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Women's rights and financial development

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Abstract

Based on studies where institutions augment financial development by guarantying property rights, reducing information asymmetry and bargaining power, our results show that countries that adopt and enhance women's rights experience greater financial development. Employing alternate identification strategies, we find that a standard deviation rise in adoption of women's rights improve financial development approximately between 10 and 20 percentage points.

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1 Introduction

Institutional differences among countries significantly explain variations in levels of financial developments (Huang 2010; Acemoglu, Johnson, and Robinson 2005, etc.). Women's rights, a subset of socio-economic institutions, is an important conduit in this matter, but has received little attention thus far, except for sporadic analysis in Hallward-Driemeier *et al*. (2013), Revenga and Shetty (2012) and with a narrower scope in Fernandez (2009). Gender gaps in the ability to access and own assets, to sign legal documents in one's own name, and to have equality or non-discrimination as a guiding principle of the country's constitution are integral to these rights (Hallward-Dreimeier *et al*., 2013). Between the 1960s and 2010 many of the impediments were removed, with women from poorer countries benefiting more in the process. For example, Peterman (2011) shows that for Tanzania, women from communities that provide inheritance and property rights to women are likely to save more and spend more at individual and household levels. On aggregate, recognition of rights implies greater household and market-level bargaining power (Martin and Tamayo 2015; Claessens and Laeven 2003) for women helping better asset allocation, greater mobilization of savings and investment and, thus, greater financial development. Indeed, equality of rights, health, education and employment helps economic complexity and development (Nguyen 2021). However, social norms matter; since male dominance in decisions regarding family structure and inheritance could force women to make supplementary decisions that undermine grant of property rights. Bhalotra *et al*. (2020) show that property rights to women in India increases fertility, son preference and female feticide. So, wider evidence on the relation between women's rights and financial development is useful.

Using robust regression and instrumental variable (IV) estimates, we show that adoption of economic, political or social rights for women leads to greater financial development. The results hold for alternate identification methodologies.

2 Data and Identification

The present measures of financial development (*FD),* assessing depth and access to financial institutions and markets, are (i) *domestic credit*: defined as domestic credit to private sector (% of GDP); (ii) *private credit*: private credit by deposit money banks (% of GDP); (iii) *private credit (banks+fin)*: private credit by deposit money banks and other financial institutions (% of GDP); (iv) *accounts*: percent of individuals (age 15 plus) who have an account at a formal financial institution; and (v) *stock market*: stock market capitalization (% of GDP) [Zhang and Naceur 2019; Ductor and Grechyna 2015; Beck, Demirgüç-Kunt and Levine 2007; Acemoglu and Johnson 2005). Using CIRI (Cingranelli, Richards and Clay 2014) database and employing principal component analysis (PCA), we construct a measure of women's rights (WR) based on economic, political and social rights. While economic rights measure components like being able to choose profession, right to work and equal pay among many more, political rights assess right to vote, right to run for political office, etc. Social rights consist of right to inheritance and right to manage properties acquired through marriage among others.

We estimate the following specification:

$$FD_c = \mu + \alpha WR_c + Controls_c + \epsilon_c \quad (1)$$

Benchmark analysis involves robust estimates correcting biases and possible outliers. To establish identification, the first instrument borrowed from literature on individualism for IV estimation is *pronoun drop* (Feldmann 2019; Kammas, Kazakis and Sarantides 2017; Gorodnichenko and Roland 2017). Both Feldmann (2019) and Kashima and Kashima (1998) emphasize that languages allowing personal pronoun drops promote the 'collective' as more important. Conversely, languages that require the use of personal pronouns emphasize individualism and should respect women's rights. The other instrument denoted as *pathogen* is considered from Nikolaev, Boudreaux and Salahodjaev (2017). Societies experiencing high degrees of pathogenic stress are more likely to develop traits related to ethnocentrism (Navarrete and Fessler 2006), distrust of immigrants (Faulkner *et al*. 2004) and nurture values that disregard the well-being of non-members. In such societies women are expected to adhere to traditional family values and internationally recognized women's rights are less likely to be upheld.

3 Results

Columns (1) to (5) of Table 1 report results for the five measures mentioned. The coefficient of women's rights is positive and significant for all the measures. For the first three measures, a standard deviation rise in the *WR* index improves *FD* by 14 percentage points. Consequently, countries like Indonesia, Peru and Ukraine with average *private credit (banks)* at 36% between 1981 and 2011 can elevate to 50% at the level of Poland. This impact is the strongest for the measure, s*tock market*.

Table 2 presents the IV estimates for all the measures. Both *pronoun drop* and *pathogen* are negative and significant in the first stage (not reported and available on request) for all specifications. *Distance to the coast* is also negative and significant for three out of the five measures. Diagnostic tests for under-identification suggest that the null can be rejected. Hansen *p-values* also suggest that the excluded instruments are distributed independently of the error process. We find that the index of women's rights remains positive and significant for all the measures. Since, among other things, *WR* recognition can imply *FD* through the channel of property rights for women, not controlling for it might result in omitted variable bias. We consider a measure of property rights from Heritage Foundation database. Considering IV estimates, we find that results remain robust to inclusion of property rights.

We proceed to establish identification via simultaneous determination of financial development and women's rights by creating a carefully matched control group of countries with the same set of characteristics except the level of women's rights (Dutta, Giddings and Sobel, 2021; Webster and Piesse, 2018). Essentially, propensity matching[1] score (PSM) estimates correct for the missing data problem, arising due to each country being observed only in one of the potential outcomes, by using estimated probability weights to find similar countries in the sample on all other dimensions. The average treatment effects of the treated (ATET) are reported

[1] For PSM estimates both dependent and independent variables need to be binary. For all measures, we construct dummies assigned 1 for countries above 50th percentile values for both FD and WR.

in Table 3. The significance of the *p-values* for the first three measures suggests that countries with *WR* above the 50^{th} percentile enjoy greater financial development.

4 Conclusion

Recognition and implementation of social, economic and legal rights for women is neither uniform nor deep rooted across countries. It is believed that equal rights conferred to women as participants in various economic transactions should improve general well-being. We showed here that adoption and enhancement of women's rights can substantially enhance financial development also, an account hitherto unexplored in the related literature.

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Table 1: Robust Regressions – Financial Development and Women's Rights

	(1) *Domestic credit*	(2) *Private Credit (Banks)*	(3) *Private Credit (banks +fin.)*	(4) *Access*	(5) *Stock market*
Women's Rights (WR)	14.67**	14.21***	14.81**	8.029***	25.31***
	(7.002)	(5.309)	(6.383)	(2.267)	(5.771)
GCF (% GDP)	-0.052	-0.219	-0.359	-0.089	2.042*
	(1.087)	(0.823)	(0.985)	(0.342)	(1.145)
FDI (% GDP)	1.728*	-1.500	-1.352	-1.895***	-1.564
	(1.035)	(1.530)	(1.832)	(0.696)	(2.200)
Enrollment (%)	0.468**	0.508***	0.569***	0.513***	0.359
	(0.229)	(0.172)	(0.207)	(0.076)	(0.258)
Income (quartiles)	-7.811	10.37	7.188	-17.33	-154.0***
	(53.84)	(41.12)	(48.82)	(18.29)	(43.52)
Legal origin (U.K.)	54.91***	36.23***	55.94***	4.507	75.21***
	(15.77)	(12.02)	(14.23)	(5.156)	(13.04)
Legal origin (France)	18.28	15.96	21.84	-11.93**	51.99***
	(14.56)	(11.05)	(13.29)	(4.929)	(13.21)
Trade (% GDP)	0.077	0.185*	0.217	0.106**	0.289**
	(0.124)	(0.108)	(0.130)	(0.048)	(0.126)
Constant	17.93	-40.45	-36.02	84.85	401.5***
	(176.9)	(134.4)	(160.1)	(60.33)	(146.3)
Observations	74	72	73	79	44
R-squared	0.418	0.446	0.436	0.744	0.718

Note 1: Standard errors in parentheses;*** p<0.01, ** p<0.05, * p<0.1

Table 2: IV Estimates – Financial Development and Women's Rights

	(1) *Domestic credit*	(2) *Private Credit (Banks)*	(3) *Private Credit (banks +fin.)*	(4) *Access*	(5) *Stock market*
Women's Rights (WR)	25.65**	15.54*	23.96**	9.590*	39.33
	(13.62)	(9.916)	(12.93)	(4.948)	(25.84)
GCF (% GDP)	2.500**	2.312**	2.557**	0.706*	-0.832
	(1.235)	(0.948)	(1.186)	(0.412)	(2.946)
FDI (% GDP)	2.253**	-0.390	-1.703	-0.0120	-2.771
	(1.104)	(2.136)	(2.652)	(0.393)	(1.822)
Enrollment (%)	0.302	0.396*	0.394	0.495***	-0.535
	(0.328)	(0.238)	(0.304)	(0.119)	(0.820)
Income (quartiles)	-66.65	-54.37	-76.38	-3.283	-80.82
	(53.21)	(40.91)	(50.16)	(18.85)	(99.32)
Legal origin (U.K.)	51.13**	16.41	50.48***	3.026	78.46**
	(20.28)	(16.02)	(18.89)	(6.727)	(35.89)
Legal origin (France)	26.15	13.39	24.91	-7.847	26.50
	(18.74)	(14.04)	(17.60)	(6.726)	(36.49)
Trade (% GDP)	-0.160	-0.0137	0.0259	-0.032	0.181
	(0.225)	(0.193)	(0.231)	(0.079)	(0.417)
Constant	175.5	135.6	195.6	26.20	349.3
	(177.8)	(135.0)	(167.4)	(63.18)	(340.8)
Observations	59	57	58	64	39
R-squared	0.333	0.349	0.302	0.706	0.055
Instruments	Pronoun drop, Pathogen, Dist. to coast	Pronoun drop, Pathogen, Dist. to coast	Pronoun drop, Pathogen, Dist. to coast	Pronoun drop, Pathogen, Dist. to coast	Pronoun drop, Pathogen, Dist. to coast
Anderson canon. corr. LM statistic	0.002***	0.001***	0.002***	0.002***	0.02**
Kleibergen-Paaprk LM statistic	0.03**	0.02**	0.02**	0.03**	0.09*
Hansen J	0.36	0.21	0.63	0.66	0.41

Table 3: PSM Estimates – Financial Development and Women's Rights

	(1) *Domestic credit*	(2) *Private Credit (Banks)*	(3) *Private Credit (banks +fin.)*	(4) *Access*	(5) *Stock market*
ATET	0.309*** (0.058)	0.261** (0.046)	0.285*** (0.029)	0.448 (0.396)	0.008 (0.100)

Note 1: Robust Abadie-Imbens standard errors are reported.