
  - The placebo coefficients (de Chaisemartin and D'Haultfoeuille, reject a positive pre-trend for each of the 18 indicators
- We also rule out estimated impacts of quota adoption might instead reflect political changes using quota predictors from political science (Krook, 2010; Baines and Rubio-Marin, 2005) →
- We also show full dynamic estimates with inference conditioning on above variables → & →

Additional Robustness Checks

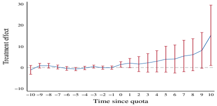
- Endogenous changes in the composition of women giving birth?
  - No significant shifts in composition in DHS psuedo-panel of 10.8m births for 3m women from 82 countries across 34 different years (→ & →)
  - Estimates robust to controlling for time-varying measures of the age and educational composition of mothers. (Slide 20, → & →)
- Measurement of MMR
  - Robust to using levels of MMR instead of logs (see tables above)
  - Robust to removing countries with all imputed (slide 20)
  - Bootstrap SEs re-sampling over the provided uncertainty intervals (→)
  - Measure MMR from survey-based report of sister deaths of DHS respondents following Bhalotra and Clarke (2019) (→ & →)
- Sensitivity to sample and clustering
  - Dropping 7 countries passing quotas after 2005 creating balanced sample with the baseline window of 10 years pre and post quota (slide 20)
  - Re-estimation of the main results on common sample
  - Estimating event studies with two-way clustering of standard errors (Cameron et al., 2011) by both country and year (→ & →)

Mechanisms

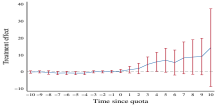
Mechanisms

- Reproductive Health Coverage: Quotas increased the three dimensions that WHO recommends universal coverage of, for MMR reduction:
  (DIDm: →; ES: →; Honest DID: →; Table: →)
  - Skilled birth assistance (5.8 pp)
  - Prenatal care (4.7 pp)
  - Access to contraception (1.7, but less precise)
- No increase in GDP or development assistance for maternal health
- Tendency for health spending to rise
- No significant changes in women's rights, pro-female legislation (abortion) or participation in spheres other than political.
- Fertility (see above links):
  - 6–7% decline in the total fertility rate (consistent with the observed expansion of contraceptive coverage and women's schooling)
  - (Noisy) increase in birth spacing of 2 months
- Education (→):
  - Attainment increases significantly more for girls than for boys
  - 0.5 years increase in the education of young women (15–19 age)

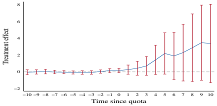
Mechanisms: de Chaisemartin and D'Haultfoeuille estimates



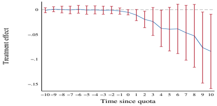
(a) Antenatal care



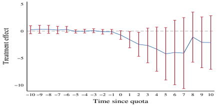
(b) Attended births



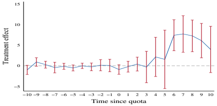
(c) Modern contraception



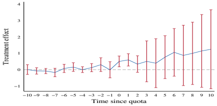
(d) ln(fertility)



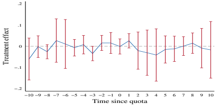
(e) Teen pregnancy



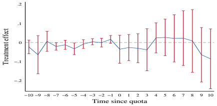
(f) Birth spacing



(g) Health expt. as a % of GDP



(h) % development assistance for health going to maternal health



(i) ln(GDP per capita)

Back

Mechanisms: Fertility – Parity and Scale Effects

- Since high fertility is associated with higher MMR risk per birth, a decline in fertility can explain observed decline in maternal death risk per birth.
- In addition, a decline in fertility will have a scale effect, tending to reduce the number of maternal deaths at any level of risk per birth.
- Back-of-the-envelope calculation (→) of number of maternal deaths averted because of quotas from baseline of 92,928 total deaths per year:
  - 8085 deaths if only considering the MMR (per birth) channel,
  - 5669 deaths if only considering the scale effect of fertility,
  - 13,260 deaths if considering the total effect of quotas on the maternal death count.
- The scale effect (not captured in MMR decline) is roughly 43% of the total change in the death count, and 64% of the decline in deaths captured by MMR.

Political Change

- We already ruled out that estimated impacts of quota adoption reflect political changes using quota predictors from political science
- We observe greater political stability post quota adoption (→):
  - Significant increase in the years that a regime is in power
  - Corresponding decline in the probability of regime transition.
- Our results hold conditional upon controls for regime stability (→ & →)
- Quotas and democratization :
  - The main estimates shown before control for pre-quota democratization interacted with a post-quota trend
  - We perform a stricter test, controlling for a full set of lags and leads to democratic transitions (→).
  - No evident tendency for quota adoption to increase democratization, or for democratization to lower MMR

Other population health outcomes

- Do gender quotas improve health in general (→ & →) ?
  - No significant impact on male reproductive age mortality, TB mortality, or infant mortality
  - Some evidence of adult female mortality declining, but not statistically significant.
- Do women leaders improve MMR at the cost of neglecting something else?
  - No deterioration in the other population health outcomes – no evidence of substitution (see above)
  - Gender quotas more effective at improving women's reproductive health and survival than in addressing other population health indicators.
  - Both priorities and the potential to target women can explain why gender quotas have their largest impact on MMR.

Resources and resource allocation

- No evidence of quota adoption increasing available resources e.g. GDP, development assistance for health going to maternal health (see previous slides)
- GDP has a significant direct impact on MMR (→)
  - A 1% increase in current GDP is associated with a MMR decline of 0.33%
  - A very crude back-of-the-envelope calculation assuming log-linearity (conditional on country and year FEs) suggests that to achieve the roughly 10% reduction in MMR that we estimate as flowing from quota adoption, GDP would have to increase by nearly 30%.
- Some evidence of an increase in state health expenditure (→ & →).
- However, MMR reduction does not rely upon increasing public expenditure.

Evidence on mechanisms from previous research

The things that (women) leaders can do:

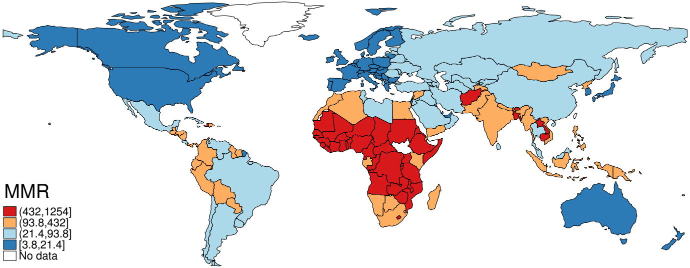
- Bring family and health issues to parliament (Clayton et al., 2017, Baskaran and Hessami 2019, Bhalotra et al. 2019, Lippmann 2020)
- Initiate pro-woman legislation (Clots-Figueras 2012)
- Increas likelihood of women citizens being to be heard (Iyer et al., 2012; Parthasarathy et al., 2019).
- Women are better at consensus-building, which is relevant if they want not only to generate debate but to achieve policy action (Gagliarducci and Paserman 2016)
- Bring resources to domains they prioritize, such as health (Miller, 2008; Bhalotra and Clots-Figueras, 2014).

Conclusions

- Current international strategy to address MMR focuses on extending reproductive health coverage
- No recognition of political economy constraints that impede MMR reduction
- We argue that, in contrast to most public health outcomes, maternal mortality is unique to women and thus easy to overlook in a male-dominated parliament, but naturally targeted towards or "assignable" to women
- We provide the first systematic analysis of the impacts of gender quotas across countries
- The decline in MMR of 44% since 1990 fell well short of the MDG target decline of 75% (Hogan et al., 2010; Kassebaum et al., 2014)
- Yet the new SDGs have set a higher target (of less than 70 per 100,000 live births by 2030).
- Clear flag that some policy innovation is needed – we suggest gender quotas.

Appendices

Maternal mortality ratio: 1990–2015

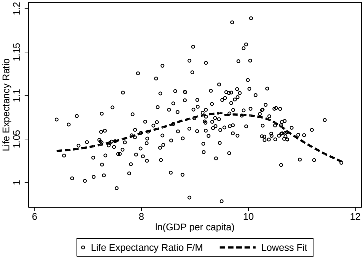


- 0.32m maternal deaths in 2015; tip of iceberg
- MMR in SSA today exceeds MMR a century ago in richer countries
- MDG not met (target 75%, actual 44%) but SDG more ambitious
- "Doubling down" with SDG highlights need to identify limitations of existing policies
- Role of income maybe limited (→).

Back

The role of income may be limited

(a) Female LE and GDP

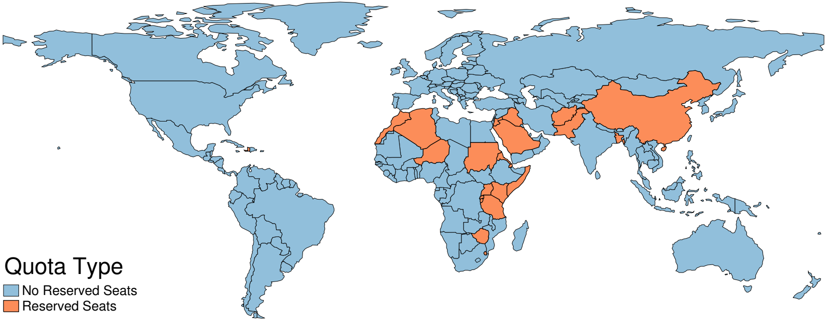


(b) Female LE advantage & GDP

- Positive association of life expectancy and GDP
- Weak association of *gender gap* in life expectancy and GDP

Back

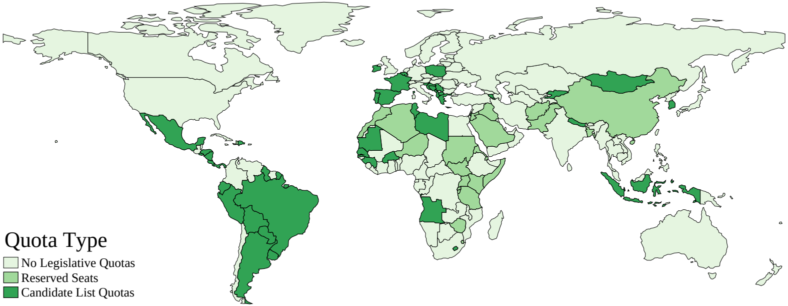
Reserved Seat Quota Coverage: 1990–2015



NOTES: Source: Dahlerup (2005), quotaproject.org

Back

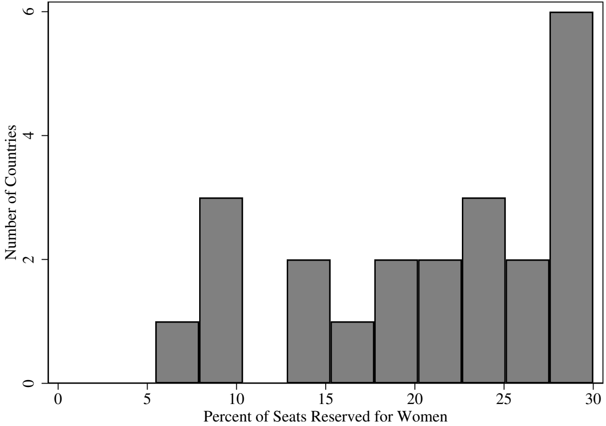
Global distribution of gender quotas by type



Source: quotaproject.org

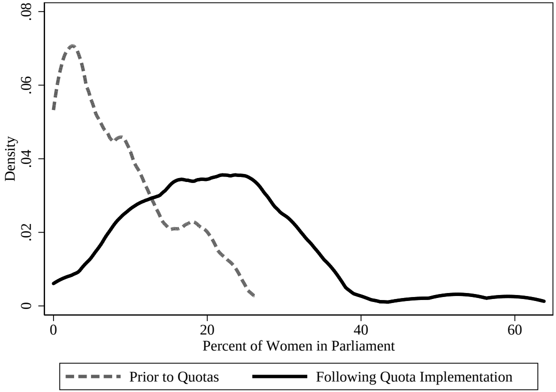
Back

Reserved Seat Quota Sizes



Back

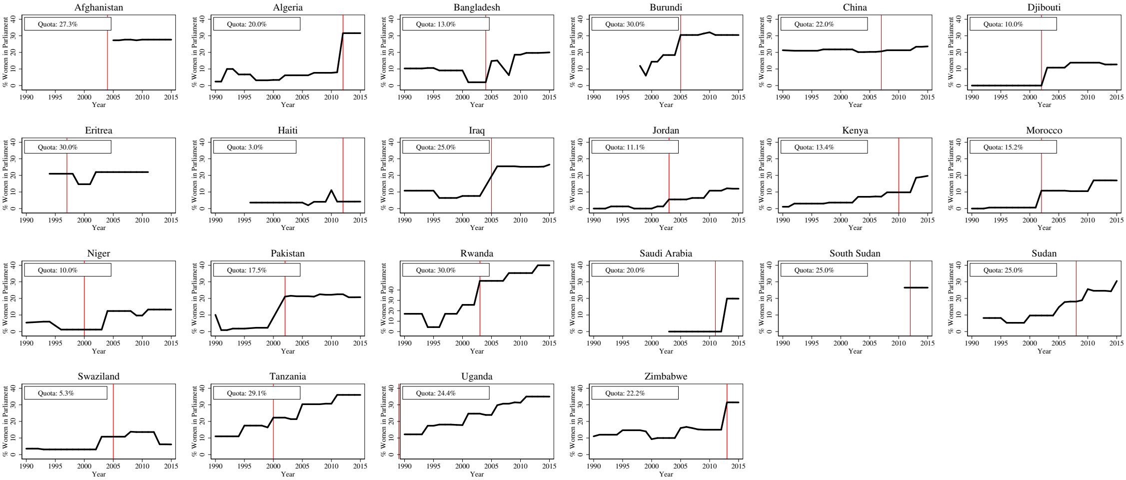
% of Women in Parliament before vs after Quota Legislation



NOTES: Density plots, sample of countries which adopted a reserved seat quota

Back

Country-Specific Trends in Women's Share in Parliament



Red vertical lines display the recorded date of the passage of a reserved seat quota for women in the national parliament. (Back)

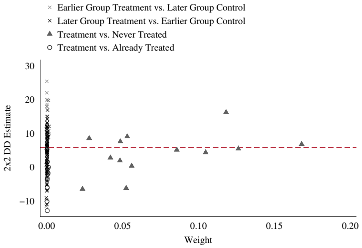
Goodman Bacon (2021) Decomposition

Weights and Estimates from the Goodman Bacon (2021) Decomposition

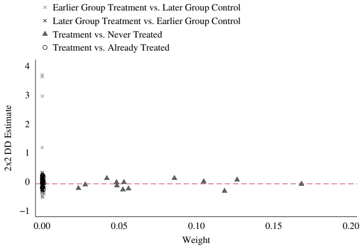
	Weight	Estimate
Panel A: Women in Parliament		
Earlier Treated vs. Later Control	0.024	9.277
Later Treated vs. Earlier Treated	0.015	6.614
Treated vs. Never Treated	0.954	5.739
Treated vs. Already Treated	0.007	-0.614
Difference-in-difference Estimate	5.797	
Panel B: ln(MMR)		
Earlier Treated vs. Later Control	0.024	-0.067
Later Treated vs. Earlier Treated	0.015	-0.007
Treated vs. Never Treated	0.954	-0.076
Treated vs. Already Treated	0.007	-0.018
Difference-in-difference Estimate	-0.075	

Decomposition: majority of weights (96.4%) drawn from treated-versus untreated comparison (Back)

Goodman Bacon (2021) Decomposition Plot



(a) Percent of women in parliament

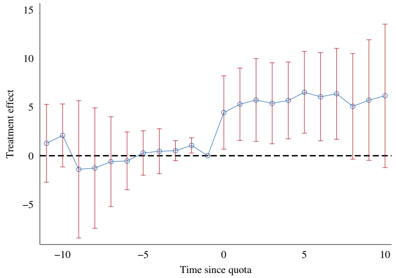


(b) ln(maternal mortality ratio)

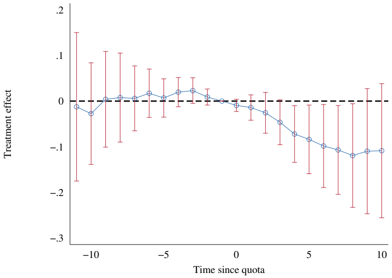
Goodman-Bacon (2021) decomposition based on 2×2 DID models. Plotted × symbols represent cases where identification is drawn from timing-only comparisons. Darker shaded × symbols represent comparisons between earlier-treated units (as treatment) and later-treated units (as controls). Lighter shaded × symbols represent (problematic) comparisons between later-treated units (as treatment) and earlier treated units (as controls). Triangular symbols represent comparisons between treated (quota adopters) versus untreated pure controls (never adopters), with alternative estimates depending on the timing of adoption. Hollow circles represent comparisons between units which adopted quotas before the beginning of the panel versus units which later became treated. Here each point on the graph considers an alternative adoption time period. The global decomposition for each of these four groups is given in the previous slide.

Back

Long Placebos



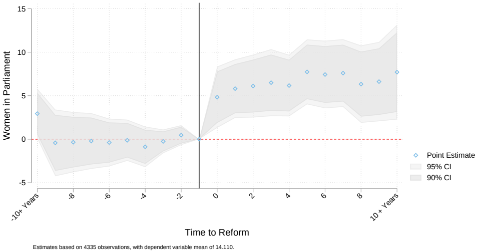
(a) % women in parliament



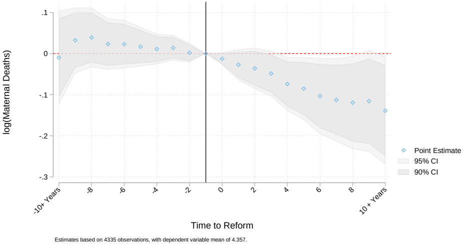
(b) ln(maternal mortality ratio)

- Results replicate main spec using 'long placebos' described in de Chaisemartin & D'Haultfoeuille (2020) which consider movements in pre-periods consistently compared with period -1, rather than short placebos based on movements of one period (eg from -5 to -4, or -3 to -2) during the pre-treatment period. Post-treatment estimators are identical in both cases. (Back)

Event studies for Reserved seats Quotas



(a) Women in parliament

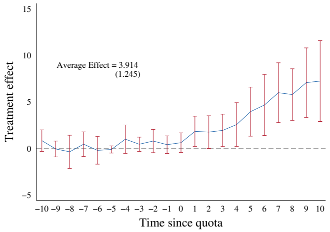


(b) ln(MMR)

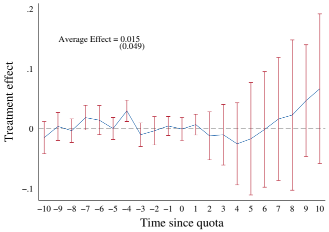
- Women's share in parliament jumps discontinuously immediate upon the quota, by 5 ppt, 55%
- Sharp decline in MMR which grows over time (∼-8 to -10%)

(back)

Candidate List Quotas



(a) Women in parliament

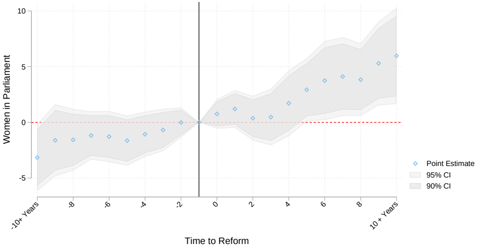


(b) ln(MMR)

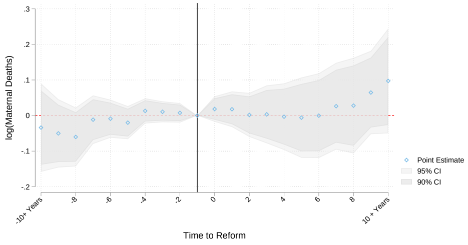
- de Chaisemartin and D'Haultfoeuille (2022)'s DIDM estimates. Average post-quota estimates and their block bootstrapped standard errors are provided in text on the plot. Countries implementing candidate list quotas in the period under study are Albania, Angola, Argentina, Armenia, Belgium, Bolivia, Bosnia and Herzegovina, Brazil, Burkina Faso, Costa Rica, Croatia, Dominican Republic, Ecuador, El Salvador, France, Greece, Guinea, Guyana, Honduras, Indonesia, Ireland, South Korea, Kyrgyz Republic, Lesotho, Macedonia, Mauritania, Mexico, Mongolia, Montenegro, Nepal, Nicaragua, Panama, Paraguay, Peru, Poland, Portugal, Senegal, Serbia, Slovenia, Spain, Tunisia and Uruguay

(Back)

Event studies for Candidate List Quotas



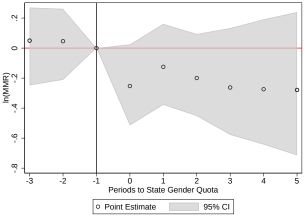
(a) Women in parliament



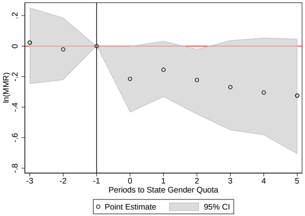
(b) ln(MMR)

(Back)

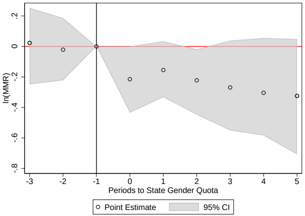
Reserved seats for women in large Indian states (Back)



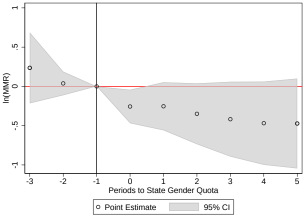
(a) Unweighted Estimates



(b) Weighted Estimates

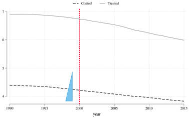


(c) Unweighted Estimates (with linear trends)

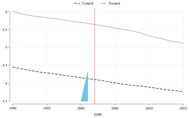


(d) Weighted Estimates (with linear trends)

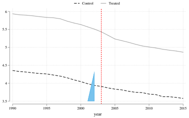
Adoption-specific Synthetic DID (Arkhangelsky et al., 2021) (Back)



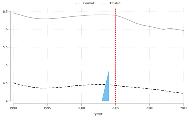
(a) Quota Year 2000 (trends)



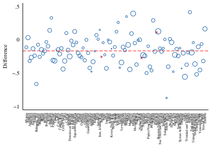
(b) Quota Year 2002 (trends)



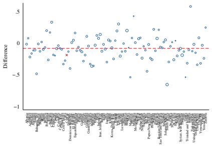
(c) Quota Year 2003 (trends)



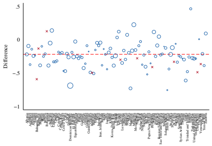
(d) Quota Year 2005 (trends)



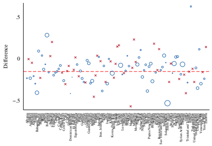
(e) Quota Year 2000 (weights)



(f) Quota Year 2002 (weights)



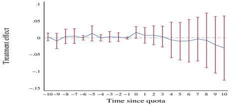
(g) Quota Year 2003 (weights)



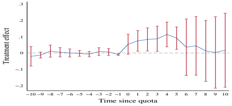
(h) Quota Year 2005 (weights)

Top (lower) panels display average MMR outcomes in treated & synthetic control units, along with time-specific weights calculated (weights assigned to each untreated country (size of points), & state-by-state observed differences calculated as $\hat{\delta}_{tr} - \hat{\delta}_i$). The vertical dotted line presents the weighted averages of these differences (the estimated effect). Observations with 0 weight are denoted using an x symbol. Full synthetic DID estimates are based on weighted averages of adoption year specific estimates. Here we only present the first 4 adoption years (adoption years 2010, 2012, 2013 not displayed).

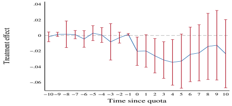
Women's rights and social standing: (cont. on next slide)



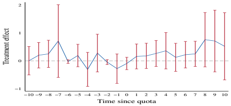
(a) Women's Civil Liberties Index



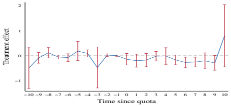
(b) Women's Political Participation Index



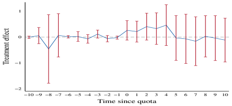
(c) Exclusion by Gender Index



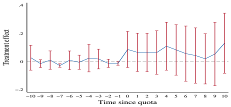
(d) Relative freedom of movement for women



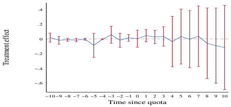
(e) Relative access to justice for women



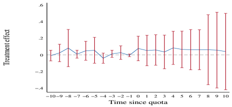
(f) Relative freedom of discussion for women



(g) Power distributed by gender

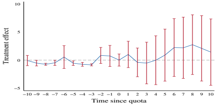


(h) Freedom from forced labor for women

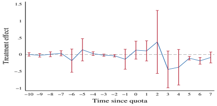


(i) Property rights for women

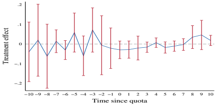
Women's rights and social standing (Back)



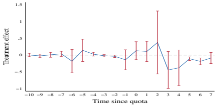
(a) Women Business and Law index



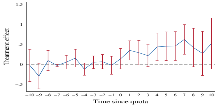
(b) Women Ministers



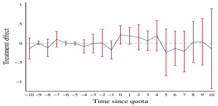
(c) Women's Protests



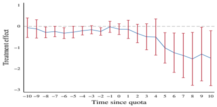
(d) CIRI Women's Social Rights



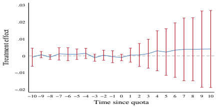
(e) CIRI Women's Political Rights



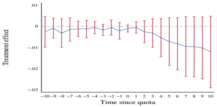
(f) CIRI Women's Economic Rights



(g) Female Labor Force Participation

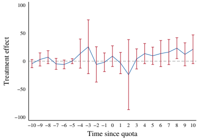


(h) Abortion (Save Mother's Life)

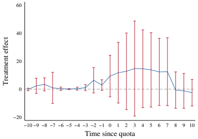


(i) Abortion (Fetal Impairment)

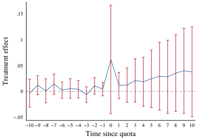
Quota predictors in Poli. Sci. literature



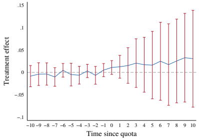
(a) Overseas Devel. Assistance p.c.



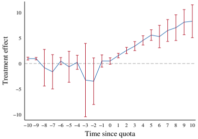
(b) Peace Keeper Presence



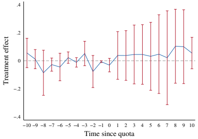
(c) Right Wing Exec.



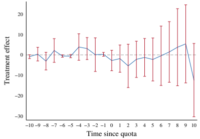
(d) Left Wing Exec.



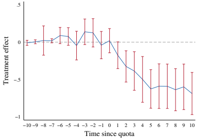
(e) Years in Power



(f) Herfindahl Index



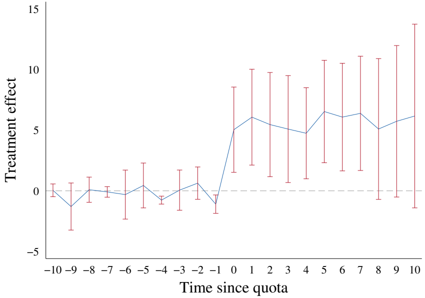
(g) Opposition's Vote Share



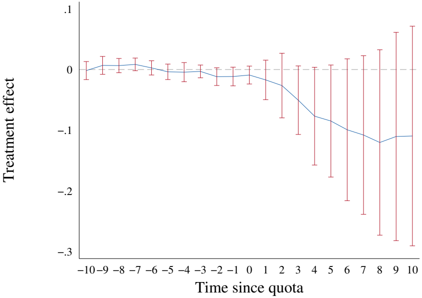
(h) Regime in Transition

Back1 Back2

Conditioning on potential quota predictors



(a) Percent of women in parliament

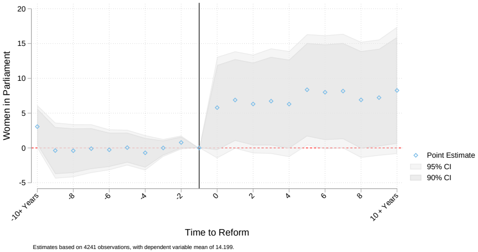


(b) ln(maternal mortality ratio)

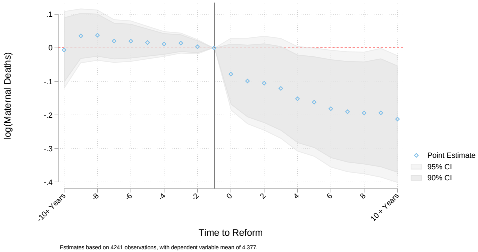
Plots present de Chaisemartin and D'Haultfoeuille (2020) DIDM estimates replicating main specs, however now controlling for indexes constructed from baseline measures of 7 potential predictors of quota timing from the political science literature and for 18 indicators of women's rights interacted with post quota indicators. Two separate index $\times$ post quota variables are constructed given different phenomena of interest: a first index considering quota predictors, and a second considering empowerment controls. Standard errors are based on a block bootstrap by country.

Back1 Back2

Conditioning on potential quota predictors



(a) Percent of women in parliament



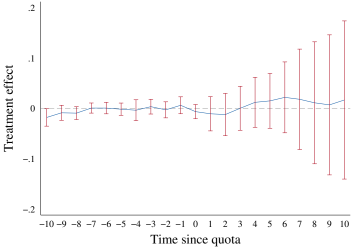
(b) ln(maternal mortality ratio)

Standard Event studies replicating figures in last slide. These control for indexes based on baseline measures of 7 potential predictors of quota timing from the political science literature and for 18 indicators of women's rights interacted with post quota indicators. Two separate index×post quota variables are constructed given different phenomena of interest: a first index considering quota predictors, and a second considering empowerment controls. Point estimates of the lag and lead terms in the event study specification described in equation 1 are presented, along with their 95% CIs. Estimates are conditional on country and year fixed effects. Time periods greater than 10 years from the reform date are displayed as a single "10 +" indicator. Standard errors are clustered by country. The omitted base category is taken as 1 year prior to the reform, indicated by the solid vertical line.

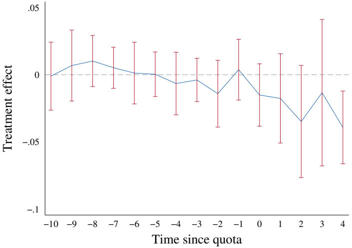
Back1 Back2

MMR decline increasing in size of Quota

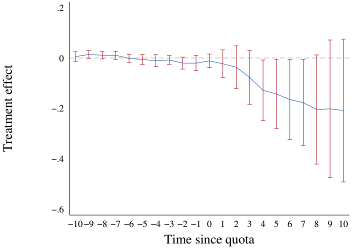
Back



(a) Quota Size: 0–10



(b) Quota Size: 10–20



(c) Quota Size: 20–30

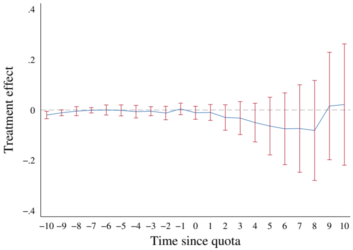
Impacts of reserved seats by Quota Size

Back

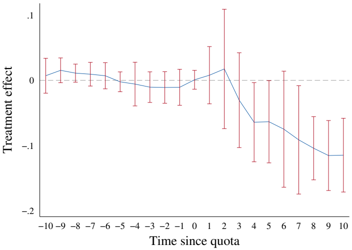
	% Women in Parliament			ln(Maternal Mortality Ratio)			Maternal Mortality Ratio		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel B: Intensity by Quota Size									
Reserved Seats	5.793***			-0.082			-106.107**		
	[2.167]			[0.051]			[43.036]		
Reserved Seats × Quota Size		0.290**			-0.005			-6.421***	
		[0.115]			[0.003]			[2.352]	
Reserved Seats (0-10]%			2.809**			-0.006			-25.035
			[1.247]			[0.048]			[27.354]
Reserved Seats (10-20]%			7.516***			-0.069			-60.227**
			[2.291]			[0.074]			[28.187]
Reserved Seats (20-30]%			6.810*			-0.134			-181.188**
			[3.642]			[0.082]			[76.308]
Mean of Dep. Var.	14.110	14.110	14.110	4.357	4.357	4.357	233.425	233.425	233.425
Observations	4335	4335	4335	4335	4335	4335	4335	4335	4335
Number of Countries	178	178	178	178	178	178	178	178	178
R-Squared	0.465	0.468	0.467	0.547	0.547	0.548	0.270	0.288	0.285

Difference-in-differences (two-way fixed effect) estimates of the impact of reserved seats in parliament on women in parliament (columns 1-3), the log of the maternal mortality ratio (columns 4-6), and MMR in levels (columns 7-9) are displayed. In each case country and year fixed effects are included. Baseline two-way fixed effect models are included in columns (1), (4) and (6), and then models studying heterogeneous impacts are presented there-after. Standard errors clustered by country are displayed in parentheses. * p<0.10; ** p<0.05; *** p<0.01.

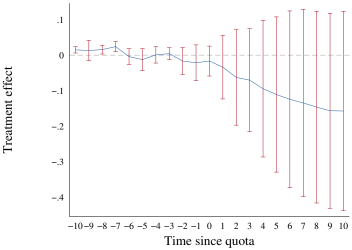
MMR decline increasing in baseline MMR Back



(a) "Low": MMR < 400



(b) "Medium": MMR $[400, 800)$



(c) "High": MMR ≥ 800

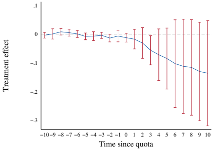
Heterogeneity by baseline MMR

	% Women in Parliament			ln(Maternal Mortality Ratio)			Maternal Mortality Ratio		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Intensity by Baseline MMR									
Reserved Seats	5.793***			-0.082			-106.107**		
	[2.167]			[0.051]			[43.036]		
Reserved Seats × Baseline MMR		1.008**			-0.020**			-30.209***	
		[0.420]			[0.010]			[6.219]	
Reserved Seats (Low Baseline MMR)			4.727*			-0.077			18.191
			[2.548]			[0.051]			[21.456]
Reserved Seats (Mid Baseline MMR)			2.994*			-0.024			-84.875***
			[1.563]			[0.061]			[17.319]
Reserved Seats (High Baseline MMR)			10.067**			-0.159			-277.155***
			[4.761]			[0.120]			[93.778]
Mean of Dep. Var.	14.110	14.167	14.110	4.357	4.351	4.357	233.425	224.620	233.425
Observations	4335	4203	4335	4335	4203	4335	4335	4203	4335
Number of Countries	178	167	178	178	167	178	178	167	178
R-Squared	0.465	0.470	0.470	0.547	0.547	0.548	0.270	0.361	0.309

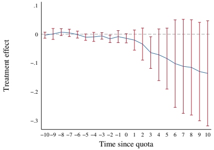
Difference-in-differences (two-way fixed effect) estimates of the impact of reserved seats in parliament on women in parliament (columns 1-3), the log of the maternal mortality ratio (columns 4-6), and MMR in levels (columns 7-9) are displayed. In each case country and year fixed effects are included. Baseline two-way fixed effect models are included in columns (1), (4) and (6), and then models studying heterogeneous impacts are presented there-after. Standard errors clustered by country are displayed in parentheses. * $p<0.10$; ** $p<0.05$; *** $p<0.01$.

Back1 Back2

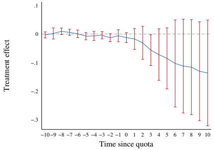
Leave-one-out analysis: MMR DIDm (continued on next page)



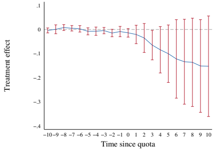
(a) Afghanistan



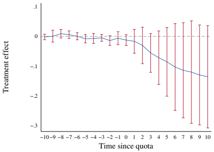
(b) Algeria



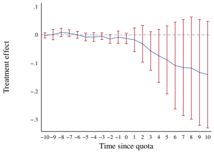
(c) Bangladesh



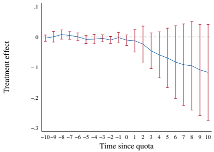
(d) Burundi



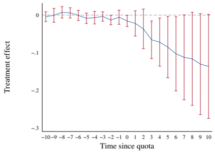
(e) China



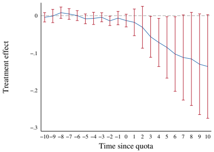
(f) Djibouti



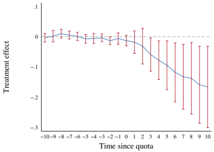
(g) Eritrea



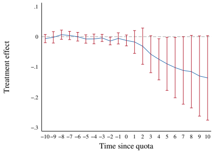
(h) Haiti



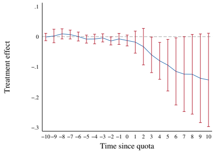
(i) Iraq



(j) Jordan

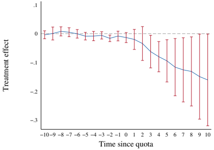


(k) Kenya

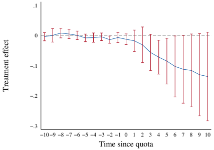


(l) Morocco

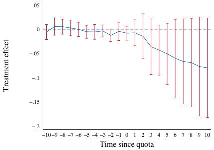
Leave-one-out analysis: MMR DIDm (Back)



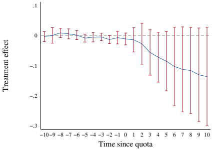
(a) Niger



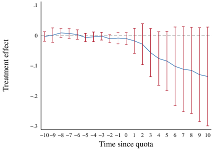
(b) Pakistan



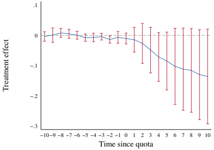
(c) Rwanda



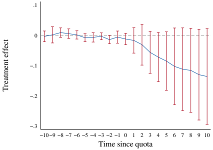
(d) Samoa



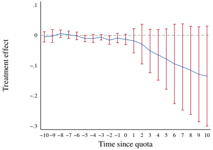
(e) Saudi Arabia



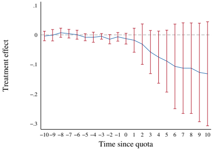
(f) South Sudan



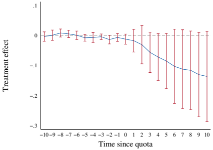
(g) Sudan



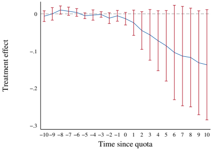
(h) Swaziland



(i) Tanzania

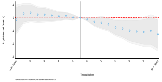


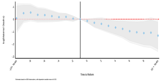
(j) Uganda

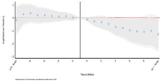


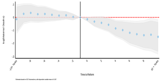
(k) Zimbabwe

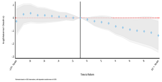
Leave-one-out analysis: MMR event study (Back)

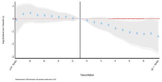

(a) Afghanistan

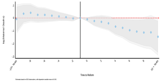

(b) Algeria

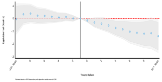

(c) Bangladesh

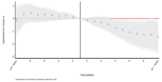

(d) Burundi

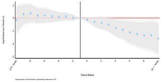

(e) China

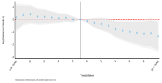

(f) Djibouti

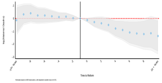

(g) Eritrea

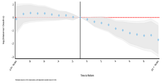

(h) Haiti

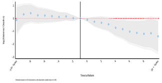

(i) Iraq

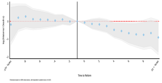

(j) Jordan

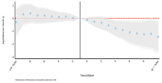

(k) Kenya

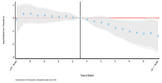

(l) Morocco

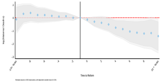

(m) Niger

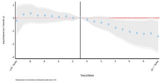

(n) Pakistan

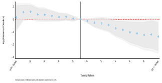

(o) Rwanda

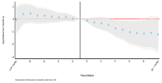

(p) Samoa

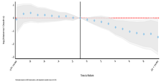

(q) Saudi Arabia

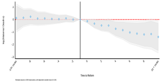

(r) South Sudan


(s) Sudan


(t) Swaziland


(u) Tanzania


(v) Uganda


(w) Zimbabwe

Reserved seats as an IV for women in parliament (Back)

	(1) ln(MMR)	(2) ln(MMR)	(3) ln(MMR)
Panel A: LIML Estimates			
% Women in Parliament	-0.015**	-0.020***	-0.015*
	[0.007]	[0.007]	[0.008]
F-Statistic First Stage	7.966	4.753	7.233
p-value First Stage	0.005	0.031	0.008
Weak IV-Robust A-R Confidence Set	[-.031153, .001431]	[-.055575,-.006106]	[-.033524, .002305]
95% CI from Conley et al. (2012)	[-0.031;0.002]	[-0.037;-0.005]	[-0.032;0.002]
90% CI from Conley et al. (2012)	[-0.029;-0.001]	[-0.035;-0.007]	[-0.030;-0.001]
Panel B: First-Stage Estimates			
Reserved Seat Quota	5.925***	5.144**	5.868***
	[2.099]	[2.360]	[2.182]
Mean of Dep. Var.	4.357	4.397	4.377
Observations	4335	3212	4241
Number of Countries	178	156	169
Controls:			
Democracy & growth	N	Y	N
Empowerment & predictors	N	N	Y

* p<0.10; ** p<0.05; *** p<0.01.

Mechanisms: Single Coefficient Estimates

Back

	Antenatal Care (1)	Attended Births (2)	Contraceptive Usage (3)	Fertility Rate (4)	Teenage Pregnancy (5)	Birth Spacing (6)	Health Expenditure (7)	Development Assistance (8)	GDP per capita (9)
Reserved Seats	4.699*	5.793**	1.669	-0.061**	-1.609	1.896	0.894**	-0.009	-0.005
	[2.771]	[2.434]	[1.172]	[0.028]	[2.786]	[1.818]	[0.371]	[0.027]	[0.062]
Mean of Dep. Var.	84.210	83.726	29.913	1.040	62.366	35.491	6.235	0.089	8.903
Observations	678	1237	4182	4303	4309	1429	3178	3338	4186
Number of Countries	155	169	172	177	177	67	176	147	175
R-Squared	0.432	0.306	0.599	0.504	0.541	0.555	0.192	0.098	0.472

Two-way FE models of intermediate outcomes as a function of the passage of gender quotas are displayed. Antenatal care coverage and birth attendance are newly harmonized data available for 1990-2015 and measured as percentage coverage, however only available in a sub-sample of years for each particular country. Contraceptive usage refers to the proportion of all women aged 15–49 using modern contraceptives. Fertility rate is measured in natural logarithms, and teenage pregnancy is measured as births per 1,000 teenage women. Birth spacing is measured in months to subsequent births, generated from full DHS data. Health expenditure refers to spending as a percentage of GDP, and development assistance refers to the proportion of development assistance directed to mothers health. GDP per capita is measured in natural logarithms. Standard errors clustered by country are displayed in parentheses. * p<0.10; ** p<0.05; *** p<0.01.

Explicitly Accounting for Uncertainty in MMR measures

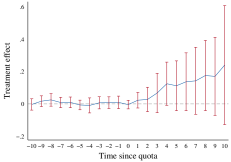
Alternative Inference Procedures for Measures of Maternal Mortality in Principal Diff-in-Diff Specification

	de Chaisemartin and D'Haultfoeuille DID_M Estimator		Two-way FE Estimator		Arkhangelsky et al's Synthetic DID Estimator	
	ln(MMR) (1)	MMR (2)	ln(MMR) (3)	MMR (4)	ln(MMR) (5)	MMR (6)
Reserved Seats (Point Estimate)	-0.072	-86.46	-0.082	-106.10	-0.127	-57.16
p-value Bootstrap	0.115	0.019	0.133	0.006	0.090	0.155
p-value Triangular Correction	0.161	0.027	0.260	0.047	0.209	0.317
p-value Triangular Correction by Country	0.124	0.014	0.149	0.004	0.099	0.163
p-value Normal Correction	0.301	0.035	0.617	0.120	0.539	0.427
p-value Normal Correction by Country	0.116	0.031	0.131	0.009	0.088	0.153
Mean of Dep. Var.	4.357	233.425	4.357	233.425	4.186	182.757
Observations	4,335	4,335	4,335	4,335	3,068	3,068
Number of Countries	178	178	178	178	118	118

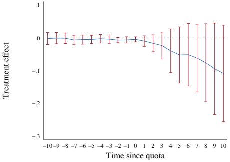
P-values based on different procedures for re-sampling the uncertainty associated with MMR measures. Resamples over country clusters, as treatment is defined at country level.

(Back)

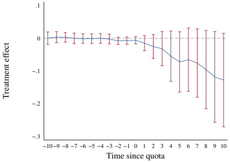
DiD_M estimates for the impact of gender quotas on alternative health outcomes (Back)



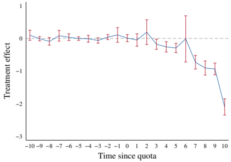
(a) Tuberculosis mortality



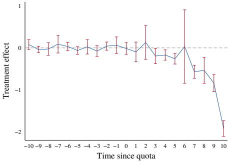
(b) Male adult mortality



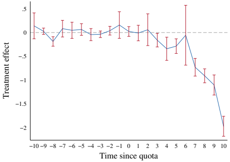
(c) Female adult mortality



(d) Infant Mortality

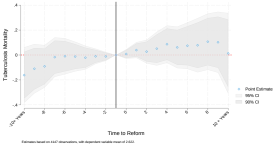


(e) Male Infant Mortality

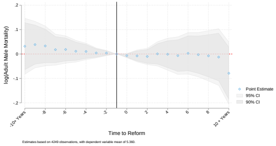


(f) Female Infant Mortality

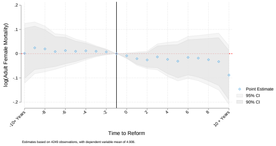
Event Studies for the impact of the gender quotas on alternative health outcomes (Back)



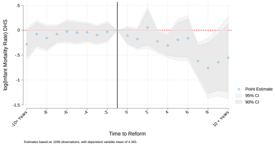
(a) Tuberculosis mortality



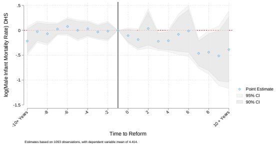
(b) Male adult mortality



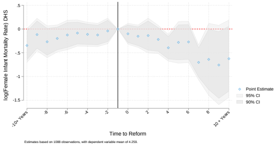
(c) Female adult mortality



(d) Infant Mortality

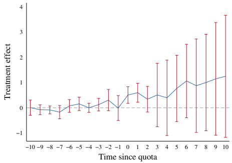


(e) Male Infant Mortality

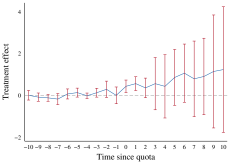


(f) Female Infant Mortality

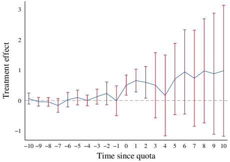
Health spending - various DiD_M estimates (Back)



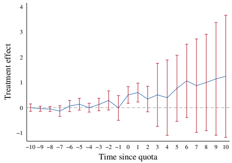
(a) No controls



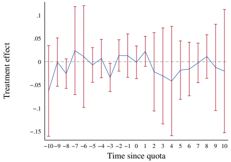
(b) With controls



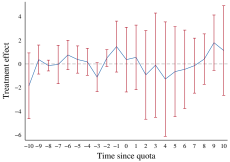
(c) Covering 1990-1994



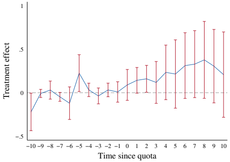
(d) 1990-1994 with 1995



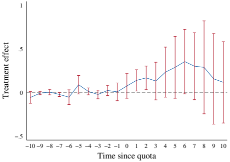
(e) Aid to Maternal Health



(f) Maternal Health Aid p.c

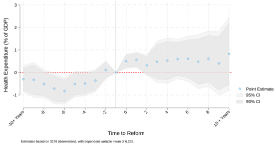


(g) ln(Government Health Spending p.c)

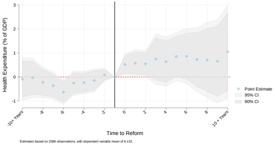


(h) ln(Gov Health Spend) Imputing 90-99 with 2000

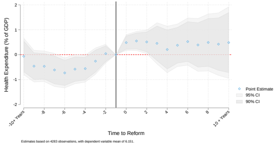
Health spending - various event study specifications (Back)



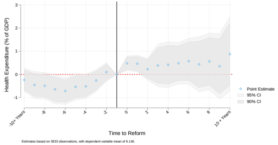
(a) No controls



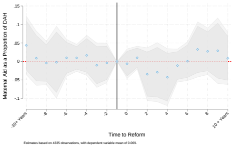
(b) With controls



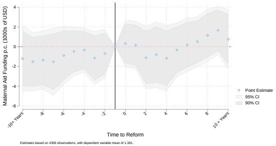
(c) Covering 1990–1994



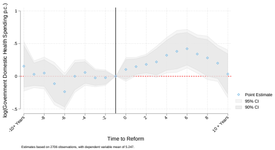
(d) 1990–1994 with 1995



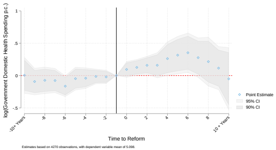
(e) Maternal Health



(f) Maternal Health p.c.

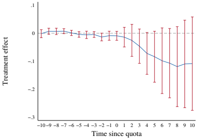


(g) ln(Government Health Spending p.c.)

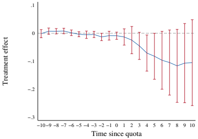


(h) ln(Gov Health Spend) Imputing 1990–'99 with 2000

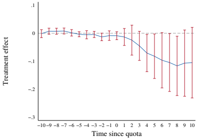
Alternative samples and specifications (MMR) Back



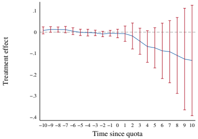
(a) Democracy control



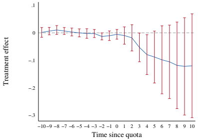
(b) GDP control



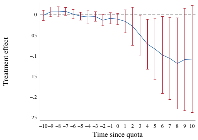
(c) GDP and democracy



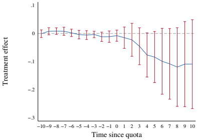
(d) Demographic



(e) Region by Year FEs

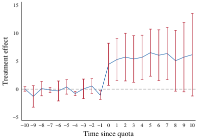


(f) Conditional on health expenditure

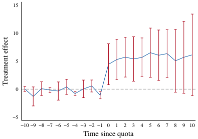


(g) Removing high income countries – ln(MMR)

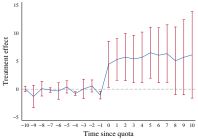
Alternative samples and specs (Women in parliament) →



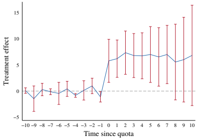
(a) Democracy control only



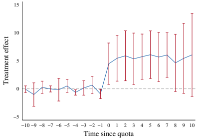
(b) GDP control only



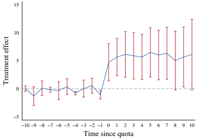
(c) GDP and democracy controls



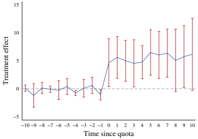
(d) Demographic controls



(e) Region by Year FEs

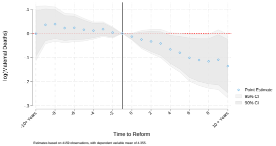


(f) Conditional on health expenditure

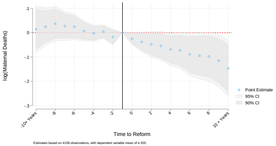


(g) Removing high income countries – women in parliament

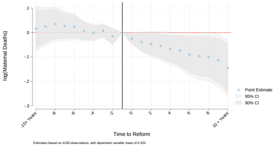
Alternative samples and specs (MMR) (Back)



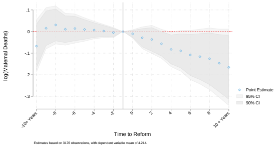
(a) Democracy control only



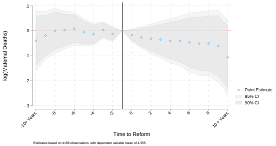
(b) GDP control only



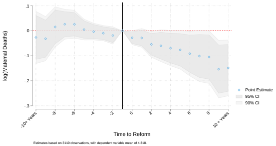
(c) GDP and democracy



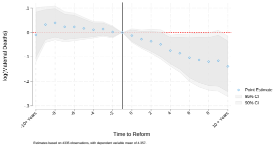
(d) Demographic controls



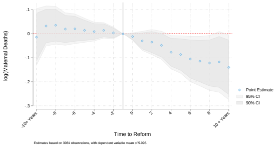
(e) Region by Year FEs



(f) Health expenditure

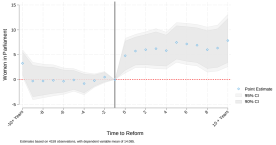


(g) Clustering by country and time – ln(MMR)

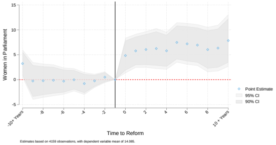


(h) Removing high income countries – ln(MMR)

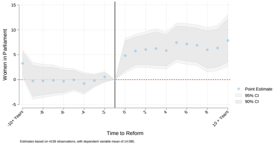
Alternate samples and specs (women in parliament) (Back)



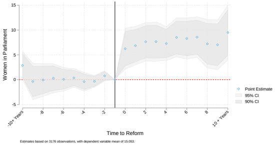
(a) Democracy control only



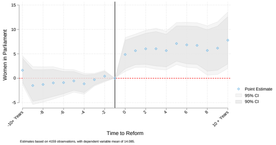
(b) GDP control only



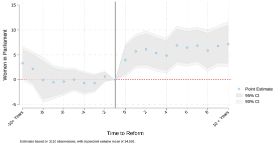
(c) GDP and democracy



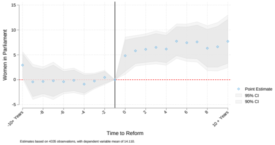
(d) Demographic controls



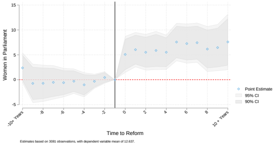
(e) Region by Year FEs



(f) Health expenditure

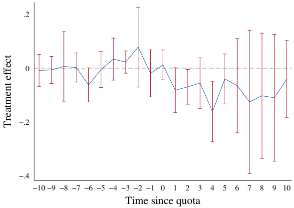


(g) Clustering by country and time – women in parliament

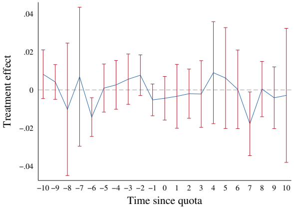


(h) Removing high income countries – women in parliament

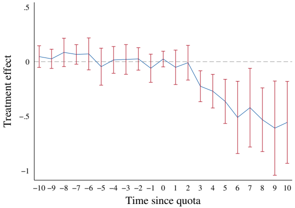
Characteristics of births and mothers: DHS pseudo-panel (Back)



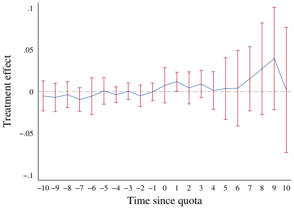
(a) log(Fertility Rates)



(b) Proportion of Girls

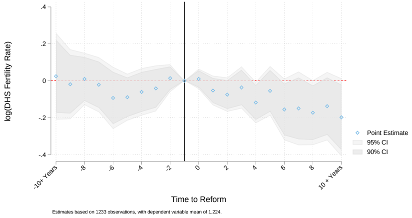


(c) Mother's Education

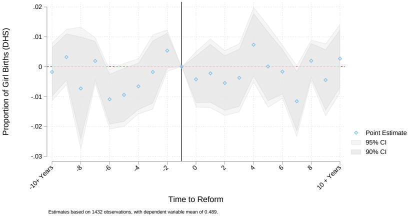


(d) Proportion of Illiterate Mothers

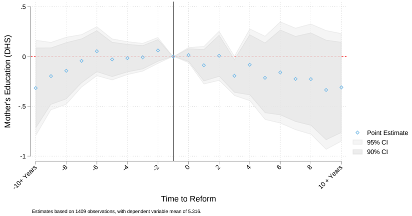
Characteristics of births & mothers: DHS pseudo-panel (Back)



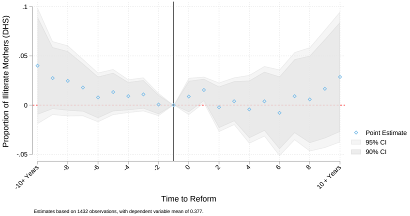
(a) log(Fertility Rates)



(b) Proportion of Girls

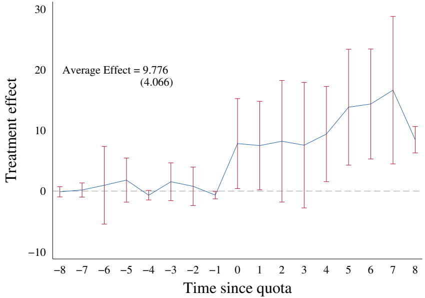


(c) Mother's Education

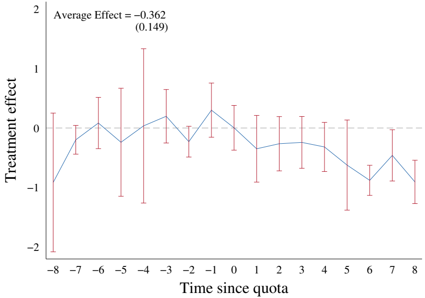


(d) Proportion of Illiterate Mothers

DHS microdata (DID_M Estimates) (Back)

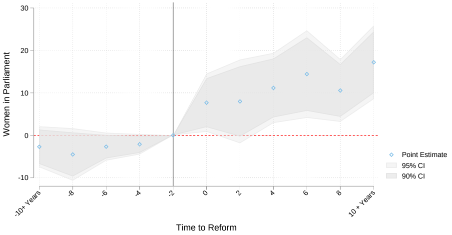


(a) Percent of women in parliament

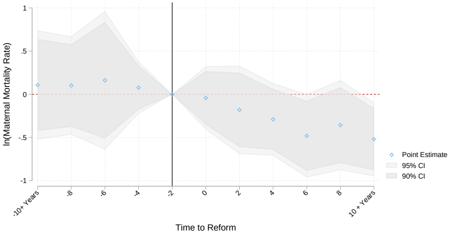


(b) ln(maternal mortality ratio)

DHS microdata (Event study) (Back)

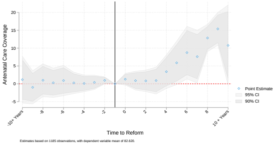


(a) Percent of women in parliament

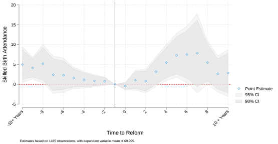


(b) ln(maternal mortality ratio)

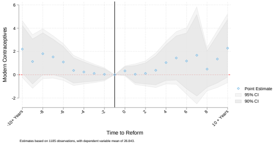
Event studies for intermediate outcomes(Back)



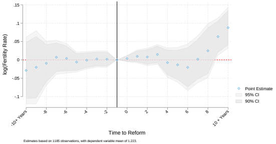
(a) Antenatal Care



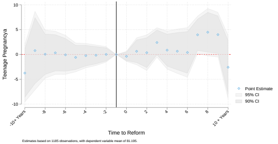
(b) Attended Births



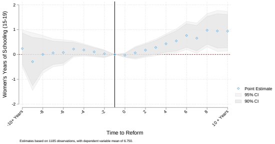
(c) Contraceptive Cover



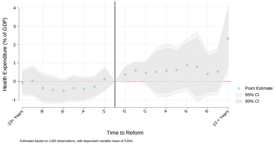
(d) Fertility



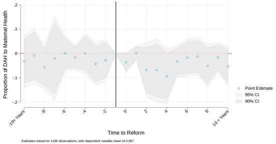
(e) Teen Pregnancy



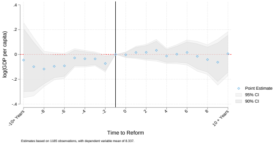
(f) Women's Schooling



(g) Health Expenditure as a

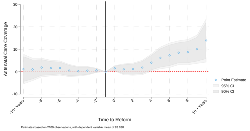


(h) Development Assistance

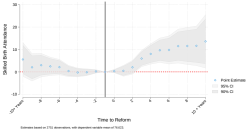


(i) ln(GDP per capita)

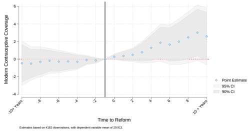
Mechanisms: Event Studies (Back)



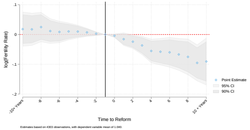
(a) Antenatal care



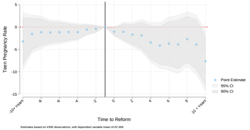
(b) Attended births



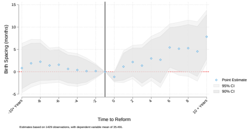
(c) Modern contraceptives



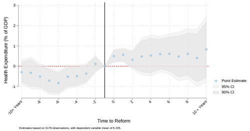
(d) ln(fertility)



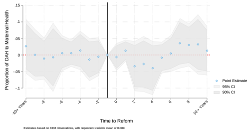
(e) Teen pregnancy



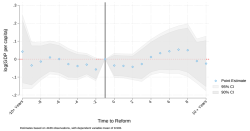
(f) Birth spacing



(g) Health expenditure

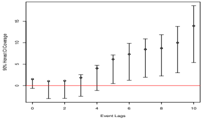


(h) % development assistance for health going to maternal health

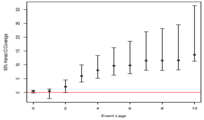


(i) ln(GDP per capita)

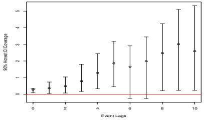
Mechanisms: Post-quota coefficients based on “honest DiD”



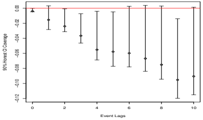
(a) Antenatal care



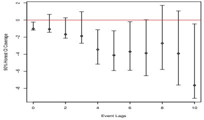
(b) Attended births



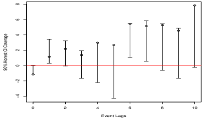
(c) Modern contr.



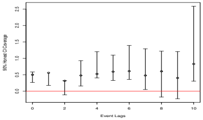
(d) ln(fertility)



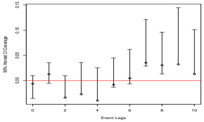
(e) Teen pregnancy



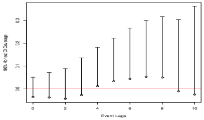
(f) Birth spacing



(g) Health expt. as a % of GDP

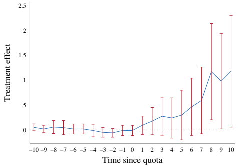


(h) % development assistance for health going to maternal health

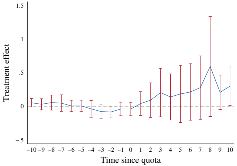


(i) ln(GDP per capita)

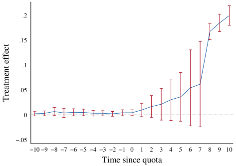
Gender quotas and schooling (15–19 year-olds) Back



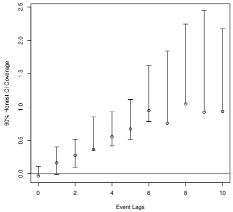
(a) Women (DID_M)



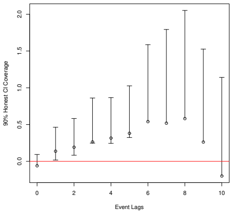
(b) Men (DID_M)



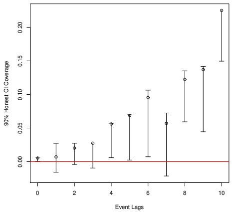
(c) Women/Men (DID_M)



(d) Women (Honest DiD)



(e) Men (Honest DiD)



(f) Women/Men (Honest DiD)

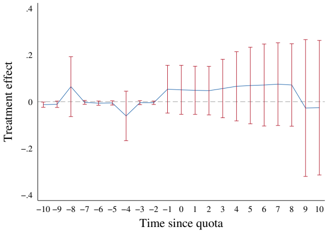
Parity & scale effects of fertility decline: total maternal deaths

Baseline		$\Delta MMR \mid Fertility$	
Births = 34,735,750 Deaths = 92,928	MMR=267.5	Births = 34,735,750 Deaths = **84,843**	MMR=244.2
$\Delta Fertility \mid MMR$		$\Delta Fertility, \Delta MMR$	
Births = 32,616,869 Deaths = **87,259**	MMR=267.5	Births = 32,616,869 Deaths = **79,668**	MMR=244.2

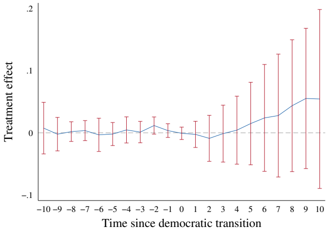
- From baseline of 92,928 deaths per year, MMR per birth falls by 8085 (to 84,843) & by another 5669 (to 87,259) on account of fewer births. Scale effect is 43% of total drop in death count

Back

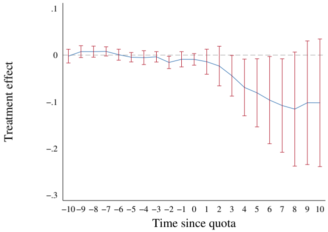
Quotas and Democracy



(a) Quotas and Democracy



(b) Democracy and Maternal Mortality



(c) Quotas and MMR, conditional on Democracy

de Chaisemartin and D'Haultfoeuille (2020) estimates

Here we consider the potential role of democratization in observed impacts of quota adoption on maternal mortality. Left-hand panel estimates the impact of quota adoption on whether or not a country is classified as a democracy. Center panel estimates the impact of transition to a democracy (rather than quota adoption) on rates of maternal mortality. Right-hand panel reports the impacts of quota adoption on maternal mortality when additionally including as controls full lags and leads to the adoption of democracy in cases where countries are classified as moving from non-democratic to democratic. Democracy is defined as in Boix et al., (2013). Back

Mechanism Variables and Maternal Mortality

	(1) ln(MMR)	(2) ln(MMR)	(3) ln(MMR)	(4) ln(MMR)	(5) ln(MMR)	(6) ln(MMR)	(7) ln(MMR)	(8) ln(MMR)	(9) ln(MMR)	(10) ln(MMR)
Antenatal Care	-0.005***									-0.005
	[0.002]									[0.003]
Attended Births		-0.004**								-0.003
		[0.002]								[0.002]
Modern Contraceptives			-0.004							-0.008
			[0.004]							[0.007]
Fertility Rates				0.095**						-0.093
				[0.047]						[0.106]
Teen Pregnancy					0.003					0.003
					[0.002]					[0.004]
Birth Spacing						-0.007				-0.003
						[0.005]				[0.003]
Health Expenditure							0.011			-0.018
							[0.010]			[0.011]
DAH Maternal Health								0.086		0.109
								[0.062]		[0.078]
log(GDP p.c.)									-0.338***	-0.478***
									[0.061]	[0.144]
Observations	2,109	2,751	4,182	4,303	4,309	1,429	3,178	3,338	4,186	915
R-Squared	0.989	0.987	0.987	0.987	0.987	0.968	0.991	0.978	0.989	0.986

Each column displays a regression of ln(MMR) on country and year FEs and a particular measure considered as a potential explanation of the observed impacts of quotas on maternal mortality. These are regressed column by column in columns 1–9, and jointly in column 10. Standard errors clustered by country are displayed in parentheses. * p<0.10; ** p<0.05; *** p<0.01.

(Back)