SMU **Bridwell Institute for Economic Freedom**

Women's Property Rights Equality and Entrepreneurial Activity

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Abstract:
Entrepreneurial activity is shaped by institutions. However, past research has largely assumed that everyone has equal property rights even though women often operate under a different property rights structure than men. We fill a gap in the literature by examining how the property rights of women impacts the extent of entrepreneurship. We test these empirical relationships in a panel of 109 countries using data on property rights from the *Economic Freedom of the World* dataset and data on entrepreneurship from the *Global Entrepreneurship Monitor* dataset. We find that weaker property rights for women are associated with less female entrepreneurship.

I.   Introduction

Entrepreneurship is a fundamental determinant of economic development and the allocation of entrepreneurship is determined by the institutional context (Baumol, 1990). Economic institutions determine the incentives that entrepreneurs and would be entrepreneurs face and determine the productivity of entrepreneurship. However, economic institutions, and therefore the incentives they create, can differ drastically by gender, with many countries having a large gap in the extent to which property rights are protected. In this paper, we examine how equality in the institutional protection of property rights for women influences the allocation of entrepreneurship and female entrepreneurship.

Entrepreneurs can influence economic growth through several channels (Bjørnskov and Foss 2016). The entrepreneur's alertness to profit opportunities is a driver of the market process and thus growth. These competitive actions to eliminate profit opportunities result in the production of goods and services for others and, in a more neo-classical framework, greater efficiency (Kirzner, 1997). The understanding of the entrepreneur as a driver of the economy and living standards does not have a gendered component to it, however, in most countries, many more men engage in formal entrepreneurship than women. This discrepancy in the rates of entrepreneurial participation is an area of active research (Cuberes et al., 2019; Weiss et al., 2023) but is largely unsettled.

One way to understand this discrepancy is to study the determinants of entrepreneurship. Research has highlighted the role of financial, human, and social capital as being important for levels of entrepreneurship. Increasingly the role of economic institutions is also being considered as a major determinant (Bjørnskov and Foss, 2016; Urbano et al., 2020). However, women often face a different set of economic institutions then men. A notable gap in the literature is the extent to which the differences in how formal institutions treat women influence female

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entrepreneurship. Cuberes, Priyanka, and Teignier (2019) study the determinants of female entrepreneurship in developing countries but do not study the role of formal institutions. Ashraf, Delfino, and Glaeser (2019) study how access to adjudicating institutions in Zambia influences female entrepreneurship. Most closely related to the present study is Islam, Muzi, and Amin (2019) who test whether unequal laws influence labor market outcomes for women using firm level data across a large set of countries.

Accounting for women's empowerment is critical for a full understanding of the development process (Duflo, 2012). Gender inequality is intertwined with economic growth and development (Kabeer, 2016; Mitra et al., 2015). Recent innovations in measurement have helped to further illuminate the stark difference in how formal institutions govern women (Hyland et al., 2020; Iqbal et al., 2018). The difference in how women are treated by formal institutions has economic consequences, for example, women's rights are associated with the degree of income inequality (Dutta, Giddings, and Roy forthcoming) and economic growth (Sheehan and O'Reilly, 2023).

We contribute to the literature by studying whether unequal institutional protection of property rights for women influences female entrepreneurship at both the country and individual level. An additional contribution is that we study the relationship between institutions and entrepreneurship in a much broader set of countries, including developing countries, than most previous studies. Using panel data from the Global Entrepreneurship Monitor (GEM) for 109 countries and covering the years 2001 to 2019 we first test the relationship at the country level for total entrepreneurship levels and a measure of the ratio of female entrepreneurship to male entrepreneurship. We also examine this relationship using quantile regressions to allow for property rights to impact low and high entrepreneurship ratio countries differently. Then we test

the relationship between women's property rights and early-stage female entrepreneurship using individual-level data across 104 countries between 2001 and 2019. In all cases we find evidence that more equal property rights protections between men and women is associated with more female entrepreneurship.

In section II we review the literature on both the institutional determinants of entrepreneurship and female entrepreneurship more generally. Section III describes the measures entrepreneurship and the measure of property rights, along with the empirical methods used to analyze the data. The results are presented in section IV and section V concludes.

II.   Economic Institutions and Entrepreneurship

Baumol (1990) provides a framework to understand the allocation and productivity of entrepreneurship across time and place. He shows that the institutional environment, the rules of the game, determine the incentives faced by the entrepreneur. In his framework, there is no reason to believe that people in a given time or place are innately more or less entrepreneurial, but rather that the environment created by institutions shapes the style of entrepreneurship in significant ways. The economic institutions make the entrepreneurs more or less productive based on the incentives they provide and help determine whether the entrepreneur engages in productive or unproductive entrepreneurship. A substantial literature has found that the institutional environment influences the formation of entrepreneurship (Boudreaux and Nikolaev, 2019; Estrin, Korosteleva, and Mickiewicz, 2013), the style of entrepreneurship (Chowdhury et al., 2019; Sobel, 2008), and the relationship between institutions, entrepreneurship and growth (Bjørnskov and Foss, 2016; Naudé et al., 2008; Urbano et al., 2020). This research area finds that formal institutions are important for entrepreneurship levels and kinds and that this relates to the overall economic development of the country. However, most studies find nuanced results

where either the formation of the entrepreneur differs slightly from expected theory or that only some economic institutions are important, perhaps because of other institutions like corruption.

While institutions are continuously discussed as important, few studies have examined how entrepreneurship and female entrepreneurship are determined by an institutional context that may differ substantially between men and women. In many countries, women are not guaranteed the same property rights as men; in these countries, women face a very different set of incentives to engage in entrepreneurship then men. As the institutional conditions change in countries, property rights improve for women and the gap between the rights of men and woman decrease, the incentives to engage in entrepreneurship increase. As property rights are expanded and greater equality is achieved, this provides an increased opportunity for women's involvement in the economy. This involvement can come through multiple channels.

The increase in access to markets that comes with greater equality in property rights will lower the transaction costs associated with this market engagement and lead to an increase in entrepreneurship (North, 1990; Williamson, 2000). The change in institutional quality will also alter the opportunity cost of staying out of the market and we believe lead to an increase in entrepreneurship. Goldin (2006) examines how changes in the economy of the United States over the last 100 years has encouraged women to enter the labor force. The economic and institutional development of the US causes a rightward shift in the labor supply curve in the early 1900s when the US was less developed and later, when the US became more developed, led to an increase in the substitution elasticity of the labor supply partnered with an increase in demand. Both the shift in supply and the change in elasticity lead to an increase in women's employment. Applying this logic more generally, a change in property rights would similarly affect the quantity of female entrepreneurs. In developing countries as rights expand and greater equality is reached, there will

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be an increase in the supply of female entrepreneurs. In developed countries, this will likely result in an increase in quantity supplied. In all cases, we expect that an improvement in property rights will lead to higher levels of female entrepreneurship.

One of our contributions in this paper is adding economic institutions into the study of the determinants of female entrepreneurship. Overall, economic institutions and specifically the unequal application of property rights has been ignored in the discussion. The few studies that come close to addressing this topic include the following. In a recent paper, Fang et al. (2019) specifically examine how foreign direct investment is important for entrepreneurship but highlight the role of access to finance, education, previous labor force participation, and lower barriers to entry for woman as important too. Hyland and Islam (2021) demonstrate that laws that discriminate against women also encourage women to enter into the informal sector for entrepreneurship. Goltz et al. (2015) specifically examine women's entry into entrepreneurship controlling for the rule of law, but with an interest in political empowerment and find that the rule of law provides a moderating effect for political empowerment. Finally, Ashraf et al. (2019) study of how institutions influence female entrepreneurship in Zambia.

An increase in female entrepreneurship is desirable for several reasons, especially in developing countries. While female entrepreneurship in developed countries does not appear to be a strong determinant of firm performance, past research does find it is important for emerging economies. For example, women owned firms in microfinance have enhanced repayment (D'Espallier et al., 2011) and female managed microfinance firms have better performance (Strøm et al., 2014). Tonoyan and Boudreaux (2023) also find that firms with greater gender diversity are more likely to invest in research and development. They show that this increase in innovation can lead to less advanced emerging economies catching up with more advanced

emerging economies in terms of innovation. Entrepreneurship research largely assumes that

entrepreneurship is an important mechanism for long term development and that institutional

factors, while understudied, are a vital piece of the puzzle to reconcile the conflicted relationship

found in the research (Naudé, 2011, 2010; Urbano et al., 2020). Improvements in the institutional

environment for women allow women to increase their participation in the economy and help

move the county closer to their production possibility frontier, improving the overall efficiency

of the economy (for example, Saridakis et al., 2021). Through this channel, the country should

see higher levels of economic growth and prosperity as more women enter into entrepreneurship.

III.   Methods and Data
     a.   Measuring Institutions

     We analyze how institutional protection of property rights for women affects female

entrepreneurship in two different models. In both models we use institutional measures from the

Economic Freedom of the World (EFW) index published by the Fraser Institute. The EFW index

is a measure of the extent to which the institutions of a country are consistent with the concept of

economic freedom or self-ownership (Gwartney et al., 2022) and is often used as a measure of

the quality of economic institutions or a measure of free markets. The EFW index consists of

five equally weighted components: size of government, legal system and property rights, sound

money, freedom to trade internationally and regulation. We focus our analysis on the legal

system and property rights component as measures of the quality of institutions. Through eight

sub-components[1] the index seeks to quantify "rule of law, security of property rights, an

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[1] The equally weighted components include: judicial independence, impartial courts, protection of property rights, military interference with rule of law and politics, integrity of the legal system, legal enforcement of contracts, regulatory costs of the sale of real property, and reliance of police.

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independent and unbiased judiciary, and impartial and effective enforcement of the law"

(Gwartney et. al 2022: 3).

The current version of the EFW index includes an adjustment to the legal system and property rights component to account for the fact that women are not afforded the same institutional protections under the law as men. The gender legal adjustment index was originally constructed by (Fike, 2017) based on the Women, Business and the Law (WBL) dataset and has been updated since (Gwartney et al. 2022). The Fike index is bounded between zero and one and is constructed such that higher values indicate fewer legal disparities. The new adjusted legal system and property rights index is calculated as one-half times the unadjusted index times the gender adjustment index (measuring property rights for women) plus one-half times the unadjusted index (measuring property rights for men) (Fike 2017).

The WBL dataset catalogues legal disparities faced by women across countries and time. The Fike gender adjustment index based on the WBL dataset is not alone. Iqbal et al. (2018) constructs a measure of legal disparities based on their contents as well. Their measure is a simple additive index of all disparities in the dataset. The index is constructed such that a disparity can be included in the index twice, once if the restriction applies to married women and a second time if it applies to unmarried women. The measure is bounded between zero and 71, with higher values indicating greater disparities. In contrast with the Iqbal et al. (2018) index, the Fike (2017) index includes a narrower set of negative legal rights and does not account for whether disparities affect married or unmarried women. See Table A1 in the appendix for a list of variables used to construct the Fike index and the Iqbal et al. index. We use the Fike index in our analysis due to its integration with a well-established measure of economic institutions and

property rights (Hall and Lawson 2014) and the concentration on negative rights that we believe are a channel for additional entrepreneurship through institutional change.

b. Cross-Country Analysis of Entrepreneurship

We use the measures of entrepreneurship from the Global Entrepreneurship Monitor (GEM). GEM defines Total Early-Stage Entrepreneurship (TEA) as those "who are either a nascent entrepreneur or owner-manager of a new business." With GEM data we are able to examine an occupational perspective of entrepreneurship that would be important to both a change in the supply of entrepreneurs from institutional change and a change in elasticity. At the country level, we use both a measure of overall entrepreneurship and a measure of female entrepreneurship relative to male entrepreneurship. The measure of overall entrepreneurship is the log of the TEA rate, which is the percentage of the 18-64 population engaged early-stage entrepreneurship. Our primary measure of entrepreneurship at the country level is the log of the female to male TEA ratio, which is the ratio of female TEA to male TEA. A histogram of the female to male TEA ratio is presented in the appendix. The majority of countries have more male entrepreneurs, and for many countries is at a two to one level.

Our analysis begins at the country level by simply testing whether accounting for differences in property rights between men and women predicts the overall level of entrepreneurship. We then examine if it predicts the ratio of female entrepreneurship to male entrepreneurship. The ratio of the percentage of female entrepreneurs as a proportion of the adult population to the percentage of male entrepreneurs as a proportion of the adult population, R_{it}, is regressed on measures of institutions and a set of control variables, X_{it}, in a large panel of countries. While past research has demonstrated the importance of economic institutions as a determinant of entrepreneurship (for example, Urbano et al., 2020), the overall research has

shown inconsistencies and unintended consequences in the relationship (for example, Bradley et al. 2021). The better inclusion of women in the research on institutions and entrepreneurship adds to this continuous conversation and can better inform policy considerations.

The nature of our measure of institutions allows for multiple tests of the importance of property rights for women. The measure of institutional quality (the quality of the legal system and property rights), I_{it}, is available in a form that has been adjusted, I_{it}^A, for the fact that women do not have the same institutional protections as men using the Fike gender adjustment index discussed above. In addition, we reconstruct the property rights index such that the measure does not account for this fact, an unadjusted measure, I_{it}^U. Finally, we construct a measure of the gap between the quality of institutions for women and the quality of institutions for men, G_{it} (a measure of equality of property rights). This measure is simply the gap measure of the difference between the legal system and property rights index that applies to women and the index that applies to men (values closer to zero mean more equal rights for women, negative values mean less equal rights).

The cross-country analysis is conducted by first estimating Equation 1 (which includes the adjusted index) and Equation 2 (which includes the unadjusted index). Then the respective coefficients on the adjusted index of property rights and the unadjusted index of property rights are compared to assess which better predicts measures of entrepreneurship. Finally, we estimate Equation 3 which includes both the unadjusted property rights index and the measure of the equality of property rights between men and women. This final specification estimates the effect of having equal legal protections for women holding the quality of legal protections for men constant. From this the relationship between equality of legal protections and the ratio of female to male entrepreneurship can be directly compared.

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$$R_{it} = \beta I_{it}^A + X_{it} + \tau_t + \mu_i + \epsilon_{it} \qquad (1)$$

$$R_{it} = \beta I_{it}^U + X_{it} + \tau_t + \mu_i + \epsilon_{it} \qquad (2)$$

$$R_{it} = \beta I_{it}^U + \gamma G_{it} + X_{it} + +\tau_t + \mu_i + \epsilon_{it} \qquad (3)$$

Country level control variables include the log of GDP per capita adjusted for purchasing power parity, the log of the working age female population, the female unemployment rate, private sector credit, the female employment share in the agricultural and industrial sectors, and gross female primary school education. Data for all country level control variables are obtained from the World Bank's World Development Indicators.[2] Our country level analysis of 109 countries for the years 2001 to 2019 includes country level fixed effects, μ_i, and period effects τ_t.

The ratio of female to male entrepreneurs varies considerable in our analysis with the smallest ratio being 0.218 and the largest 1.690. With such a wide variation, we also include a quantile analysis at the country level to allow for the equality of property rights to impact the entrepreneurship differently depending on the initial ratio. We believe that in areas where there is a wide gap in the ratio of female to male entrepreneurs, an improvement in female property rights will have a larger effect.

    c. Individual Level Analysis of Entrepreneurship

At the microeconomic level, we study the determinants of entrepreneurship for the individual. Equation 4 describes the baseline equation predicting female entrepreneurship as a function of county level institutions, I_{it} and G_{it}, individual-level characteristics, F_{jt}, and country level characteristics, C_{it}. In addition, the analysis includes country level fixed effects, μ_i, and period

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[2] The exception is the private sector credit variable. Data on the extent of private sector credit is obtained from Gwartney et. al (2022). The variable is a sub-component of their credit regulation variable which is measured as the government fiscal deficit as a proportion of private sector saving. The variable is then normalized to a scale from zero to ten where values closer to ten indicate more private sector credit.

effects τ_t. Countries are indexed by i, individuals are indexed by j, and time is indexed by t. The dependent variable, female entrepreneurship, E_{jit}, is a binary variable. Therefore, regression analysis is conducted using a logit model, which produces coefficient estimates as odds ratios (an odds ratio greater than one is interpreted as a positive effect).

$$E_{jit} = \beta I_{it} + \gamma G_{it} + \lambda F_{jt} + \gamma C_{it} + \mu_i + \tau_t + \epsilon_{jit} \tag{4}$$

We estimate Equation 4 using individual-level data from the Global Entrepreneurship Monitor which includes data on over one and a half million females across 110 countries between 2001 and 2019. The baseline measure of entrepreneurship in this dataset is an indicator variable for early-stage entrepreneurship by females.

Country level control variables are from the World Bank's World Development Indicators. Individual level controls from GEM include demographics such as age, age squared, and tertiary education. Additional individual level controls include variables indicating whether the subject: knows a person who stared a business in the past two years, sees good opportunities for starting a business in the next 6 months, has the required knowledge or skills to start a business, and whether the individual reports a fear of failure that would prevent them from starting a business. Summary statistics are in Table 1.

Table 1: Summary Statistics

Variable	Mean	SD	Min	Max	N
GEM Country-Level					
% of Pop. Total Early Stage Entrep.	11.555	7.628	1.480	49.600	973
Ratio % Female TEA/% Male TEA	0.636	0.218	0.050	1.690	973
Ratio % Female Opp. TEA/% Male Opp. TEA	0.931	0.111	0.510	1.360	360
Ln GDP per capita (ppp)	10.092	0.805	7.223	11.664	954
Private Sector Credit	8.369	2.063	0.000	10.000	971
Unemployment Rate Female	8.980	6.169	0.239	34.399	961
% Female in Agriculture	11.870	16.969	0.030	80.153	961
% Female in Industry	12.922	5.545	1.230	33.311	961
Ln Population 15-64 Female	15.648	1.653	11.439	19.994	961
Primary Education Female	103.419	8.051	74.513	149.627	859
Legal Sys. & Property Rights (adjusted)	6.314	1.511	2.523	8.998	970
Legal Sys. & Property Rights (unadjusted)	6.572	1.351	2.989	8.998	970
Legal Sys. Property Rights Equality	-0.515	0.866	-5.384	0.000	970
Gender Adjustment Index	11.555	7.628	1.480	49.600	973
GEM Individual-Level					
Total Early-Stage Entrepreneurship – Female	0.080	0.271	0.000	1.000	1538045
Age	42.384	15.111	0.000	100.000	1503130
Age Squared	2024.732	1393.901	0.000	10000.000	1503130
Education (tertiary)	0.095	0.294	0.000	1.000	1375928
Has Knowledge/Skills	0.420	0.494	0.000	1.000	1266218
Knows Entrepreneur	0.332	0.471	0.000	1.000	1299957
Fear of Failure	0.417	0.493	0.000	1.000	1299120
Sees Good Opportunities	0.366	0.482	0.000	1.000	1094989
Ln GDP per capita (ppp)	10.201	0.722	7.223	11.664	1531956
Ln Population	17.130	1.518	12.526	21.065	1538045
Legal System & Property Rights (adjusted)	6.631	1.468	2.523	8.998	1535256
Legal System & Property Rights (unadjusted)	6.827	1.311	3.017	8.998	1535256
Legal Sys. Property Rights Equality (female-male)	0.392	0.746	0.000	5.384	1535256
Gender Adjustment Index	0.932	0.127	0.294	1.000	1538045

Note: Data on the legal system and property rights and private sector credit are from the Economic Freedom of the World index (Gwartney et al. 2022). Country level and individual level data on entrepreneurship is from the Global Entrepreneurship Monitor. Country level control variables are from the World Development Indicators.

IV.   Results
    a.   Cross-Country Estimates

In existing studies, the relationship between aspects of economic freedom and early-stage

entrepreneurship are mixed. In a cross-section of 29 countries Bjørnskov and Foss (2008) find

the overall measure of economic freedom has a positive association with early-stage

entrepreneurship (using GEM data), however they find no evidence of a relationship between the

legal system and property rights component and early-stage entrepreneurship. By contrast,

Nystrom (2008) finds that various aspects of economic freedom, including the quality of the

legal system and property rights, are associated with self-employment. Leveraging the panel

aspect of the data Angulo-Guerrero et al. (2017) find a positive association between the legal

system and property rights measure and early-stage opportunity entrepreneurship in OECD

countries. These studies conducted their analysis before the gender adjustment to the legal

system and property rights measure was introduced.

Our first empirical exercise is to reinvestigate whether the quality of the legal system and

property rights is associated with total early-stage entrepreneurship (not the ratio of female to

male entrepreneurship) using a much boarder set of countries, including developing countries for

which there is more variation in the degree to which the legal system and property rights are

applied equally to men and women. We estimate a fixed effects model on an unbalanced panel of

109 countries. Estimates in odd numbered columns of Table 2 show the association between

entrepreneurship with legal system and property rights variable that has been adjusted to account

for differential treatment of women under the law, whereas even numbed columns show the

association for the unadjusted measure. The first two columns show baseline fixed effects

estimates, the next two column introduce period effects, columns 5 and 6 introduce control

variables without period effects, and the final two columns include controls as well as period

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effects. In all specifications, the adjusted measure of the legal system and property rights has a positive and significant effect on early-stage entrepreneurship. By contrast the coefficient on the unadjusted measure is not statistically significant in specifications that include only country fixed effects, and the unadjusted measure achieves a lower level of significance than the adjusted measure in specifications that include period effects. Using the measure of property rights that adjusts for how rights apply to women improves the explanatory power of the variable.

Table 2: Percentage of Adult Population Engaged in Early-Stage Entrepreneurship

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Legal Sys. & Property adjusted	0.176**		0.140**		0.125*		0.159**	
	(0.075)		(0.058)		(0.074)		(0.065)	
Legal Sys. & Property unadjusted		0.104		0.137*		0.069		0.169*
		(0.095)		(0.080)		(0.089)		(0.087)
Ln GDP per capita (ppp)					0.081	0.081	-0.221	-0.258
					(0.230)	(0.239)	(0.245)	(0.253)
Population 15- 64 (fem.)					-0.005	-0.005	-0.004	-0.005
					(0.008)	(0.008)	(0.009)	(0.009)
Unemployment (fem.)					0.301	0.349	-0.406	-0.400
					(0.373)	(0.385)	(0.357)	(0.364)
% in Agriculture (fem.)					-0.005	-0.005	0.011	0.010
					(0.009)	(0.009)	(0.009)	(0.009)
% in Industry (fem.)					-0.036***	-0.037***	0.005	0.007
					(0.013)	(0.013)	(0.016)	(0.016)
Private Credit					0.011	0.012	0.011	0.013
					(0.009)	(0.009)	(0.012)	(0.013)
Constant	1.145**	1.570**	1.434***	1.410***	-3.585	-3.993	9.543	9.662
	(0.474)	(0.622)	(0.353)	(0.516)	(5.331)	(5.512)	(5.986)	(6.096)
Country Fixed Effects	X	X	X	X	X	X	X	X
Year Effects			X	X			X	X
Observations	970	970	970	970	952	952	952	952
R-squared	0.019	0.005	0.167	0.164	0.072	0.066	0.189	0.187
Number of Countries	109	109	109	109	106	106	106	106

Notes: Three Legal System and Property Rights variables are included in the table. The "adjusted" variables is a measure that has been adjusted for the rights of women. The "unadjusted" variable is a measure that has not been adjusted for the rights of women. The "Equality" measure is a measure of equality of legal and property rights calculated as the difference between rights for women and rights for men. Standard errors clustered at the country level are in parentheses *** $p<0.01$, ** $p<0.05$, * $p<0.1$

The main hypothesis that we aim to test at the country level is assessed in Table 3 and

Table 4. In these tables the ratio of the percentage of female to male early-stage entrepreneurship

is regressed on the measures of the legal system and property rights. The most basic country

fixed effects specifications are presented in the first three columns of Table 3. Period effects are

included in the last three columns of Table 3 and control variables are introduced in Table 4. In

Column 1 of Table 3, the adjusted measure of property rights is positive and highly statistically

significant. A higher quality legal system and property rights, that accounts for how women are

treated under the law, is associated with a greater proportion of female entrepreneurship relative

to male entrepreneurship. Estimates using the unadjusted measure of the legal system and

property rights are in Column 2. The magnitude of the coefficient on the unadjusted index is

more than cut in half and is not statistically significant. Failing to adjust the measure of the

quality of the legal system and property rights reduces power of the variable to explain the ratio

of female to male entrepreneurship. In Column 3, both the unadjusted measure and the measure

of equality of institutional quality between men and women are included in the regression. The

coefficient on the equality measure is positive and highly statistically significant. Holding the

quality of institutions for men constant, more equal legal protection and property rights for

women increases the ratio of female to male entrepreneurs. Estimates in columns 4 through 6

include year fixed effects in addition to country fixed effects. The results are similar to the

baseline estimates in terms of significance, albeit with smaller magnitudes.

Table 4 re-estimates the effect of the unadjusted and equality measures of property rights

(Column 6 in Table 3) by introducing control variables to the model one at a time.[3] All

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[3] All country level results use the GEM measures of early-stage entrepreneurship (not opportunity entrepreneurship).
Country level data on female opportunity entrepreneurship is only available since 2013, which drastically reduces
the sample by dropping the time periods most likely to see variation in women's property rights. For this reason,
opportunity entrepreneurship is not the focus of this study. For completeness, in the appendix we report results that

specifications in Table 4 include both country and period effects. After controlling for income

per capita, female unemployment, female working age population, female industry shares, and

private sector credit, the measure of the equality in property rights is still positive and

statistically significant at the five percent level of significance or better. In the specification that

include gross female primary school enrollment (column 6), the point estimate on property rights

equality is still positive though the estimate is only marginally significant (at the 10% level). The

reduction in significance is due to the more than 10% reduction in the sample size.[4] Taken

together these cross-country results are evidence that the ratio of female to male entrepreneurs is

influenced by the degree to which institutions protect women's property rights.[5]

Table 3: Ratio of the Percentage Female to Male Engaged in Early-Stage Entrepreneurship (country-level)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Legal Sys. & Property adjusted	0.142*** (0.048)			0.096** (0.044)		
Legal Sys. & Property unadjusted		0.064 (0.060)	0.067 (0.055)		0.065 (0.055)	0.066 (0.053)
Legal Sys. & Property Equality			0.175*** (0.033)			0.090*** (0.028)
Constant	-1.409*** (0.304)	-0.935** (0.397)	-0.862** (0.368)	-1.258*** (0.266)	-1.092*** (0.359)	-1.035*** (0.347)
Country Fixed Effects	X	X	X	X	X	X
Year Effects				X	X	X
Observations	970	970	970	970	970	970
R-squared	0.018	0.003	0.032	0.130	0.125	0.132
Number of Countries	109	109	109	109	109	109

use the ratio of female opportunity to male opportunity entrepreneurship as the dependent variable. Though the results are much weaker, in the most complete specification the equality of rights for women variable still has a positive and significant effect on the ratio of (opportunity) entrepreneurship.
[4] Restricting the sample to observations in which education data is available but not controlling for education leads to a similar decline in statistical significance. Results are available upon request.
[5] This histogram in the appendix does not show evidence of many outlier observations. However, relative to the full sample average and county level averages, the female to male TEA ratio is unusually high in Japan in 2007 and it is unusually low in Latvia in 2007 and in Belgium in 2006. The results in Table 3 and Table 4 are robust to dropping these potential outlier observations.

Table 4: Ratio of the Percentage Female to Male Engaged in Early-Stage Entrepreneurship with controls – Legal System & Property Rights Equality (country-level)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Legal Sys. & Property unadjusted	0.084	0.085	0.071	0.079	0.081	0.092*
	(0.056)	(0.057)	(0.052)	(0.054)	(0.055)	(0.054)
Legal Sys. & Property Equality	0.101***	0.097***	0.093**	0.081**	0.085**	0.059*
	(0.029)	(0.030)	(0.037)	(0.034)	(0.035)	(0.035)
Ln GDP per capita (ppp)	-0.175	-0.218	-0.239	-0.333	-0.329	-0.069
	(0.173)	(0.204)	(0.195)	(0.251)	(0.255)	(0.212)
Unemployment (fem.)		-0.004	-0.005	-0.005	-0.006	-0.000
		(0.005)	(0.005)	(0.006)	(0.005)	(0.006)
Population 15-64 (fem.)			0.482	0.412	0.388	-0.367*
			(0.402)	(0.403)	(0.420)	(0.221)
% in Agriculture (fem.)				-0.002	-0.002	0.002
				(0.007)	(0.007)	(0.006)
% in Industry (fem.)				0.018*	0.018*	0.029***
				(0.011)	(0.011)	(0.009)
Private Credit					-0.006	-0.014**
					(0.006)	(0.007)
Primary Education (fem.)						0.000
						(0.002)
Constant	0.582	1.044	-6.156	-4.450	-4.082	4.767
	(1.627)	(1.969)	(5.459)	(5.384)	(5.585)	(3.850)
Country Fixed Effects	X	X	X	X	X	X
Year Effects	X	X	X	X	X	X
Observations	952	952	952	952	952	852
R-squared	0.139	0.140	0.151	0.158	0.158	0.163
Number of Countries	106	106	106	106	106	103

Notes: See the note to table 4 for a description of the legal system and property rights variables. All specifications include country and year fixed effects. Standard errors clustered at the country level in parentheses. *** p<0.01, ** p<0.05, * p<0.1

The estimates thus far find evidence that property rights for women influence the extent

of female entrepreneurship relative to male entrepreneurship. These estimates do not tell us

whether better protection of property rights for women increases female entrepreneurship in contexts where there is already a high ratio of female entrepreneurship or if the effect is due to increasing entrepreneurship in contexts where female entrepreneurship is low relative to male entrepreneurship. To better understand the context in which improvements in women's rights are increasing the ratio of female to male entrepreneurship we conduct a set of quantile regressions which are presented in Table 5 and Table 6. All estimates using quantile regression include country and period fixed effects.[6]

We study the effect of women's property rights at the following five quantiles of entrepreneurship, 0.1, 0.3, 0.5, 0.7 and 0.9. The results in Table 5 show that the adjusted measure of property rights is positive and statistically significant at the median and at the two quantiles below the median. Further, the effect is larger at lower quantiles. Similarly, effect of the property rights equality measure is larger at lower quantiles and is statistically significant at the median and quantiles below the median. These results indicate that improving property rights for women tends to increase female entrepreneurship in contexts where female entrepreneurship is low relative to male entrepreneurship.

The results in Table 6 estimate the same quantile regressions but include a set of control variables (those controls presented in Column 5 of Table 4).[7] The adjusted measure of property rights is once again significant at the median and the two quantiles below the median. With controls included, the property rights equality measure is not statistically significant. But like the results in Table 5, the effect of the adjusted measure of property rights and the equality measure are smaller in magnitude for higher quantiles and larger for lower quantiles. Quantile estimates

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[6] Quantiles estimates are conducted using the xtqreg STATA commend as described by (Machado and Santos Silva, 2019).

[7] Quantile estimates on the reduced sample that include the education control variable are presented in the appendix and show similar results to those in Table 6.

suggest that improvements in women's rights increase female entrepreneurship relative to male entrepreneurship in times and places where there is relatively low female entrepreneurship.

Table 5: Quantile Regressions – Country and Year Effects

	(1)	(2)	(3)	(4)	(5)
Quantiles:	0.1	0.3	0.5	0.7	0.9
Quantile Estimates of the Adjusted Legal System & Property Rights Index					
Legal Sys. & Property adjusted	0.147*	0.118**	0.095**	0.073	0.047
	(0.079)	(0.052)	(0.041)	(0.049)	(0.072)
Quantile Estimates of the Unadjusted Legal System & Property Rights Index					
Legal Sys. & Property unadjusted	0.092	0.077	0.065*	0.054	0.041
	(0.076)	(0.049)	(0.039)	(0.047)	(0.069)
Quantile Estimates of the Unadjusted and the Equality Legal System & Property Rights Index					
Legal Sys. & Property unadjusted	0.097	0.080	0.065*	0.052	0.036
	(0.075)	(0.049)	(0.039)	(0.046)	(0.070)
Legal Sys. & Property Equality	0.163*	0.122**	0.088*	0.057	0.019
	(0.092)	(0.060)	(0.048)	(0.057)	(0.086)
	0.097	0.080	0.065*	0.052	0.036
Observations	970	970	970	970	970

Notes: Three Legal System and Property Rights variables are included in the table. The "adjusted" variables is a measure that has been adjusted for the rights of women. The "unadjusted" variable is a measure that has not been adjusted for the rights of women. The "Equality" measure is a measure of equality of legal and property rights calculated as the difference between rights for women and rights for men. Standard errors are in parentheses.
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Quantile Regressions – Country and Year Effects with Controls

	(1)	(2)	(3)	(4)	(5)
VARIABLES	0.1	0.3	0.5	0.7	0.9
Quantile Estimates of the Adjusted Legal System & Property Rights Index					
Legal Sys. & Property adjusted	0.151*	0.123**	0.102**	0.083	0.061
	(0.085)	(0.053)	(0.043)	(0.053)	(0.077)
Ln GDP per capita (ppp)	-0.798**	-0.539**	-0.342*	-0.163	0.046
	(0.343)	(0.213)	(0.175)	(0.211)	(0.311)
Unemployment (fem.)	-0.016	-0.010*	-0.006	-0.002	0.002
	(0.010)	(0.006)	(0.005)	(0.006)	(0.009)

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Population 15- 64 (fem.)	0.890	0.596	0.372	0.168	-0.069
	(0.614)	(0.382)	(0.311)	(0.378)	(0.557)
% in Agriculture (fem.)	-0.014	-0.007	-0.002	0.003	0.009
	(0.010)	(0.006)	(0.005)	(0.006)	(0.009)
% in Industry (fem.)	0.027	0.022**	0.019**	0.016	0.013
	(0.017)	(0.011)	(0.009)	(0.011)	(0.016)
Private Sector Credit	-0.008	-0.006	-0.005	-0.004	-0.003
	(0.012)	(0.007)	(0.006)	(0.007)	(0.011)
Quantile Estimates of the Unadjusted Legal System & Property Rights Index					
Legal Sys. & Property unadjusted	0.100	0.088	0.079*	0.070	0.060
	(0.088)	(0.055)	(0.044)	(0.053)	(0.080)
Ln GDP per capita (ppp)	-0.808**	-0.548***	-0.355**	-0.181	0.035
	(0.340)	(0.210)	(0.171)	(0.204)	(0.306)
Unemployment (fem.)	-0.016*	-0.010*	-0.006	-0.003	0.002
	(0.009)	(0.006)	(0.005)	(0.006)	(0.009)
Population 15- 64 (fem.)	0.903	0.609	0.391	0.194	-0.050
	(0.610)	(0.378)	(0.306)	(0.367)	(0.549)
% in Agriculture (fem.)	-0.015	-0.008	-0.002	0.003	0.009
	(0.010)	(0.006)	(0.005)	(0.006)	(0.009)
% in Industry (fem.)	0.028	0.023**	0.020**	0.017	0.014
	(0.018)	(0.011)	(0.009)	(0.011)	(0.016)
Private Sector Credit	-0.008	-0.006	-0.004	-0.003	-0.001
	(0.012)	(0.007)	(0.006)	(0.007)	(0.011)
Quantile Estimates of the Unadjusted and the Equality Legal System & Property Rights Index					
Legal Sys. & Property unadjusted	0.101	0.089	0.080	0.072	0.063
	(0.112)	(0.068)	(0.114)	(0.177)	(0.256)
Legal Sys. & Property Equality	0.130	0.104	0.083	0.065	0.044
	(0.128)	(0.077)	(0.131)	(0.202)	(0.293)
Ln GDP per capita (ppp)	-0.746*	-0.505*	-0.316	-0.150	0.046
	(0.438)	(0.264)	(0.447)	(0.691)	(1.001)
Unemployment (fem.)	-0.015	-0.010	-0.005	-0.002	0.002
	(0.012)	(0.007)	(0.012)	(0.019)	(0.027)
Population 15- 64 (fem.)	0.906	0.607	0.372	0.166	-0.078
	(0.785)	(0.474)	(0.801)	(1.239)	(1.793)
% in Agriculture (fem.)	-0.014	-0.007	-0.001	0.004	0.009
	(0.012)	(0.007)	(0.013)	(0.020)	(0.028)
% in Industry (fem.)	0.023	0.021	0.018	0.016	0.014
	(0.022)	(0.014)	(0.023)	(0.035)	(0.051)
Private Sector Credit	-0.009	-0.007	-0.006	-0.004	-0.003
	(0.015)	(0.009)	(0.015)	(0.023)	(0.034)
Observations	952	952	952	952	952

Notes: See the note to table 4 for a description of the legal system and property rights variables. Standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$

b. Individual Level Estimates

To buttress the findings from cross-country estimates we now turn to individual level data. The measures of entrepreneurship at the country level are derived from harmonized individual level GEM data to construct a panel. We set aside the country-level panel and study decisions to engage in early-stage entrepreneurship using individual level data from GEM pooled across 104 countries.

We study which factors predict whether women chose to be entrepreneurs by estimating a logit model where coefficients are expressed as odds ratios. Coefficients greater than one indicate greater than even odds (a positive effect) whereas an odds ratio less than one indicates less than even odds (a negative effect). Whether a women chose to engage in early-stage entrepreneurship is regressed on measures of property rights, a set of country level control variables, as well as country and year fixed effects. Estimates in the first column of Table 7 show that the adjusted measure of the quality of the legal system and property rights has highly significant effect on female entrepreneurship with an odds ratio greater than one (1.147). The coefficient on the unadjusted measure in Column 2 is also highly significant and greater than one (1.122), though the odds ratio is slightly smaller than that of the adjusted measure. Finally, in Column 3, we present estimates that include both the unadjusted measure and the measure of the equality between the quality of property rights for men and for women. The equality measure is highly significant and has an odds ratio greater than one. Therefore, more equal protection of property rights between men and women is associated with greater odds that women will choose to engage in early-stage entrepreneurship.

The results presented in Table 8 re-estimate the specification in column 3 of Table 7 adding one individual level control variable at a time. The positive and significant effect of property rights equality on female entrepreneurship is robust to controlling for age, age squared

(column 1) and the education of the individual (column 2). Further, the results are robust to controlling for whether the individual knows other entrepreneurs, reports having the necessary skills to be an entrepreneur, and reports fear of failing in their entrepreneurial venture. However, including all of the aforementioned control variables as well as an indicator variable for whether the individual reports seeing opportunities for entrepreneurship in the next 6-months leads to a statistically insignificant coefficient on the property rights equality measure. The loss of significance after controlling for perceived opportunities for entrepreneurship is not surprising. If being able to sign contracts, protect one's assets, and seek legal recourse to resolve business disputes is a necessary condition for entrepreneurship, one would expect an entrepreneur to have a dim view of entrepreneurial opportunities if operating in an environment that lacks this foundational institutional framework.

Table 7: Early-Stage Female Entrepreneurship – Logit Model with Country Controls

VARIABLES	(1) odds ratio	(2) odds ratio	(3) odds ratio
Legal Sys. & Property adjusted	1.147***		
	(0.0206)		
Legal Sys. & Property unadjusted		1.122***	1.131***
		(0.0213)	(0.0215)
Legal Sys. & Property Equality			1.121***
			(0.0247)
Ln GDP per capita	0.609***	0.613***	0.613***
	(0.0240)	(0.0242)	(0.0242)
Ln Population	1.015	1.010	1.035
	(0.0999)	(0.0995)	(0.102)
Constant	22.97*	25.13*	16.36
	(39.57)	(43.34)	(28.30)
Country Fixed Effects	X	X	X
Year Effects	X	X	X
Observations	1,530,478	1,530,478	1,530,478

Standard errors in parentheses *** $p<0.01$, ** $p<0.05$, * $p<0.1$

Taken together, the logit estimates using individual level data are consistent with the cross-county estimates presented in the previous section. Equally protecting property rights for women is associated with more female entrepreneurship.

Table 8: Early-Stage Female Entrepreneurship – Logit Model with Country and Individual Level Controls

VARIABLES	(1) odds ratio	(2) odds ratio	(3) odds ratio	(4) odds ratio	(5) odds ratio	(6) odds ratio
Legal Sys. & Property unadjusted	1.112***	1.114***	1.091***	1.073***	1.061**	1.061**
	(0.0216)	(0.0228)	(0.0251)	(0.0258)	(0.0257)	(0.0274)
Legal Sys. & Property Equality	1.091***	1.109***	1.107***	1.094***	1.070**	1.032
	(0.0244)	(0.0264)	(0.0283)	(0.0298)	(0.0293)	(0.0303)
Ln GDP per capita	0.674***	0.679***	0.544***	0.528***	0.522***	0.475***
	(0.0270)	(0.0282)	(0.0266)	(0.0270)	(0.0269)	(0.0260)
Ln Population	1.146	1.247**	0.816	0.992	1.048	1.188
	(0.115)	(0.134)	(0.102)	(0.129)	(0.137)	(0.168)
Age	1.133***	1.138***	1.128***	1.100***	1.103***	1.103***
	(0.00174)	(0.00190)	(0.00206)	(0.00208)	(0.00210)	(0.00223)
Age Squared	0.998***	0.998***	0.998***	0.999***	0.999***	0.999***
	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)
Tertiary Education		1.360***	1.205***	1.106***	1.100***	1.089***
		(0.0162)	(0.0167)	(0.0158)	(0.0158)	(0.0170)
Knows Entrepreneur			3.105***	2.405***	2.401***	2.215***
			(0.0239)	(0.0193)	(0.0194)	(0.0192)
Has Skills Required				4.976***	4.739***	4.311***
				(0.0482)	(0.0463)	(0.0451)
Fear of Failure					0.694***	0.713***
					(0.00582)	(0.00637)
Sees Opportunities						1.633***
						(0.0143)
Country Fixed Effects	X	X	X	X	X	X
Year Effects	X	X	X	X	X	X
Constant	0.187	0.0381*	184.6**	4.897	2.541	0.558
	(0.330)	(0.0714)	(402.2)	(11.11)	(5.810)	(1.376)
Observations	1,495,526	1,341,289	1,129,581	1,085,334	1,070,940	902,789

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

V.   Conclusion

The relationship between the institutional environment and entrepreneurship has been studied extensively. In contrast, few have studied how the unique institutional framework that women operate in influences female entrepreneurship. This study contributes to filling this gap in the literature by conducting an empirical analysis of three measures of entrepreneurship.

We revisit the question of whether institutions influence entrepreneurship in general using a much wider (109 countries) and longer sample (eighteen years) than previous studies which have focused on rich countries in recent years. Our results confirm that for a set of both developed and developing countries the quality of the legal system and property rights are associated with more early-stage entrepreneurship.

Our main contribution is the evidence that more equality in the protection of women's property rights increases the ratio of female entrepreneurship to male entrepreneurship at the country-level. These country-level panel estimates are robust to accounting for country fixed effects as well as a set of control variables. Quantile regressions show that the association appears to be concentrated in contexts where female entrepreneurship is low relative to male entrepreneurship. In addition, we present evidence using individual level data. At the individual level, more equal protection of property rights is associated with a greater likelihood of early-stage female entrepreneurship.

Together these results demonstrate that more equal protection of property rights for women changes the allocation of entrepreneurship such that more women become entrepreneurs. Our results highlight the importance of accounting for women's rights in measures of institutional quality. Finally, our evidence of an association between women's property rights and female entrepreneurship contributes to the literature on female empowerment and the literature on economic development more generally.

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Appendix:

Table A1: Questions Used to Construct Gender Legal Rights Indices

Fike (2017) – Adjustment Index for EFW	Iqbal et al. (2018)
Can a woman apply for a passport in the same way as a man?	Can an unmarried woman apply for a passport in the same way as an unmarried man?
Can a woman travel outside the country in the same way as a man?	Can a married woman apply for a passport in the same way as a married man?
Can a woman travel outside her home in the same way as a man?	Can an unmarried woman obtain a national ID card in the same way as an unmarried man?
Can a woman choose where to live in the same way as a man?	Can a married woman obtain a national ID card in the same way as a married man?
	Can an unmarried woman travel outside the country in the same way as an unmarried man?
Can a woman get a job in the same way as a man?	
Can a woman work at night in the same way as a man?	Can a married woman travel outside the country in the same way as a married man?
Can a woman work in a job deemed dangerous in the same way as a man?	Can an unmarried woman travel outside her home in the same way as an unmarried man?
Can a woman work in an industrial job in the same way as a man?	Can a married woman travel outside her home in the same way as a married man?
	Can an unmarried woman get a job or pursue a trade or profession in the same way as an unmarried man?
Is there no legal provision that requires a married woman to obey her husband?	
Can a woman be head of household in the same way as a man?	Can a married woman get a job or pursue a trade or profession in the same way as a married man?
Can a woman sign a contract in the same way as a man?	Can an unmarried woman sign a contract in the same way as an unmarried man?
Can a woman register a business in the same way as a man?	Can a married woman sign a contract in the same way as a married man?
Can a woman open a bank account in the same way as a man?	Can an unmarried woman register a business in the same way as an unmarried man?
Do men and women have equal ownership rights to immovable property?	Can a married woman register a business in the same way as a married man?
Do sons and daughters have equal rights to inherit assets from their parents?	Can an unmarried woman open a bank account in the same way as an unmarried man?
Do male and female surviving spouses have equal rights to inherit assets?	Can a married woman open a bank account in the same way as a married man?
Does the law grant spouses equal administrative authority over assets during marriage?	Can an unmarried woman choose where to live in the same way as an unmarried man?
	Can a married woman choose where to live in the same way as a married man?
	Can an unmarried woman confer citizenship on her children in the same way as an unmarried man?
	Can a married woman confer citizenship on her children in the same way as a married man?
	Can an unmarried woman be head of household or head of family in the same way as an unmarried man?
	Can a married woman be head of household or head of family in the same way as a married man?
	Can a married woman confer citizenship to a non-national spouse in the same way as a man?

Are married women required by law to obey their husbands?

Who legally administers marital property?

Does the law provide for the valuation of nonmonetary contributions?

Do unmarried men and unmarried women have equal ownership rights to property?

Do married men and married women have equal ownership rights to property?

Do sons and daughters have equal rights to inherit assets from their parents?

Do female and male surviving spouses have equal rights to inherit assets?

Does a woman's testimony carry the same evidentiary weight in court as a man's?

Are there tax deductions or credits specific to men?

Does the law prohibit discrimination by creditors on the basis of gender in access to credit?

Does the law prohibit discrimination by creditors on the basis of marital status in access to credit?

Is there a difference in the age at which a man and a women can retire and receive full benefits?

Can non-pregnant and non-nursing women work the same night hours as men?

Does the law mandate equal remuneration for work of equal value?

Does the law mandate nondiscrimination based on gender in hiring?

Is it prohibited for prospective employers to ask about family status?

Is dismissal of pregnant workers prohibited?

Are employers required to provide break time for nursing mothers?

Is there a difference in the age at which a man and a woman can retire and receive partial benefits?

Is there a difference in the mandatory retirement age for men and women?

Can non-pregnant and non-nursing women do the same jobs as men?

Is there a difference in the length of paid maternity and paternity leave?*

Is there domestic violence legislation?

Is there legislation that specifically addresses sexual harassment?

Does legislation explicitly criminalize marital rape?

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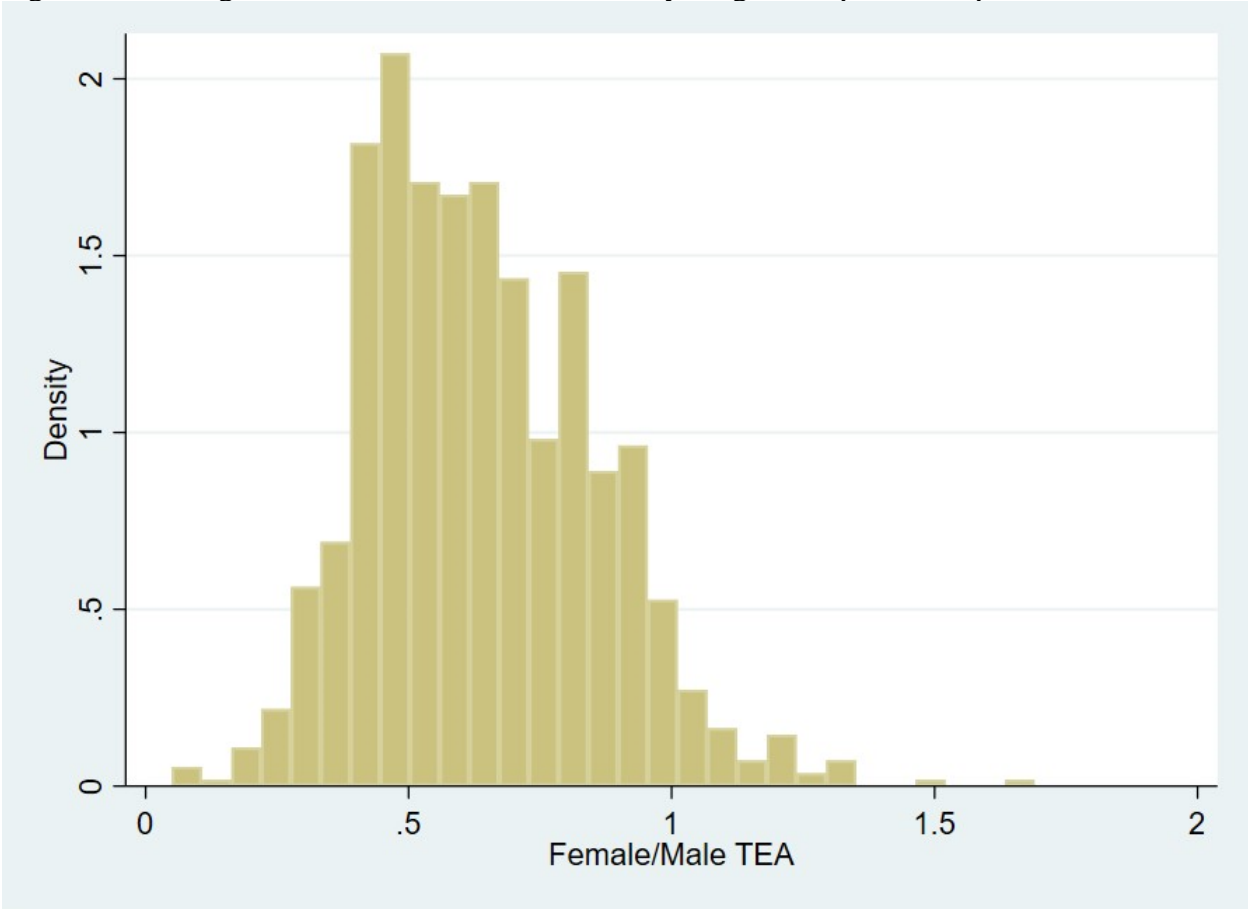Figure A1: Histogram of Female to Male Total Early-Stage Entrepreneurship

Table A2: Ratio of the Percentage Female to Male Engaged in Early-Stage Opportunity Entrepreneurship (country-level)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Legal Sys. & Property adjusted	-0.015 (0.041)			-0.008 (0.043)		
Legal Sys. & Property unadjusted		-0.028 (0.041)	-0.016 (0.042)		-0.025 (0.044)	-0.009 (0.044)
Legal Sys. & Property Equality			0.076 (0.052)			0.092 (0.057)
Constant	0.009 (0.252)	0.102 (0.263)	0.066 (0.260)	-0.029 (0.259)	0.079 (0.276)	0.033 (0.272)
Country Fixed Effects	X	X	X	X	X	X
Year Effects				X	X	X
Observations	360	360	360	360	360	360
R-squared	0.000	0.002	0.005	0.027	0.028	0.033
Number of Countries	94	94	94	94	94	94

Notes: Three Legal System and Property Rights variables are included in the table. The "adjusted" variables is a measure that has been adjusted for the rights of women. The "unadjusted" variable is a measure that has not been adjusted for the rights of women. The "Equality" measure is a measure of equality of legal and property rights calculated as the difference between rights for women and rights for men. Standard errors clustered at the country level in parentheses.

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A3: Ratio of the Percentage Female to Male Engaged in Early-Stage Opportunity Entrepreneurship with controls (country-level)

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
Legal Sys. & Property adjusted	-0.026 (0.045)			-0.017 (0.047)		
Legal Sys. & Property unadjusted		-0.041 (0.041)	-0.017 (0.046)		-0.036 (0.044)	-0.008 (0.049)
Legal Sys. & Property Equality			0.123* (0.066)			0.145** (0.068)
Ln GDP per capita (ppp)	0.101 (0.271)	0.099 (0.271)	0.060 (0.288)	0.239 (0.340)	0.238 (0.338)	0.208 (0.359)
Unemployment (fem.)	0.003 (0.005)	0.003 (0.005)	0.004 (0.005)	0.002 (0.005)	0.002 (0.005)	0.002 (0.005)
Population 15- 64 (fem.)	-0.125 (0.304)	-0.120 (0.304)	-0.127 (0.308)	0.054 (0.414)	0.065 (0.411)	0.088 (0.429)
% in Agriculture (fem.)	-0.006 (0.005)	-0.006 (0.005)	-0.007 (0.006)	-0.006 (0.005)	-0.006 (0.005)	-0.007 (0.005)
% in Industry (fem.)	-0.009 (0.015)	-0.009 (0.014)	-0.011 (0.015)	-0.011 (0.015)	-0.010 (0.015)	-0.013 (0.015)
Private Credit	-0.005 (0.005)	-0.005 (0.005)	-0.005 (0.005)	-0.004 (0.006)	-0.004 (0.006)	-0.004 (0.006)
Constant	1.220 (5.722)	1.273 (5.734)	1.717 (5.909)	-2.990 (8.720)	-3.024 (8.654)	-3.129 (9.144)
Country Fixed Effects	X	X	X	X	X	X
Year Effects				X	X	X
Observations	354	354	354	354	354	354
R-squared	0.013	0.015	0.022	0.041	0.042	0.051
Number of Countries	93	93	93	93	93	93

Notes: Three Legal System and Property Rights variables are included in the table. The "adjusted" variables is a measure that has been adjusted for the rights of women. The "unadjusted" variable is a measure that has not been adjusted for the rights of women. The "equality" measure is a measure of equality of legal and property rights calculated as the difference between rights for women and rights for men. Standard errors clustered at the country level in parentheses.
*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table A4: Quantile Regressions – Country and Year Effects with Controls

VARIABLES	(1) 0.1	(2) 0.3	(3) 0.5	(4) 0.7	(5) 0.9
Quantile Estimates of the Adjusted Legal System & Property Rights Index					
Legal Sys. & Property adjusted	0.111	0.104**	0.099***	0.094**	0.087
	(0.071)	(0.045)	(0.038)	(0.047)	(0.071)
Ln GDP per capita (ppp)	-0.145	-0.106	-0.075	-0.047	-0.011
	(0.270)	(0.173)	(0.144)	(0.178)	(0.271)
Unemployment (fem.)	-0.003	-0.001	-0.000	0.001	0.002
	(0.009)	(0.005)	(0.005)	(0.006)	(0.009)
Population 15- 64 (fem.)	-0.527	-0.437*	-0.366*	-0.300	-0.216
	(0.383)	(0.245)	(0.204)	(0.253)	(0.384)
% in Agriculture (fem.)	-0.006	-0.001	0.002	0.005	0.009
	(0.009)	(0.006)	(0.005)	(0.006)	(0.009)
% in Industry (fem.)	0.042***	0.035***	0.029***	0.024**	0.018
	(0.015)	(0.010)	(0.008)	(0.010)	(0.015)
Private Sector Credit	-0.021*	-0.017**	-0.014**	-0.010	-0.007
	(0.011)	(0.007)	(0.006)	(0.007)	(0.011)
Primary Education (fem.)	-0.002	-0.001	0.000	0.001	0.002
	(0.004)	(0.002)	(0.002)	(0.002)	(0.004)
Quantile Estimates of the Unadjusted Legal System & Property Rights Index					
Legal Sys. & Property unadjusted	0.112	0.100*	0.091**	0.083	0.072
	(0.085)	(0.054)	(0.045)	(0.057)	(0.086)
Ln GDP per capita (ppp)	0.050	0.055	0.059	0.063	0.068
	(0.071)	(0.045)	(0.038)	(0.048)	(0.072)
Unemployment (fem.)	-0.147	-0.102	-0.067	-0.034	0.008
	(0.274)	(0.174)	(0.147)	(0.184)	(0.279)
Population 15- 64 (fem.)	-0.003	-0.001	-0.000	0.001	0.002
	(0.009)	(0.005)	(0.005)	(0.006)	(0.009)
% in Agriculture (fem.)	-0.522	-0.432*	-0.363*	-0.299	-0.217
	(0.386)	(0.245)	(0.207)	(0.259)	(0.393)
% in Industry (fem.)	-0.006	-0.001	0.002	0.005	0.010
	(0.009)	(0.006)	(0.005)	(0.006)	(0.009)
Private Sector Credit	0.042***	0.035***	0.029***	0.024**	0.017
	(0.016)	(0.010)	(0.008)	(0.011)	(0.016)
Primary Education (fem.)	-0.021*	-0.017**	-0.014**	-0.011	-0.007
	(0.011)	(0.007)	(0.006)	(0.007)	(0.011)
Quantile Estimates of the Unadjusted and the Equality Legal System & Property Rights Index					
Legal Sys. & Property unadjusted	0.112	0.100*	0.091**	0.083	0.072
	(0.085)	(0.054)	(0.045)	(0.057)	(0.086)
Legal Sys. & Property Equality	0.050	0.055	0.059	0.063	0.068
	(0.071)	(0.045)	(0.038)	(0.048)	(0.072)
Ln GDP per capita (ppp)	-0.147	-0.102	-0.067	-0.034	0.008
	(0.274)	(0.174)	(0.147)	(0.184)	(0.279)
Unemployment (fem.)	-0.003	-0.001	-0.000	0.001	0.002
	(0.009)	(0.005)	(0.005)	(0.006)	(0.009)

Population 15- 64 (fem.)	-0.522	-0.432*	-0.363*	-0.299	-0.217
	(0.386)	(0.245)	(0.207)	(0.259)	(0.393)
% in Agriculture (fem.)	-0.006	-0.001	0.002	0.005	0.010
	(0.009)	(0.006)	(0.005)	(0.006)	(0.009)
% in Industry (fem.)	0.042***	0.035***	0.029***	0.024**	0.017
	(0.016)	(0.010)	(0.008)	(0.011)	(0.016)
Private Sector Credit	-0.021*	-0.017**	-0.014**	-0.011	-0.007
	(0.011)	(0.007)	(0.006)	(0.007)	(0.011)
Primary Education (fem.)	-0.002	-0.001	0.000	0.001	0.002
	(0.004)	(0.002)	(0.002)	(0.003)	(0.004)
Observations	852	852	852	852	852

Notes: See the note to table 4 for a description of the legal system and property rights variables. Standard errors are in parentheses. *** $p<0.01$, ** $p<0.05$, * $p<0.1$