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The PRR on Gender and Development Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about the Policy Research Report. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions are the author's own and do not necessarily represent the view of the World Bank, its Board of Directors, or any of its member countries.

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Policy Research Report on Gender and Development

Over the last several decades, gender issues have attained increased prominence in the debates over development policy. There is a growing body of evidence and experience linking gender awareness in policy and projects to equitable, efficient, and sustainable outcomes in development. However, these links are still not widely understood nor have these lessons been fully integrated by donors or national policy makers.

In mid 1998, work began on the Policy Research Report (PRR) on Gender and Development. The objectives of the report will be to strengthen the analytical and empirical underpinnings of these links and, in doing so, to clarify the value added of bringing a gender perspective to the analysis and design of development policies and projects.

In pursuit of these objectives, the PRR will draw on interdisciplinary perspectives, from research and project and policy experience. The report will incorporate extensive consultation with Bank staff,

researchers and academics outside the Bank, other donor agencies, and groups from civil society. In addition to the consultation process, a series of background papers on selected topics has been commissioned. These papers have been selected to fill some of the gaps in the existing literature as well as to augment knowledge in selected areas.

The Policy Research Report on Gender and Development Working Paper Series is intended to encourage early discussion of the findings of these papers in advance of the expected publication of the PRR in Spring 2000. An objective of the series is to get the findings out quickly, even if the presentation is less than fully polished. The papers are preliminary and carry the names of the authors and should be cited accordingly.

The findings, interpretations, and conclusions are the author's own and do not necessarily reflect the view of the World Bank, its Board of Directors, or any of its member countries.

This paper is part of a series of papers on selected topics commissioned for the forthcoming Policy Research Report on Gender and Development. The PRR is being carried out by Elizabeth King and Andrew Mason and co-sponsored by the World Bank's Development Economics Research Group and the Gender and Development Group of the Poverty Reduction and Economic Management Network. Comments are welcome and should be sent directly to the author(s) at ddollar@worldbank.org, rf250@columbia.edu, and rgatti@worldbank.org. Copies can be found online at <http://www.worldbank.org/gender/prr>. For paper copies, please send your request to Gender_PRR@worldbank.org.

Are Women Really the “Fairer” Sex? Corruption and Women in Government

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Abstract

Numerous behavioral studies have found women to be more trust-worthy and public-spirited than men. These results suggest that women should be particularly effective in promoting honest government. Consistent with this hypothesis, we find that the greater the representation of women in parliament, the lower the level of corruption. We find this association in a large cross-section of countries; the result is robust to a wide range of specifications.

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We thank Paolo Mauro for allowing us to use his data set. The findings, interpretations, and conclusions are the authors' own and do not necessarily represent the view of the World Bank or its member countries.

Over the past couple of decades, a considerable body of work has emerged that has found systematic differences in behavioral characteristics across gender. The basic hypothesis proposed by this literature is that men are more individually oriented (selfish) than women. This has been demonstrated to be the case in a wide range of institutional contexts, through both experimental and survey-based studies. For example, women are more likely to exhibit 'helping' behavior (Eagly and Crowley, 1986); vote based on social issues (Goertzel, 1983); score more highly on 'integrity tests' (Ones and Viswesvaran, 1998); take stronger stances on ethical behavior (Glover et al, 1997; Reiss and Mitra, 1998); and behave more generously when faced with economic decisions (Eckel and Grossman, 1998).¹

These results imply that women will be less likely to sacrifice the common good for personal (material) gain. This may be particularly relevant for the role of women in government since, almost by definition, one of the most significant difficulties faced by public bureaucracies is designing institutions that discourage their agents from acting opportunistically, at the expense of the public. Of course, governments worldwide remain male-dominated, and some political scientists and feminist scholars have cited this fact in explaining the poor functioning and lack of responsiveness of many governments (see, for example, Staudt, 1998). More to the point, increasing the direct participation of women in government could serve to mitigate these problems. In reference to the potential role of women in the Russian government, political scientist Valerii Tishkov has argued quite forcefully that "women bring enriching values [to government]." As a result, they "rarely succumb to authoritarian styles of behavior and prefer not to maintain the sort of expensive entourage which often accompanies high-placed (male)

¹ Admittedly, the evidence from 'economic' experiments is somewhat mixed. However, the most recent work, cited above, gives probably the cleanest results in this area. Eckel and Grossman (1998) find that in a double-blind dictator game, women donate twice as much as men to their anonymous partners when any factors that might confound co-operation are eliminated.

officials. Finally, the presence of women in the higher echelons of the hierarchical structures exercises an extremely positive influence on the behavior of their male colleagues by restraining, disciplining and elevating the latter's behavior."

Given the prevalence of the perceptions outlined in the preceding paragraph, surprisingly little work has been done to evaluate the underlying idea: that increased female participation leads to more honest government. In this paper, we make a first attempt at evaluating this hypothesis by examining the relationship between female participation in government legislatures and the level of perceived corruption in a sample of more than 100 countries. We find a strong, negative, and statistically significant relationship between the proportion of women in a country's legislature and the level of corruption, as measured by the ICRG corruption index.

The paper will proceed as follows: Section I will briefly outline the data that were collected for this project; in Section II, we present our basic econometric results and their interpretation; finally, Section III contains a discussion of the results and our conclusions.

I. Data

Our data for this paper are drawn from a wide range of sources. A more detailed description of the variables and their sources may be found in the Appendix.

As our principal measure of corruption, we use the *International Country Risk Guide's* corruption index (*CORRUPT*); this is the measure that has been most commonly used in previous work in the economics literature, and also has the widest coverage of the standard corruption indices. This variable is meant to capture the likelihood that high government officials will demand special payments, and the extent to which illegal payments are expected throughout low levels of government. In addition to allowing for consistency with previous studies, *CORRUPT*

has the advantage of having the broadest coverage of countries, which maximizes our sample size. The index itself takes on values ranging from zero (most corrupt) to six (least corrupt); hence, the index is *decreasing* in the level of corruption. We will briefly discuss other frequently used measures of corruption in a later section.

Our measure of female involvement in government comes from the Inter-parliamentary Union's survey, *Women in Parliaments: 1945-1995*. This publication lists the proportion of parliamentary seats that were held by women in the upper and lower Houses in each country. The variable *PARL* is the average of these two proportions; in countries with only a single chamber, *PARL* was set equal to the proportion of women in that chamber.

We expect both the level of corruption and political opportunities available to women to be affected by the overall level of social and economic development. Hence, we include $\log(GDP)$ and $\log(GDP)$ squared as controls. Similarly, reduced corruption and increased women's political opportunities may both result from increased political and civil freedom; to control for this possibility, we include Gastil's Civil Liberties index (*CIVIL*) as a control. A number of other variables have been shown to be important explanatory variables in corruption regressions; to reduce the likelihood of omitted variable bias, we also run specifications using these variables². These variables include: the log of population ($\log(POP)$); average years of schooling (*SCHOOL*); openness to trade (*OPEN*); and ethnic fractionalization (*ETHNIC*). Finally, we include specifications with regional dummies, colonial dummies, and legal origin dummies.³

² See Ades and Di Tella (1997) and Gatti (1999) to see explanations for the inclusion of these variables.

³ Staudt (1998) claims that one variable that has a significant impact on female representation in government is whether a country has a system of proportional representation. Her argument is that this electoral arrangement provides an incentive for parties to compete along an ideological continuum, which results in higher minority (and female) representation. It may be argued that the resulting fractionalization of government could reduce corruption (due to the presence of many watchdogs). We have collected data on government fractionalization, and do not find

There is some variation in our variables across years, but we are limited to 1985, 1990, and 1995 because these are the only years for which *PARL* and *CORRUPT* are available.

Summary statistics are listed in Table 1, both for the full sample, as well as the lowest and highest quartiles, by GDP. The raw correlation between *CORRUPT* and *PARL* is very high (0.38). However, as Table 1 makes clear, both variables are also correlated with overall development, as proxied by per capita income. To examine the extent to which there is an independent relationship between *CORRUPT* and *PARL*, we proceed to the regressions in Section II.

II. Empirical Results

Our basic specification is the following:

$$CORRUPT_{iy} = \alpha + \beta_1 * PARL_{iy} + \beta_2 * \log(GDP_{iy}) + \beta_3 * [\log(GDP_{iy})]^2 + \beta_4 * CIVIL_{iy} + \beta_5 * Y90_{iy} + \beta_6 * Y95_{iy} + \varepsilon_{iy}$$

where *i* and *y* are country and year indices respectively. The first column of Table 1 shows the results from this regression, where the reported standard errors are corrected for heteroskedasticity, and allow for the clustering of residuals by country. The coefficient on *PARL* is significantly positive at 1 percent; its size, 3.53, implies that a one standard deviation increase in *PARL* (0.08) will result in a decline in corruption, as measured by *CORRUPT*, of 20 percent of a standard deviation. Thus, the presence of female parliamentarians apparently has a significant, negative effect on corruption.

this to be correlated with women in parliament or corruption, not surprisingly, therefore, the inclusion of government fractionalization in our regressions does not affect the other coefficients.

To investigate the possibility that the preceding result may be driven by outliers, we repeated the previous regression, omitting observations with very high leverage according to the method of Kmenta (1986).⁴ The result, listed in the second column, suggests an even larger effect from female political participation, with a coefficient on *PARL* of 4.48.

The remaining columns of Table 1 show the results of alternative specifications. Few of the added variables are significant; moreover, the coefficient on *PARL* is hardly affected by the choice of specification.

Another concern regarding the chosen specification relates to our choice of *CORRUPT* as a measure of corruption. As explained above, we consider this to be the most appropriate measure currently available. Nonetheless, we repeated our analyses using the two other corruption indices that are commonly used in the economics literature. These include the so-called German Exporter corruption index (GCI), developed by Peter Neumann (1994), and the *World Competitiveness Report's* corruption index (WCRCI); see the Appendix for descriptions of these variables. With WCRCI as our dependent variable, we obtained results that were extremely similar to those reported above, in terms of both the significance and magnitude of the effect of *PARL*. When GCI was used, the coefficient on *PARL* was of the correct sign, though not significant, in the basic model; the sign, size, and significance of the coefficient were highly sensitive to the choice of specification.

Obviously, some care is required in interpreting our results. Since we are dealing with cross-country data, it may be that some unobserved variable is causing both high female participation in government and low corruption. We have tried to mitigate these concerns by

⁴ These outliers are excluded from all subsequent regressions. While we obtained similar results with outliers included, countries where outliers were found to have highly variable values of *PARL*, bringing into question the validity of these observations (for example, the value of *PARL* for Romania went from 0.15 in 1975, to 0.32 in 1980, before declining to 0.02 in 1985 and 1990; its current level is 0.12).

including in our regressions variables to control for various underlying institutional characteristics that would most likely be responsible for such a spurious correlation.

III. Conclusions

There exists a substantial literature in the social sciences which suggests that women may have higher standards of ethical behavior and be more concerned with the common good. Consistent with this micro-level evidence, we find that at the country level, higher rates of female participation in government are associated with lower levels of corruption.

Increasing the presence of women in government may be valued for its own sake, for reasons of gender equality. However, our results suggest that there may be extremely important spinoffs stemming from increasing female representation: if women are less likely than men to behave opportunistically, then bringing more women into government may have significant benefits for society in general.

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Data appendix

WOMEN IN PARLIAMENT	Percentage of seats occupied by women in the lower and upper chamber. Source: Women in Parliaments.
CORRUPTION	Corruption, index ranging from 0 to 6 (6=lower corruption) for 1982-1995. Source: International Country Risk Guide.
GDP	Real GDP per capita in constant dollars, chain Index deflated, expressed in international prices, base 1985. Source: WDI, World Bank.
CIVIL LIBERTIES	Gastil index of civil liberties. Values from 1 to 7, (1=most freedom) are attributed to countries taking into consideration such issues as freedom of press, of political association and trade unions. The index is available for the years 1972-95. Source: Banks.
SCHOOLING	Average years of schooling in the adult population, available for 1960-1990. Source: Barro-Lee (1993).
FRACTIONALIZATION	Ethnolinguistic fractionalization index (measures the probability that two randomly selected persons from a given country will not belong to the same ethnolinguistic group). Source: Mauro, initially from the Atlas Narodov Mira (Department of Geodesy and Cartography of the State Geological Committee of the USSR, Moscow, 1964) and Taylor and Hudson (World Handbook of Political and Social Indicators, 1972).
LEGAL ORIGIN	Origin of a country legal system. Source: La Porta et al (1998).
OPENNESS	Share of import in GDP. Source: WDI, World Bank.
REGIONAL DUMMIES	World Bank classification.
COLONIAL DUMMIES	Indicators of colonial affiliation. Sources: CIA World Factbook.
POPULATION	Source: WDI, World Bank.

Alternative Measures of Corruption

GERMAN EXPORTERS	Total proportion of deals involving kickbacks, according to German exporters. Source: Neumann (1994); obtained from Paolo Mauro.
WCO	Corruption index from the <i>World Competitiveness Report</i> , extent to which improper practices (such as bribing and corruption) prevail in the public sector. Source: obtained from Paolo Mauro.

Table 1. Summary statistics, 1990

	All Countries	Poorest Quartile (income below \$1169)	Richest Quartile (income above \$6866)
Income	4639.0	717.0	11824.0
Corruption (ICRG index)	3.35	2.74	4.64
Women in parliament (%)	10	7	17
Civil liberties	3.99	5.61	1.75
Average years of schooling	5.35	1.99	8.18

Table 2. OLS estimates. Dependent variable: Absence of corruption, ICRG index

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Percentage of women in parliament	3.53 (3.1)	4.48 (3.92)	4.53 (3.85)	4.15 (3.00)	4.07 (2.82)	4.59 (4.03)	3.97 (3.39)	4.37 (3.68)	4.35 (4.62)	3.26 (1.83)
Log of GDP	-2.55 (1.58)	-3.45 (2.54)	-3.45 (-2.53)	-3.15 (-1.75)	-3.10 (-1.71)	-3.38 (-2.47)	-4.60 (-3.00)	-0.32 (-0.16)	-2.68 (-2.43)	-3.76 (-2.47)
Log of GDP squared	0.20 (2.00)	0.25 (2.96)	0.25 (2.94)	0.25 (2.24)	0.24 (2.16)	0.25 (2.9)	0.32 (3.46)	0.05 (0.45)	0.20 (2.86)	0.27 (2.84)
Civil liberties	-0.08 (1.61)	-0.05 (-0.86)	-0.05 (-0.92)	-0.04 (-0.56)	-0.04 (-0.53)	-0.04 (-0.72)	-0.05 (-0.88)	-0.15 (-2.55)	-0.07 (-1.32)	-0.07 (-1.19)
Log of population			0.01 (0.29)							
Schooling sample				Yes						
Schooling					0.02 (0.41)					
Openness						0.002 (0.89)				
Ethnic fractionalization							-0.0006 (-0.13)			
Regional dummies								Yes (P=0.00)		
Colonial dummies control									Yes (P=0.00)	
Legal origin										Yes (P=0.01)
Excluding outliers	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	270	259	259	144	144	255	232	259	259	259
R ²	0.50	0.50	0.50	0.57	0.57	0.51	0.57	0.58	0.55	0.53

t-statistics are in parentheses. Standard errors are corrected for heteroschedasticity and for correlation within country clusters. When various dummies are included as controls, p-values for the joint significance of such dummies are reported. Outliers are identified based on hat matrix diagnostics (Bulgaria, Finland, Guyana, Norway, Romania, Singapore, United Arab Emirates, Zaire).