Are Female Politicians More Responsive to International Crises?

Daniel L. Hicks[a]
University of Oklahoma

Joan Hamory Hicks[b]
UC Berkeley CEGA

Beatriz Maldonado[c]
College of Charleston

July 2014

Abstract:

This paper analyzes bilateral foreign aid flows over the period 1973-2010 to investigate whether the gender composition of legislatures in donor nations affects the aid response to recipient country crises. Our findings suggest that donors with higher shares of women in office provide larger amounts of foreign aid in the wake of a disaster or war in a recipient nation. This response increases in size with the magnitude of the crisis, and is especially pronounced for aid flows designated as disaster relief.

Keywords: Female Leaders, Foreign Aid, Disasters, Conflict
JEL Codes: F35, H84, J16, D70

Contact Info: [a]University of Oklahoma, 308 Cate Center Drive, Norman, OK 73019, phone: 510-219-6030 (e-mail: hicksd@ou.edu); [b]University of California, Berkeley, Center for Effective Global Action, 207 Giannini Hall, Berkeley, CA 94720 (e-mail: jrhamory@berkeley.edu); [c]*Corresponding Author,* College of Charleston, 66 George Street, Charleston, SC 29424 (e-mail: maldonadobirdba@cofc.edu).

I. Introduction

Empowerment of women in the political process has been associated with meaningful changes in government activity, including higher domestic spending and a reallocation of resources in favor of public goods (Doepke *et al.*, 2012; Duflo, 2012). These shifts have been shown to produce sizeable welfare effects (Miller, 2008; Brollo and Troiano, 2012).[1] A recent extension of this literature examines the extent to which female policy makers influence not only domestic expenditure, but also international transfers. Hicks *et al.* (2014) provide causal evidence that an increase in the share of national legislative seats held by women results in higher levels of aid disbursed, both in aggregate and as a fraction of GDP.

This paper employs detailed project-level foreign aid data and a dyadic analysis framework to explore this phenomenon further by simultaneously taking into account donor and recipient characteristics. This allows us to examine whether the gender composition of national legislatures in donor countries affects the responsiveness of foreign aid flows to disasters and armed conflict in recipient nations. Our results suggest that higher levels of female representation in donor country legislatures results in greater responsiveness to recipient country crises.

Less developed countries are especially vulnerable to disasters, bearing a larger share of fatalities than developed nations (Strömberg, 2007). Similarly, poverty and anemic growth have been shown to be proximate causes of civil conflict in particular (Blattman and Miguel, 2010). Because foreign aid is predominantly directed to less developed economies, these events are especially salient factors for donor decision making, yet are not heavily studied in the aid literature. Furthermore, donors have been shown to be fickle in response to war and unreliable at best in their response to disasters, so a clearer understanding the determinants of aid in these contexts is essential for both

[1] Similarly, a literature within experimental economics has documented differences in underlying preferences and behaviors across gender lines (Eckel and Grossman, 1998; Croson and Gnezy, 2009).

recipient nation and response agency planning (Eisensee and Stömberg, 2007; Strömberg, 2007; Balla and Reinhardt, 2008).

II. Data and Methodology

We construct a dyadic panel dataset of bilateral aid commitments over the period 1973-2010, drawing on a relatively new foreign aid database which includes information from the OECD's Creditor Reporting System augmented with additional direct country reports (Tierney *et al.*, 2011). We estimate the following regression specification:

$$\ln(Aid)_{drt} = \alpha + \beta_1 W_{dt} + \beta_2 \ln D_{rt} + \beta_3 (W_{dt} \times \ln D_{rt}) + \mathbf{X}_{dt}\delta + \mathbf{Z}_{rt}\gamma + \mathbf{P}_{drt}\phi + \boldsymbol{\eta}_t + \varepsilon_{drt} \quad (1)$$

where *d* indexes donor, *r* indexes recipient, and *t* indexes year. *W* is the share of legislative seats held by women in donor country *d* at time *t*. *D* is either, depending on the specification, the number of individuals affected by a natural disaster or the number of individuals killed in a conflict in recipient country *r* in year *t*.

We include a vector $\boldsymbol{X}$ of controls for a range of donor country political and economic factors that have been shown to influence aid decision making, including the natural logs of real GDP and population, as well as indicators for involvement in international war, involvement in civil war, and constitutional design.[2] Also included in this vector is the natural log of the aggregate amount of private (non-governmental organization) grant disbursements from the donor across all recipient countries. A key concern for identification is the potential co-evolution in the donor country of voter preferences for foreign aid and for the election of women to office. We thus

[2] Constitutional design refers to whether the government is presidential, mixed, or parliamentary. Studies find that women are more like to be elected in proportional representation (PR) systems, and mixed and parliamentary governments use such systems more commonly (*e.g.* Kenworthy and Malami, 1999).

attempt to isolate variation in crisis relief aid flows specifically attributable to policymakers in the donor country by controlling for private aid flows originating in the donor nation.[3]

$\boldsymbol{Z}$ is a vector of recipient country controls which includes population density, the natural logs of real GDP, population, and total multilateral aid committed to the recipient across all donor institutions, as well as indicators for country involvement in an international or civil war (in the disaster specifications only), and the Polity 2 score. $\boldsymbol{P}$ is a vector of dyadic characteristics, including measures of geographic distance, trade flows, and UN voting affinity, as well as indicators for contiguity, common language, and colonial history between the donor and recipient. $\boldsymbol{\eta}$ is a vector of year indicators, and we additionally include a year trend. Table 1 presents summary statistics and data sources for all variables.

III. Evidence from Disaster Relief

The results of estimating equation (1) where *D* is the number of individuals affected by disaster in the recipient country are presented in Table 2. Columns (1)–(3) examine total aid, while columns (4)-(6) include only aid flows specifically earmarked for disaster response, relief, and reconstruction. The estimates in column (1) and (4) suggests that donor nations with a larger share of women in government commit more aid, even after controlling for the level of private (NGO) aid flows from the donor country to all recipients, a finding consistent with the donor-level panel analysis of Hicks *et al.* (2014).[4] Columns (2) and (5) show that aid commitments are higher when more individuals in the recipient country are impacted by disasters, consistent with Strömberg (2007).

[3] An underlying concern for identification of the legislator specific impact is that there is an omitted factor – preferences of the donor country's electorate – which affects both participation of women in the domestic political process and the amount of foreign aid committed. Private aid flows from the donor country should proxy for the aid preferences of the donor countries' electorate.

[4] Hicks *et al.* (2014) provide causal evidence of this effect by showing that within country changes in the share of female representation lead to increased aid flows, primarily occurring through bilateral aid, which are robust to controlling for private aid flows and to instrumenting for female representation using female labor force participation.

The estimates in columns (3) and (6) explore the possibility that donors with more female legislators are particularly responsive to disasters by including an interaction term between the female share of the donor country's legislature and the number of individuals affected by disaster in the recipient country. The coefficient on the interaction term is strongly statistically significant, suggesting that while aid flows from the typical donor rise during disasters, those from countries with higher levels of women in government increase proportionately more. The observed estimates are also economically meaningful. Using column (3) as an example, for an average sized disaster, a one percentage point increase in the share of legislative seats held by women would be associated with a 3.59% increase in aid commitments. The proportional increase in disaster specific aid in response to crises from countries with more female representatives in column (6) is even larger than that for total aid.

IV. Evidence from Conflict

Table 3 presents the results of equation (1), now focusing on the severity of conflict in recipient nations. Columns (1) and (2) study the case of civil war for total aid and disaster aid flows respectively, while columns (3) and (4) mirror this for international conflicts. Several patterns can be seen. First, greater shares of female legislators in a donor nation are associated with higher levels of aid in all specifications. Second, while the presence of severe civil conflict in a recipient nation is associated with a reduction in overall aid – a finding consistent with Balla and Reinhardt (2008) – countries involved in conflict actually experience an increase in aid specifically designated as disaster aid.[5] There is no corresponding direct impact from the severity of international wars, suggesting that

[5] One may be concerned that aid could drive conflict as Nunn and Qian (2014) find that once in a civil war, increases in U.S. food aid prolong the duration of conflict, but have no effect on the occurrence of civil or international wars or on the duration of international conflicts. Our results are robust to the exclusion of the U.S., and Hicks *et al.,* (2014) find that unlike most other forms of aid, female legislators have no impact on the level of food aid, which is perhaps more driven by domestic interest groups (see Milner and Tingley, 2010).

civil wars in particular may discourage donors from providing most forms of aid, while generating the greatest need for emergency relief.

The statistically significant interaction term in all columns suggests that donor countries with more female representatives provide higher levels of both total aid and disaster-specific relief in the face of either a civil or international war in a recipient nation. As an example, the coefficients in column (2) imply that for a civil war at the mean level of severity, each additional percentage of female representation is associated with just over 10.5% more disaster aid relief. Both the coefficient on women's representation and the interaction is significant in all four specifications, suggesting that on average female donors may be both more generous with aid and more willing to increase aid in times of need.

V. Discussion

Previous work has shown that that women and children are disproportionately impacted by disaster events (Bradshaw and Fordham, 2013) and war (Machel *et al.*, 1996). In this paper, we document that the presence of greater shares of female legislators in donor nations is associated with higher levels of disaster and conflict relief aid. The finding that the political empowerment of women is correlated with an increased aid response in this context is consistent both with median female preferences allocating more resources in favor of the welfare of women and children in particular, but also with donors being more altruistic when they identify more closely with intended recipients.

Finally, these results suggest that as gender equality improves in legislatures around the world, we should expect to see a foreign policy environment more responsive to the humanitarian concerns of the international community and exhibiting a different underlying set of motivations for foreign aid. As such, policies which improve the access or incentive of women to engage in governance such as gender quotas are likely to have important international repercussions.

References

Balla, E., and G. Y. Reinhardt (2008). Giving and Receiving Foreign Aid: Does Conflict Count? *World Development*, 36 (12) 2566-2585.

Barbieri, K., Keshk, O., & Pollins, B. (2012). Correlates of war project trade data set codebook. Codebook Version, 3.

Thorsten, B., George, C., Alberto, G., Philip, K., & Patrick, W. (2001). New tools in comparative political economy: The Database of Political Institutions. In *World Bank Economic Review* 15 (1), Jan 2001 (Vol. 165, No. 176, pp. 165-176). World Bank.

Blattman, C., and E. Miguel (2010). Civil war. *Journal of Economic Literature*, 3-57.

Bradshaw, Sarah and Maureen Fordham (2013). "Women, Girls, and Disasters: A Review for DFID" Mimeo.

Brollo, F., & Troiano, U. (2012). What Happens When a Woman Wins a Close Election? Evidence from Brazil. *University of Alicante. Mimeo.* Croson, Rachel, and Uri Gneezy (2009). "Gender Differences in Preferences." *Journal of Economic Literature*, 47(2), 448-474.

Doepke, Matthias, Michèle Tertilt, and Alessandra Voena (2012). "The Economics and Politics of Women's Rights." *Annual Review of Economics* 4, 339–72

Duflo, Esther (2012). "Women Empowerment and Economic Development." *Journal of Economic Literature,* 50(4), 1051-1079.

Eckel, Catherine, and Philip J. Grossman (1998). "Are Women Less Selfish Than Men?: Evidence From Dictator Experiments." *The Economic Journal,* 108, 726-735.

Eisensee, T. and D. Strömberg (2007). "New Droughts, New Floods and U.S. Disaster Relief. Quarterly." *Journal of Economics*, 122, 693-728.

EM-DAT: The OFDA/CRED International Disaster Database – www.emdat.be – Université catholique de Louvain – Brussels – Belgium

Feenstra, Robert C., Robert Inklaar, and Marcel P. Timmer (2013). "The Next Generation of the Penn World Table." www.ggdc.net/pwt.

Hicks, Daniel L., Joan Hamory Hicks, and Beatriz Maldonado (2014). "Women as Policy Makers and Donors: Female Legislators and Foreign Aid." Mimeo.

Inter-Parliamentary Union (2013). *PARLINE database on national parliaments.* http://www.ipu.org/parline-e/parlinesearch.asp.

Kenworthy, Lane, and Melissa Malami (1999). "Gender Inequality in Political Representation: A Worldwide Comparative Analysis." *Social Forces*, 78, (1), 235-268.

Machel, Graça, United Nations., & UNICEF (1996). *Impact of armed conflict on children: Report of Graça Machel : selected highlights*. New York: United Nations Dept. of Public Information.

Marshall, Monty G., and Keith Jaggers (2013). *Polity IV Project: Data Users' Manual*. Center for Systemic Peace.

Mayer, T. & Zignago, S. (2011) Notes on CEPII's distances measures: the GeopDist Database CEPII Working Paper 2011-25

Miller, Grant (2008). "Women's Suffrage, Political Responsiveness, and Child Survival in American History." *Quarterly Journal of Economics*, 120(3), 1287-1327.

Milner, H. V., & Tingley, D. H. (2010). The political economy of US foreign aid: American legislators and the domestic politics of aid. *Economics & Politics*, *22*(2), 200-232.

Nunn Nathan, and Nancy Qian (2014). "U.S. Food Aid and Civil Conflict." *American Economic Review*, 104(6), 1630-1666.

OECD (2014). "Technical Guide to the DAC Statistics database" OECD Aid Statistics. Accessed: July 2012. http://www.oecd.org/dac/stats/dacguide.htm

Paxton, Pamela, Jennifer Green, and Melanie Hughes (2008). "Women in Parliament, 1945-2003: Cross-National Dataset." 24340. Vol. 1. Ann Arbor, MI: Inter-university Consortium for Political and Social Research.

Sarkees, Meredith Reid, and Frank Wayman (2010). "Resort to War: 1816-2007." *CQ Press.*

Strezhnev, A., & Voeten, E. (2012). *United Nations general assembly voting data*. URL: http://hdl. handle. net/1902.1/12379.

Strömberg, D. (2007). Natural disasters, economic development, and humanitarian aid. *The Journal of Economic Perspectives*, 199-222.

Tierney, Michael J., Daniel L. Nielson, Darren G. Hawkins, J. Timmons Roberts, Michael G. Findley, Ryan M. Powers, Bradley Parks, Sven E. Wilson, and Robert L. Hicks (2011). "More Dollars than Sense: Refining Our Knowledge of Development Finance Using AidData." *World Development*, 39(11), 1891-1906.

Table 1: Summary Statistics

Aid Commitments, Millions of USD	Mean	Std. Dev.
Total Bilateral Aid Committed	41.90	(189.38)
Bilateral Disaster Aid Committed	1.43	(13.91)
Total Private Aid Disbursed by Donor Countries	768.82	(1,917.72)
Total Multilateral Aid Commited to Recipient Country	937.45	(2,507.53)
Recipient Disaster and Conflict Measures		
Number of People Affected by Disaster, in Millions	2.51	(18.6)
Deaths from International Conflict	173.23	(2,875.03)
Deaths from Civil Conflict	875.39	(12423.7)
Donor Political and Economic Controls		
Share of Legislative Seats Held by Women	18.37	(11.99)
Real GDP, in Billions	1848.24	(2922.53)
Population, in Millions	55.33	(74.44)
External War Indicator	0.02	(0.15)
Civil War Indicator	0.02	(0.13)
Presidential System Indicator	0.12	(0.33)
Parliamentary System Indicator	0.88	(0.33)
Mixed System Indicator	0.16	(0.37)
Recipient Political and Economic Controls		
Real GDP, in Billions	201.16	(718.88)
Population, in Millions	56.43	(178.67)
External War Indicator	0.01	(0.11)
Civil War Indicator	0.07	(0.25)
Polity 2 Score	1.04	(6.58)
Dyadic Controls		
Distance Between Countries	7677	(3517)
Contiguity Indicator	0.003	(0.06)
Common Language Indicator	0.17	(0.37)
Colonial Heritage Indicator	0.05	(0.23)
Trade Flows, in Millions	1183	(10392)
UN Voting Affinity	0.68	(0.15)

Notes: The analysis sample presumed here includes 31,984 observations for the disaster specification and 18,771 for the conflict specification. All aid values presented are in 2009 USD. In order to not drop observations with zeros from our analysis, 1 was added to the values for total multilateral aid committed to the recipient country, and dyadic trade flows, before taking the natural log. Sources: Aid data comes from AidData (Tierney et al., 2011) and OECD (2014). Disaster data comes from the International Disaster Database (EM-DAT). Civil and international conflict data comes from the Correlates of War (Sarkees et al., 2010). Geographic, language, and colonial indicators come from Mayer and Zignago, (2011). Trade Flows data comes from Barbier et al., (2012) and UN affinity voting comes from Strezhnev and Voeten (2012). Share of women in parliament was compiled from Paxton et al. (2008) and the Inter-Parliamentary Union (2013). All economic indicators are obtained from the Penn World Tables v.8 (Feenstra et al., 2013). Constitutional structure indicators come from (Beck et al., 2001) and the Polity 2 score is taken from the Polity IV database (Marshall et al., 2012).

Table 2: Aid Commitments to Countries Experiencing Disasters

Dependent Variable: ln(Aid Commitments)						
	Total Aid			Disaster Aid Only		
	(1)	(2)	(3)	(4)	(5)	(6)
Donor's Share of Legis. Seats Held By Women	0.030***		0.024***	0.015***		0.002
	(0.002)		(0.002)	(0.004)		(0.005)
Ln(Disaster Size for Recipient)		0.019***	0.004		0.136***	0.101***
		(0.002)	(0.004)		(0.007)	(0.011)
Share of Seats * Ln(Disaster Size)			0.001***			0.002***
			(0.000)			(0.000)
R^2	0.389	0.382	0.390	0.127	0.137	0.137
Mean of dependent variable	15.09	15.09	15.09	4.07	4.07	4.07

Notes: Number of observations is 31,984 in all specifications. Dyadic regressions with robust standard errors. Disaster size measured as the number of individuals affected. Controls are as listed in the text. *** p<0.01, ** p<0.05, * p<0.1

Table 3: Aid Commitments to Countries in Conflict

Dependent Variable: ln(Aid Commitments)				
	Civil Conflict		International Conflict	
	Total Aid	Dis. Aid	Total Aid	Dis. Aid
	(1)	(2)	(3)	(4)
Donor's Share of Legis. Seats Held By Women	0.030***	0.053***	0.032***	0.059***
	(0.002)	(0.007)	(0.002)	(0.007)
Ln(Deaths)	-0.052***	0.210***	-0.028	0.090
	(0.010)	(0.031)	(0.026)	(0.075)
Share of Seats * Ln(Deaths)	0.003***	0.008***	0.002*	0.011***
	(0.001)	(0.002)	(0.001)	(0.004)
R^2	0.327	0.110	0.326	0.095
Mean of dependent variable	15.50	3.46	15.50	3.46

Notes: Number of observations is 18,771 in all specifications. Dyadic regressions with robust standard errors. Disaster size measured as the number of individuals affected. Controls are as listed in the text. *** p<0.01, ** p<0.05, * p<0.1