

Unequal Laws and the Disempowerment of Women in the Labor Market

Evidence from Firm-Level Data

Asif Islam

Silvia Muzi

Mohammad Amin



WORLD BANK GROUP

Development Economics

Global Indicators Group

September 2017

Abstract

Institutions are defined as the set of rules that govern human interactions. When these rules are discriminatory, they may disempower segments of a population in the economic spheres of activity. This study explores whether laws that discriminate against women influence their engagement in the economy. The study adopts a holistic approach, exploring an overall measure of unequal laws also known as legal gender disparities, and relates it to several labor market outcomes

for women. Using data for more than 60,000 firms across 104 economies, the study finds that unequal laws not only discourage women's participation in the private sector workforce, but also their likelihood to become top managers and owners of firms. Suggestive evidence indicates that access to finance and corruption are pathways by which legal gender disparities disempower women in the labor market.

This paper is a product of the Global Indicators Group, Development Economics. It is part of a larger effort by the World Bank to provide open access to its research and make a contribution to development policy discussions around the world. Policy Research Working Papers are also posted on the Web at <http://econ.worldbank.org>. The authors may be contacted at aislam@worldbank.org.

The Policy Research Working Paper Series disseminates the findings of work in progress to encourage the exchange of ideas about development issues. An objective of the series is to get the findings out quickly, even if the presentations are less than fully polished. The papers carry the names of the authors and should be cited accordingly. The findings, interpretations, and conclusions expressed in this paper are entirely those of the authors. They do not necessarily represent the views of the International Bank for Reconstruction and Development/World Bank and its affiliated organizations, or those of the Executive Directors of the World Bank or the governments they represent.

Unequal Laws and the Disempowerment of Women in the Labor Market: Evidence from Firm-Level Data

Asif Islam¹, Silvia Muzi² and Mohammad Amin³

JEL: K10, J16, J21

Keywords: Gender and Economic Empowerment; Financial Inclusion; Female Workers' Gender and Employment; Gender Inequality Under the Law

¹ Enterprise Analysis Unit, Development Economics Vice Presidency, World Bank, email: aislam@worldbank.org

² Enterprise Analysis Unit, Development Economics Vice Presidency, World Bank, email: smuzi@worldbank.org

³ Enterprise Analysis Unit and Malaysia Country Office, Development Economics Vice Presidency, World Bank, email: mamin@worldbank.org

Unequal Laws and the Disempowerment of Women in the Labor Market: Evidence from Firm-Level Data

1. Introduction

Institutions are defined as the set of rules that govern interactions in society (North, 1990). However, these rules can be discriminatory against certain segments of the population, such as women. When gender discrimination is embodied into the legal system, it can play a substantial role in the exclusion of women from the labor market. A system of laws that discriminate against women has the capacity to affect their lives in a multitude of dimensions. Allocation of time is distorted towards certain tasks as opposed to others. This reverberates all through education decisions, fertility choices and career options. The awareness of a system that distorts labor market outcomes can also discourage women from engaging in economic activity, leading to a waste of talent in the economy. Furthermore, as these laws persists, the effects can echo through generations.

The effects of legal gender discrimination can be detrimental not only for women but for society as a whole. There is much consensus in economics on the costs of gender inequality to society. The exclusion of women from economic activity and the resulting gender gaps in labor force participation, education and entrepreneurship lead to low human capital, low productivity, and low economic growth (Abu-Ghaida and Klasen, 2004; Bandara, 2015; Balamoune-Lutz and McGillivray, 2015; Dollar and Gatti, 1999; Gaddis and Klasen, 2014; Goldin, 1995; Klasen, 2002; Klasen and Lammana, 2009; Knowles et al., 2002; Lagerlof, 2003; World Bank, 2011). Through simulations it has been shown that many countries can gain at least a 15% increase in GDP if gender gaps were removed (Cuberes and Teignier, 2014).

The goal of this study is to establish the link between laws that discriminate against women and women's participation in the formal labor market, as well as their ability to achieve top managerial positions and become owners of firms. This study adopts a holistic approach. Our concern is not one or two laws, but a system of laws that entangle different aspects of the lives of women. We also do not want to restrict the analysis to simple labor market engagement, but expand it to include empowering outcomes such as top managerial positions. For this study, we use two prominent World Bank data sets, the Women, Business and the Law database and the Enterprise Surveys. The Women, Business and the Law database explores the laws that serve as impediments for women in the economic sphere. The overall number of discriminatory laws by gender has been quantified as a measure of legal gender disparities (Iqbal et al., 2016). We use this indicator and combine it with rich firm level data from the World Bank Enterprise Surveys spanning over 60,000 firms across 104 economies. Information regarding employment, ownership, and managerial positions by gender are available by firm.

We find that legal gender disparities do hinder women's engagement in the economic sector, both as workers and as top managers or business owners. We also attempt to uncover pathways that explain the relationship between legal gender disparities and the likelihood of women to be business owners and managers, and some suggestive evidence points to discrimination in access to finance and corruption. Women managers and business owners are less engaged with the financial sector - more dependent on internal funds and less likely to have an overdraft facility - in economies that have a higher number of legal gender disparities. Women business owners and managers are also more likely to face bribe requests when obtaining an operating license in economies where a greater number of laws discriminate against women. One possibility is that if the legal system does not provide recourse for women, other actors may take advantage of it and

extract more rents from them especially when they apply for operating licenses. This is consistent with findings in the literature that women entrepreneurs are susceptible to harsher business environment in terms of access to finance and even interference and harassment by government officials (Ellis et al., 2006; Muravyev et al., 2009).

This is not the first study to explore the relationship between legal gender discrimination and gender outcomes. However, most of the existing studies focus on a particular country or a few countries and on specific laws. For example, studies look at the impact on gender outcomes of the Equal Employment Opportunities Act (Eberts and Stone 1985) and the Equal Pay Act in the United States (Neumark and Stock 2001), childcare services in Canada (Powell 1988) and in 20 OECD countries (Bassanini and Duval, 2006), as well as the impact of parental leave laws (Ruhm 1998; Baum, 2003; Berger and Waldfogel, 2004). Also see Leonard (1985) and Weichselbaumer and Winter-Ebmer (2007) and Morrison et al. (2007). Few studies have taken a global approach. A majority of the global studies utilize country-level analysis, focus on specific laws, or explore outcomes other than the labor market. Austen and Mavisakalyn (2016) find that constitutional protections increase the proportion of women in parliament – a measure of women’s empowerment – in more than 106 economies. Similarly, Gonzales et al (2015) utilize country-level analysis to show the effect of various laws on female labor force participation. Branisa et al., (2013) use country-level data to explore the effects of social institutional gender inequality on education, child mortality, fertility, and governance using the Social Institutions and Gender Index (SIGI), an aggregate measure that does not capture laws alone, but mixes in several variables that reflect income and social institutions.

Fewer studies are global in nature and utilize micro-level data. Sekkat et al (2015) use firm-level data to show that the presence of women in the ownership in the firm increases the likelihood of

the top manager to be a woman as well. More closely related to this study, Amin et al. (2015) use firm-level data across 58 economies and find that the presence of non-discrimination clauses in hiring increases women's employment. Amin et al. (2016b) also uses firm-level data to uncover the effects of mandated paternity leave on women's employment. This study builds on this strand of research by combining micro firm-level data across countries to explore the link between overall gender discrimination in laws and goes beyond women's employment by exploring indicators of women's empowerment - women's presence in top managerial positions and ownership of firms. The use of micro firm-level data allows the analysis to account for firm-level heterogeneities given that several firm-level characteristics such as sector, size, access to finance and so forth can influence the nature of employment, firm ownership, and firm management. Furthermore, the use of firm-level data alleviates simultaneity bias as it is unlikely that an individual firm can affect overall country-level institutions (Paunov, 2016).

In summary, this study makes the following contributions to the literature. First it utilizes an aggregate measure of legal gender discrimination and links it with a set of labor market outcomes for women, including employment, managerial positions, and firm ownership. Second, the study conducts a global analysis of 104 economies using rich micro-level firm data that follow the same methodology and use the same survey instrument across all countries to allow for comparisons across economies. Firm-level data allow the analysis to account for several firm-level heterogeneities, including firm sector and size. Finally, the study also attempts to uncover the pathways by which systematic legal gender discrimination that permeates through several laws can disempower women in the labor market.

The paper is organized as follows. Section 2 provides the conceptual underpinnings of the analysis, section 3 provides the data and empirical strategy, section 4 presents the results. Robustness checks

are presented in section 5, while section 6 explores the pathways or mechanisms. Section 7 concludes.

2. Conceptual Framework

The theoretical basis of the relationship between discriminatory legal institutions and gender outcomes has to do with the allocation of time. Choices of time allocation are rooted in models of intra-household decision making processes (Sen 1990, McElroy 1990). Initially much of the literature assumed that households were unitary, that is they maximized a joint utility function, obviating any conflict between members of the household (Becker 1981). The argument for these models was that the bargaining occurred during the mate selection phase, and thus once a household was formed, members had similar preferences. However, several models departed from this assumption and allowed for differences in preferences over resource allocation among household members. These models were classified as bargaining models and their allowance for conflicts within the household gained empirical support as little evidence was found for unitary household models (see for example, Thomas, 1997).

Under bargaining models, husband and wife have different utility functions that depend on the consumption of private goods. Both husband and wife bargain over resource allocation to maximize their respective utility functions. The bargaining outcome depends on the husband's and wife's individual threat points. The threat point is the utility obtained if bargaining breaks down permanently. The higher is the utility of a member of the household if bargaining breaks down, the greater is the influence of the member on the bargaining outcome. Threat points are influenced by a number of factors called "extra household environmental parameters" (McElroy, 1990). Discriminatory laws affect such parameters thereby altering the bargaining outcomes in the

household (Branisa et al., 2013). Thus, the higher the number of legal gender disparities in an economy, the lower the threat point of women, and thus the lower the bargaining outcomes, which may include a reallocation of time away from labor market activities. Thus, the engagement of women in the labor market would be limited.

With regards to women attaining top managerial positions, a number of factors come into play as elucidated by the career management literature. As one enters into a career, several decisions have to be made along the way. These series of decisions are typically based on a comparison of costs and benefits each step of the way (Keane and Wolpin 1997). Such calculations may be gender-specific, thereby distorting incentives between men and women. Most research on the determinants of women managers are based on such a comparison of costs and benefits as the career progresses (Mincer, 1962; Becker, 1965; Jaumotte, 2003; Morrison, et al., 2007). The existence of gender-specific discriminatory laws can alter this calculation substantially. Laws that discourage or hamper the ability of women to work would increase the opportunity costs for women, potentially discouraging them from attempts to attain managerial or ownership positions in a firm.

Apart from legal gender disparities, there are several other factors that have been identified to be related to women's labor force participation. Global integration, proxied by exports and foreign ownership of firms, and aggregate demand (proxied by GDP per capital growth) have been found to affect female employment (Elson, 1996; Seguino, 2000). Better educated women have been found to increase the likelihood of female top managers (Amin and Islam, 2016). Some business sectors are friendlier towards women while others are less so (Islam and Amin 2014; Juhn et al., 2014). Infrastructure improvements have also been found to be positively correlated with women's participation in the labor market given it reallocates their time away from household activities to the labor market (Wamboye and Seguino, 2015). Finally, culture has been found to be correlated

with women's participation in the labor market (Fernandez et al. 2004; Fernandez, 2007; Farre' and Vella, 2013; Fernandez and Fogli, 2009).

Regarding firm specific characteristics, age of the firm and access to finance may matter. Older firms may be resistant to change and thus reluctant to hire women workers or top women managers (Blum et al., 1994). In some firms, informal networks tend to be dominated by males, and thus the presence of formal training may be crucial for women to move up the career ladder (Rowley 2013). Crime has also been found to be correlated with women's employment in management positions (Islam, 2013). In our empirical estimations, we try our best to account for all of these factors given the constraints of data limitations.

3. Data and Empirical Strategy

Our main data sources are the World Bank Group's Enterprise Surveys (ES) and the World Bank Group's Women, Business and Law (WBL) databases. The ES offer an expansive array of cross-country comparable firm-level data on firm's experience of the business environment and on firm's performance and characteristics, including gender composition of the workforce, gender composition of the ownership, and gender of the top manager. The sample of ES firms used in the paper consists over 60,000 firms across 104 mostly developing countries. ES were conducted in various countries between 2006 and 2016 using a common questionnaire and sampling methodology (stratified random sample), and are representative of the non-agricultural and non-mining formal (registered) private sector of the economies¹. The WBL database measures legal institutions that discriminate on the basis of gender across the world. WBL data are collected through several rounds of interactions with practitioners with expertise in the different areas

¹ More information about the ES methodology and country coverage is available on the Enterprise Surveys website <http://www.enterprisesurveys.org>. Note that each firm has only one observation in the sample.

covered by the database. Inputs collected from practitioners are verified against codified sources of national law and, then, coded by the WBL team.

Exploiting firm-level heterogeneity in female employment data and country-level law data, we estimate the following equation for firm i in country j and sector r :

$$\begin{aligned}
 WomEmp_{ijr} = & \beta_1 Legal_j + \beta_2 Edu_j + \beta_3 Size_{ijr} + \beta_4 Age_{ijr} + \beta_5 train_{ijr} + \beta_6 multi_{ijr} \\
 & + \beta_7 exper_{ijr} + \beta_8 export_{ijr} + \beta_9 foreign_{ijr} + \beta_{10} finance_{ijr} + \beta_{11} crime_{ijr} \\
 & + \beta_{12} fempop_j + \beta_{13} GDPcap_j + \beta_{14} GDPgr_j + \gamma sector_r + a region_c \\
 & + \tau year_t + \epsilon_{ijr} \quad (1)
 \end{aligned}$$

We use five measures for women's participation in the labor market ($WomEmp$) obtained from the Enterprise Surveys. These include: whether the firm has a female top manager, whether the firm has a female owner, whether the majority of the firm's owners are female, percentage of female employees over total employees, and the log of the absolute total number of female employees. The employee measures capture general female participation while the female management and ownership variables capture empowerment. The measure of whether or not there is at least one woman present in the ownership structure of the firm may seem redundant given that we have a measure of whether the majority of the owners are female, however the latter was recently included in the Enterprise Surveys and thus the former has a larger number of observations (almost 20,000 more firms). Summary statistics are presented in table 1 while variable descriptions can be found in table A1.

Our main explanatory variable ($Legal$) is the Legal Gender Disparities measure based on the WBL database and constructed by Iqbal et al., (2016). The Legal Gender Disparities is constructed as follows. Fifty-one gender disparities in laws are considered. If a law treats men and women

differently (a legal gender disparity) then a score is assigned. If the disparity applies to only married women, a score of 1 is assigned. If it applies to both married and unmarried women, a score of 2 is assigned. If the law treats both men and women the same, then a score of 0 is assigned. The summation over all the scores provides the Legal Gender Disparities score. Table A2 provides a listing of the legal gender disparities and the corresponding score assignment.² There is substantial variation of the Legal Gender Disparities measure in our sample. The mean value is 18, with a minimum of 2 and a maximum of 41. The Republic of Yemen has the highest number of legal gender disparities and the Slovak Republic has the lowest in our sample.

Since the dependent variables vary at the firm level and the Legal Gender Disparity measure varies at the country level, a reverse causality problem is unlikely, although it cannot be ruled out completely (Paunov, 2016). Our main concern remains to be one of omitted variable bias. To account for omitted variable bias problem, we employ a large number of control variables as shown in equation (1). A formal definition of the control variables used along with the data source is provided in Table A1. Education (*Edu*) is measured at the country-level and is the female-to-male ratio of the mean number of years of education. Several firm-level characteristics are accounted for including firm size (*Size*), firm age (*Age*), whether the firm is part of a larger firm (*multi*), whether the firm offers formal training (*train*), experience of the top manager (*exper*), exporter status (*export*), foreign ownership (*foreign*), access to finance (*finance*), and crime (*crime*). Two variables are used to capture access to finance – whether the firm has a checking or savings account and whether the firm has a line of credit or loan. Demographic effects that may influence the supply of women’s labor are captured by the percentage of women in total adult population (*fempop*). Following Wamboye and Seguíno (2015), we control for the current state of labor

² Further details can be found in Iqbal et al., (2016).

markets by capturing aggregate demand through the growth rate of GDP per capita (*GDPgr*). Finally, we also account for the level of development (*GDPcap*). We also worry about industry-specific factors, global economic shocks, and region (continent) specific factors. We account for these using sector fixed effects at the 2-digit ISIC level, year fixed effects, and region fixed effects. Summary statistics can be found in table 1, with data descriptions and sources provided in table A1.

4. Base Regression Results

Table 2 presents the main results. The estimated coefficient value of the legal gender disparity score is negative and statistically significant at the 1 percent level across all 5 labor market outcome measures for women. A unit increase in the legal gender disparity score is associated with a 0.3 percent decrease in the likelihood of a female top manager, 0.5 percent decrease in the likelihood of the presence of a female owner, and a 0.4 percent decrease in the likelihood that the majority of the owners for the firm are women. Alternatively, if a country such as the Republic of Yemen, which performs the poorest on legal gender disparities (has most disparities), were to emulate the Slovak Republic, which is the best performer, the associated increase in the likelihood of a firm having a female top manager would be 13.12 percentage points, the increase in the likelihood of a firm having a female owner would be 18.8 percentage points, and the increase in the likelihood of a firm having women majority owners would be 15.7 percentage points. These are considerable results given that only 17.3% of the firms in the sample have a female top manager, 34% of the firms have at least one female owner, and only 12% of the firms are majority female-owned. Similarly, a unit increase in the legal gender disparities score is associated with lower levels of female employment, relative to total employment and in absolute terms. The former is lower by

0.4 percentage point or about 1.2 percent of its mean value while the latter is lower by 1.6 percent of its mean value.

Several of the covariates have coefficients with the expected signs and significance. Female-to-male education has a positive effect on the labor market outcomes for women across all five measures, statistically significant at the 1% level and at the 5% level in one case. This is consistent with findings in the literature (Amin and Islam, 2016). Similarly, the proportion of women in total population has a positive and statistically significant effect at the 1% level for all five measures of labor market outcomes for women. By and large formal training has a positive effect on women's labor market outcomes. In a majority of specifications in table 2, age of the firm is positively correlated with the presence of female managers and owners. Size of the firm is negatively correlated with all five labor market outcomes for women. Exporter status is positively correlated and the coefficient is statistically significant only for female ownership. The link between female ownership and the access to finance variables is positive with the coefficients statistically significant at least at the 5% level.

These initial findings indicate that laws that discriminate against women not only negatively affect women's employment, they also reduce the presence of women in empowering positions – management and ownership of firms. The consistency of the effects across a wide spectrum of labor market outcomes for women indicates these are powerful results, and legal gender disparities have a multifaceted effect on women's lives. In the next section, we check the robustness of our findings to a number changes in the specifications and sample alterations.

5. Robustness

We test if our findings are robust to the inclusion of additional variables. A large number of covariates can create a number of problems, including multicollinearity and reduce sample size due to missing data. Thus, as a robustness check we consider adding sets of variables that have been highlighted in the literature as important correlates of labor market outcomes.

In table 3, we include four variables in the specification - agriculture value added (% of GDP), manufacturing value added (% of GDP), improved sanitation facilities (% of population with access), and total fertility rate (births per woman). The burden of care provision on women can influence their labor supply and we account for this using the proportion of population that has access to sanitation. Structural factors affecting job availability for women vs. men are proxied by the share of agriculture and manufacturing in total value added. Furthermore, fertility rates could alter the time allocation of women away from formal labor markets. As indicated in table 3, the sign and significance of the coefficient of the legal gender disparities score are largely retained as in the base specifications in table 2 after inclusion of these additional variables. The only difference is that the coefficient for legal gender disparities is statistically significant at the 5% level instead of the 1% level. In table 4, we conduct a similar exercise by including variables that capture the percentage of adherents to various religions as a way to account for culture. The sign and significance of the coefficient for legal gender disparities is largely similar to the base specification in table 2 across all women labor market outcome variables, with the one small difference being a drop in the statistical significance of the coefficient for legal gender disparities from the 1% level to the 5% level for female ownership.

One issue with our results is that we may not be capturing the degree of control women exert on a firm. For instance, the gender of the top manager may not adequately reflect the gender composition of the whole management team (top manager plus lower level managers). Similarly,

data for the percentage of female ownership in firms are only available for a subset of the sample. Thus, for many firms we are unable to make statements on the extent of women's ownership of a firm (percentage of firm owned by women) that is affected by unequal laws. We partially address these issues by limiting our sample to sole proprietorship firms. Typically, these firms are small and run a by single (top) manager with no or a limited number of lower level managers. Ownership structure is clear and simple with either a woman or a man owning 100% of the firm. Thus, we can expect that sole proprietorships with women owners or managers are more likely to face the burden of gender-related unequal laws. On the other hand, due to their small size, sole proprietorship firms may be able to slip under the radar and avoid being subjected to gender-related laws.

In table 5, we present the findings when we restrict the sample to sole proprietorships alone. We find that just as in base estimations in table 2, the sign and significance of the coefficient for the legal gender disparities score are retained, with a slight increase in magnitudes of the coefficient of legal gender disparities for some of the outcome variables when compared to the base specification.³

Finally, following Sekkat et al. (2015), we investigate if we can uncover a significant relationship between female owners and managers, and if this relationship has any effect on the coefficient of the legal gender disparities score. Therefore, in table 6, we consider the specification in table 2 for female managers as the dependent variable but also controlling for the presence of a female owner (column 1, table 6) and whether or not the majority of the firm is female-owned (column 2, table

³ We repeated the same exercise for the sample of firms with legal status other than sole proprietorship. The negative and statistically significant coefficient for the legal gender disparities score is retained. These results are available from the authors upon request.

6). We do find a positive and highly statistically significant relationship between female ownership and management, confirming the findings of Sekkat et al. (2015). Regardless, the coefficients for the legal gender disparities score are unaffected – a negative coefficient is retained with a statistical significance of 5 percent or higher.

6. Pathways

Thus far the study has uncovered a robust relationship between legal gender disparities and a wide range of labor market outcomes for women. This leads to the question of what channels might convey these effects. While we cannot account for all possible pathways given data limitations, we at least find suggestive evidence of two potential pathways between female management and ownership and legal gender disparities. To uncover the pathways, we limit our sample to only firms that are both owned and managed by women. We then include an array of indicators as the dependent variable and check whether they are correlated with the legal gender disparity score.

Table 7 contains the findings. It shows that a higher legal gender disparities score is associated with poorer access to finance, and higher corruption faced by women-owned and managed businesses. More specifically, the greater the legal gender disparity score, the greater the likelihood that women-owned and managed firms resort to internal sources of funding than external sources of funding; the lower the likelihood of the firms having an overdraft facility. Furthermore, the chances of women-owned and managed firms expected to give gifts or make informal payments to obtain an operating license are much higher in economies with higher legal gender disparities.

Thus, women-owned and managed firms face greater difficulty in obtaining finance and face higher corruption with increases in legal gender disparities. The finding is consistent with other

studies in the related literature, which that find that women entrepreneurs experience harsher business environment in terms of access to finance and interference and harassment by government officials (Ellis, et al., 2006; Muravyev et al., 2009).

7. Conclusion

By exploiting two unique data sets, this study has uncovered a consistent and systematic negative relationship between gender-specific discriminatory laws, termed as legal gender disparities, and a wide range of labor market outcomes for women. More importantly, some of these outcomes, such as top managerial positions and firm ownership, are good proxies for women's empowerment. The findings are robust to a number of specifications and sample alterations. The study also identified two potential pathways by which legal gender disparities discourage the participation of women in economic spheres. Legal gender disparities end up restricting the access to finance and increase bribery requests faced by women-owned and managed firms. A number of policy implications can be garnered from these findings, with some caution required as further investigation may be merited. First and foremost, policy makers can abolish discriminatory laws to reduce the economic losses created by restrictions placed on women. Second, the policy makers can address the pathways by which discriminatory laws affect women. Increasing financial inclusion, and encouraging good governance are two important policy recommendations.

While this study adopted a holistic approach to capture the relationship between discriminatory laws and labor market outcomes for women, a huge research agenda is needed to uncover the effects of specific laws and the pathways by which they encumber women. The literature has overwhelmingly explored certain laws while ignoring others. We hope this study will ignite further research in the more overlooked laws.

References

- Abu-Ghaida, Dina and Stephan Klasen. 2004. "The Costs of Missing the Millennium Development Goal on Gender Equity." *World Development* 32(7):1075-1107
- Amin, Mohammad and Asif Islam. 2015. "Does Mandating Nondiscrimination in Hiring Practices Influence Women's Employment? Evidence Using Firm-level Data." *Feminist Economics* 21(4): 28-60
- Amin, Mohammad and Asif Islam. 2016. "Women Managers and the Gender-Based Gap in Access to Education: Evidence from Firm-Level Data in Developing Countries." *Feminist Economics* 22(3): 127-15
- Amin, Mohammad, Asif Islam and Alena Sakhonchik. 2016b. "Does paternity leave matter for female employment in developing economies? Evidence from firm-level data." *Applied Economics Letters* 23(16): 1145-1148
- Austen, Siobhan and Astghik Mavisakalyn. 2016. "Constitutions and the Political Agency of Women: A Cross-Country Study." *Feminist Economics* 22(1): 183-210
- Balioune-Lutz, Mina and Mark McGillivray. 2015. "The Impact of Gender Inequality in Education on Income in Africa and the Middle East." *Economic Modelling* 47(2015):1-11
- Bandara, Amarakoon. 2015. "The Economic Cost of Gender Gaps in Effective Labor: Africa's Missing Growth Reserve" *Feminist Economics* 21(2): 162-186
- Bassanini, Andrea and Romain Duval. 2006. "Employment Patterns in OECD Countries: Reassessing the Role of Policies and Institutions." OECD Social, Employment and Migration Working Paper 35, Organisation for Economic Co-operation and Development
- Baum, Charles L., II. 2003. "The Effects of Maternity Leave Legislation on Mothers' Labor Supply after Childbirth." *Southern Economic Journal* 69(4): 772-99
- Becker, Gary. 1965. "A Theory of the Allocation of Time." *Economic Journal* 75(299): 493-517
- Becker, Gary S. 1981. *A Treatise on the Family*, Cambridge: Harvard University Press, 1993; Enlarged edition, 1981
- Berger, Lawrence M. and Jane Waldfogel. 2004. "Maternity Leave and the Employment of New Mothers in the United States." *Journal of Population Economics* 17(2): 331-49
- Blum, Terry C., Dail L. Fields, and Jodi S. Goodman. 1994. "Organizational-Level Determinants of Women in Management." *The Academy of Management Journal* 37(2): 241-68
- Branisa, Boris, Stephan Klasen, and Maria Ziegler. 2013. "Gender Inequality in Social Institutions and Gendered Development Outcomes." *World Development* 45:252-68

- Cuberes, David, and Marc Teignier. 2014. "Aggregate Costs of Gender Gaps in the Labor Market: A Quantitative Estimate." UB Economics Working Paper 2014/308
- Dollar, David and Roberta Gatti. 1999. "Gender Inequality, Income, and Growth: Are Good Times Good for Women?" Working Paper 20771, World Bank
- Eberts, Randall W. and Joe A. Stone. 1985. "Male–Female Differences in Promotions: EEO in Public Education." *Journal of Human Resources* 20(4): 504–21
- Ellis, Amanda, Claire Manuel, and Mark Blackden. 2006. "Gender and Economic Growth in Uganda: Unleashing the Power of Women." Report 34516, World Bank
- Elson, Diane. 1996. "Appraising Recent Developments in the World Market for Nimble Fingers." In *Confronting State, Capital and Patriarchy: Women Organizing in the Process of Industrialization*, edited by Amrita Chhachhi and Renée Pittin, 35–55. New York: St. Martin's Press.
- Gaddis, Isis and Stephan Klasen. 2014. "Economic Development, Structural Change, and Women's Labor Force Participation: A Reexamination of the Feminization U Hypothesis." *Journal of Population Economics* 27(3): 639–81
- Goldin, Claudia. 1995. "The U-Shaped Female Labor Force Function in Economic Development and Economic History." In: Schultz TP *Investment in Women's Human Capital and Economic Development*. University of Chicago Press; 1995. pp. 61-90
- Gonzales, Christian, Sonali Jain-Chandra, Kalpana Kochhar, and Monique Newiak. 2015. "Fair Play: More Equal Laws Boost Female Labor Force Participation" *IMF Staff Discussion Note* SDN/15/02
- Iqbal, Sarah, Asif Islam, Rita Ramalho and Alena Sakhonchik. 2016. "Unequal before the law: Measuring legal gender disparities across the world." Policy Research Working Paper 7622. World Bank
- Islam, Asif and Mohammad Amin. 2014. "Are There More Female Managers in the Retail Sector? Evidence From Survey Data in Developing Countries." *Journal of Applied Economics*, XVII (2): 213-228
- Islam, Asif. 2013. "Is There a Gender Bias in Crime Against Firms for Developing Economies?" 2013. *Women's Studies International Forum* 37 (2013): 1–15
- Farre' Lidia and Francis Vella, 2013. "The Intergenerational Transmission of Gender Role Attitudes and its Implications for Female Labour Force Participation," *Economica*, London School of Economics and Political Science, vol. 80(318), pages 219-247, 04.
- Fernandez, R., Alessandra Fogli, and Claudia Olivetti. 2004. "Mothers and Sons Formation and Female Labor Force Dynamics." *Quarterly Journal of Economics*, Vo. 119, No. 4, 1249-1299.
- Fernandez, R. 2007. "Women, Work, and Culture." *Journal of European Economic Association*, 5(2-3), 305-332.

- Fernandez Raquel & Alessandra Fogli, 2009. "Culture: An Empirical Investigation of Beliefs, Work, and Fertility," *American Economic Journal: Macroeconomics*, American Economic Association, vol. 1(1), pages 146-77, January.
- Jaumotte, Florence. 2003. "Labor Force Participation of Women. Empirical Evidence on the Role of Policy and Other Determinants in OECD Countries." OECD Economic Study No. 37, Paris
- Juhn, Chinhui, Gergely Ujhelyi, and Carolina Villegas-Sanchez. 2014. "Men, Women, and Machines: How Trade Impacts Gender Inequality." *Journal of Development Economics* 106: 179–93
- Keane, Michael and Kenneth Wolpin. 1997. "The Career Decisions of Young Men." *Journal of Political Economy* 105(3): 473–522
- Klasen, Stephan and Francesca Lamanna..2009. "The Impact of Gender Inequality in Education and Employment on Economic Growth in Developing Countries: New Evidence for a Panel of Countries." *Feminist Economics* 15(3): 91–132
- Klasen, Stephan, 2002. "Low Schooling for Girls, Slower Growth for All? Cross-Country Evidence on the Effect of Gender Inequality in Education on Economic Development." *World Bank Economic Review* 16(3): 345–73
- Knowles, Stephen, Paula K. Lorgelly, and P. Dorian Owen. 2002. "Are Educational Gender Gaps a Brake on Economic Development? Some Cross-Country Empirical Evidence." *Oxford Economic Papers* 54(1): 118–49
- Lagerlof, Nils-Petter. 2003. "Gender Equality and Long-Run Growth" *Journal of Economic Growth* 8:403-426
- Leonard, Jonathan S. 1985. "The Effectiveness of Equal Employment Law and Affirmative Action Regulation." NBER Working Paper 1745, National Bureau of Economic Research
- Maoz, Zeev and Errol A. Henderson. 2013. The World Religion Dataset, 1945-2010: Logic, Estimates, and Trends. *International Interactions*, 39(3)
- McElroy, Majorie B. 1990. "The empirical content of Nash-bargained household behavior." *Journal of Human Resources*, 25, 559–583
- Mincer, Jacob. 1962. *Labour Force Participation of Married Women: A Study of Labour Supply*. National Bureau of Economic Research. Princeton, NJ: Princeton University Press
- Morrison, Andrew, Dhushyanth Raju, and Nishtha Sinha. 2007. "Gender Equality, Poverty and Economic Growth." Working Paper 4349, World Bank
- Muravyev, Alexander, Oleksandr Talavera, and Dorothea Schäfer. 2009. "Entrepreneurs' Gender and Financial Constraints: Evidence from International Data." *Journal of Comparative Economics* 37(2): 270–86

- Neumark, David and Wendy A. Stock. 2001. "The Effects of Race and Sex Discrimination Laws." Working Paper 8215, National Bureau of Economic Research.
- North, Douglass C. 1990. *Institutions, Institutional Change, and Economic Performance*. New York: Cambridge University Press.
- Paunov, Caroline. 2016. "Corruption's Asymmetric Impacts on Firm Innovation." *Journal of Development Economics* 118:216-231.
- Powell, Lisa M. 1998. "Part-Time versus Full-Time Work and Child Care Costs: Evidence for Married Mothers." *Applied Economics* 30(4): 503–11
- Rowley, Chris. 2013. "What Might Influence Female Manager Careers Success?" Working Paper, Cass Business School, City University London.
- Ruhm, Christopher. 1998. "The Economic Consequences of Parental Leave Mandates: Lessons from Europe." *Quarterly Journal of Economics* 113(1): 285–317
- Seguino, Stephanie. 2000. "Accounting for Gender in Asian Economic Growth." *Feminist Economics* 6(3): 27–58
- Sekkat, Khalid, Ariane Szafarz, Ilan Tojerow. 2015. "Women at the Top in Developing Countries: Evidence from Firm-Level Data" IZA Discussion Paper No. 9537
- Sen, Amartya. 1990. "Gender and Cooperative Conflicts." In *Persistent Inequalities: Women and World Development*, edited by Irene Tinker, 123–149. New York: Oxford University Press
- Thomas, Duncan. 1997. Incomes, expenditures and health outcomes: Evidence on intrahousehold resource allocation. In Lawrence James Haddad, John Hoddinott, & Harold Alderman (Eds.), *Intra-household resource allocation in developing countries: Models, methods and policy*. Baltimore, MD: The Johns Hopkins Press.
- Wamboye, Evelyn F. and Stephanie Seguino, 2015. "Gender Effects of Trade Openness in Sub-Saharan Africa." *Feminist Economics*, 21:3, 82-113
- Weichselbaumer, Doris and Rudolf Winter-Ebmer. 2007. "The Effects of Competition and Equal Treatment Laws on the Gender Wage Differential." *Economic Policy* 22(4):235–87
- World Bank. 2011. *World Development Report 2012: Gender Equality and Development*. Washington, DC: World Bank.

Table 1: Summary Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Female Top Manager Y/N	62,135	0.17	0.38	0.00	1.00
Female Owner Present Y/N	61,357	0.34	0.47	0.00	1.00
Female Owner Majority Y/N	41,043	0.12	0.32	0.00	1.00
Percent of Female Workers, Full Time	57,456	32.93	27.73	0.00	100.00
Log of Total Female Workers, Full Time	57,992	1.59	1.17	0.00	9.28
Legal gender disparities	62,135	18.18	7.15	2.00	41.00
Years of education (mean), female over male ages 25 plus	62,135	0.78	0.22	0.18	1.09
Log of age of firm	62,135	2.52	0.77	0.00	5.27
Log of size	62,135	2.82	1.11	-0.41	12.05
Firm is part of a larger firm Y/N	62,135	0.18	0.38	0.00	1.00
Firm offers formal training Y/N	62,135	0.35	0.48	0.00	1.00
Top manager experience in sector (years)	62,135	17.31	10.78	0.00	60.00
Direct exports 10% or more of sales Y/N	62,135	0.11	0.32	0.00	1.00
Foreign ownership Y/N	62,135	0.10	0.30	0.00	1.00
Establishment has checking or savings account Y/N	62,135	0.87	0.34	0.00	1.00
Establishment has a line of credit or loan Y/N	62,135	0.36	0.48	0.00	1.00
Firm experienced losses due to crime Y/N	62,135	0.19	0.39	0.00	1.00
Population, female (% of total)	62,135	50.21	1.54	48.16	54.22
GDP per capita (constant 2010 US\$)	62,135	8.12	1.00	5.40	10.39
GDP per capita growth (annual %)	62,135	3.60	2.94	-8.14	11.60
Agriculture, value added (% of GDP)	59,658	13.26	8.92	0.54	57.32
Manufacturing, value added (% of GDP)	58,460	15.07	5.48	2.21	30.66
Improved sanitation facilities (% of population with access)	61,672	66.49	25.78	6.70	100.00
Fertility rate, total (births per woman)	57,342	2.76	1.27	1.26	6.42
Roman Catholics (%)	60,938	0.22	0.31	0.00	0.97
Protestants (%)	60,938	0.08	0.11	0.00	0.68
Islam (%)	60,938	0.27	0.35	0.00	1.00
Judaism (%)	60,938	0.01	0.06	0.00	0.73
Internal financing to finance day-to-day operations Y/N	60,783	0.93	0.25	0.00	1.00
Firm has overdraft facility Y/N	59,916	0.41	0.49	0.00	1.00
Firms expected to give gifts/informal payment get an Operating License Y/N	13,041	0.14	0.35	0.00	1.00

Table 2: Legal Gender Disparities and Women Labor Market Outcomes - Base Estimations

Marginal Effects for Probit Estimations	Female Top Manager Y/N	Female Owner Present Y/N	Female Owner Majority Y/N	Percent of Female Workers, Full Time	Log of Total Female Workers, Full Time
	Probit	Probit	Probit	OLS	OLS
	coef/se	coef/se	coef/se	coef/se	coef/se
	(1)	(2)	(3)	(4)	(5)
Legal gender disparities	-0.003*** (0.001)	-0.005*** (0.001)	-0.004*** (0.001)	-0.398*** (0.047)	-0.016*** (0.001)
Years of education (mean), female over male ages 25 plus	0.147*** (0.039)	0.221*** (0.042)	0.086** (0.036)	13.447*** (2.195)	0.400*** (0.065)
Log of age of firm	0.017*** (0.006)	0.028*** (0.007)	-0.000 (0.005)	0.352 (0.364)	0.028*** (0.011)
Log of size	-0.032*** (0.004)	-0.008* (0.005)	-0.023*** (0.004)	-0.546** (0.252)	0.744*** (0.008)
Firm is part of a larger firm Y/N	0.013 (0.011)	0.020 (0.014)	-0.009 (0.012)	2.099*** (0.795)	0.112*** (0.022)
Firm offers formal training Y/N	0.020** (0.009)	0.047*** (0.011)	0.001 (0.008)	1.628*** (0.557)	0.075*** (0.016)
Top manager experience in sector (years)	-0.003*** (0.000)	0.001** (0.001)	-0.001 (0.000)	-0.055** (0.026)	-0.003*** (0.001)
Direct exports 10% or more of sales Y/N	-0.009 (0.013)	0.047*** (0.016)	0.011 (0.013)	-0.708 (0.830)	0.022 (0.024)
Foreign ownership Y/N	-0.019 (0.014)	-0.025 (0.017)	-0.069*** (0.014)	1.933** (0.833)	0.093*** (0.025)
Establishment has checking or savings account Y/N	0.014 (0.012)	0.055*** (0.015)	0.012 (0.010)	1.983** (0.806)	0.064*** (0.022)
Establishment has a line of credit or loan Y/N	0.001 (0.009)	0.024** (0.011)	-0.014 (0.008)	0.332 (0.569)	0.028* (0.016)
Firm experienced losses due to crime Y/N	0.023** (0.010)	0.040*** (0.013)	0.018* (0.010)	0.478 (0.667)	-0.000 (0.019)
Population, female (% of total)	0.018*** (0.005)	0.019*** (0.005)	0.020*** (0.004)	1.416*** (0.288)	0.054*** (0.008)
GDP per capita (constant 2010 US\$)	-0.025*** (0.007)	-0.048*** (0.008)	-0.027*** (0.007)	-0.648 (0.412)	-0.020* (0.011)
GDP per capita growth (annual %)	-0.002* (0.001)	-0.004** (0.002)	-0.001 (0.002)	-0.353*** (0.093)	-0.009*** (0.003)
Sector (ISIC 2 digit) Fixed Effects	YES	YES	YES	YES	YES
Year Fixed Effects	YES	YES	YES	YES	YES
Region (Continent) Fixed Effects	YES	YES	YES	YES	YES
Number of observations	61,763	62,352	40,997	58,453	58,977

note: *** p<0.01, ** p<0.05, * p<0.1

Table 3: Robustness – Additional Controls

Marginal Effects for Probit Estimations	Female Top Manager Y/N	Female Owner Present Y/N	Female Owner Majority Y/N	Percent of Female Workers, Full Time	Log of Total Female Workers, Full Time
	Probit	Probit	Probit	OLS	OLS
	coef/se	coef/se	coef/se	coef/se	coef/se
	(1)	(2)	(3)	(4)	(5)
Legal gender disparities	-0.003*** (0.001)	-0.002** (0.001)	-0.002** (0.001)	-0.326*** (0.056)	-0.012*** (0.002)
Years of education (mean), female over male ages 25 plus	0.154*** (0.056)	0.137** (0.060)	0.172*** (0.054)	18.301*** (2.929)	0.466*** (0.084)
Log of age of firm	0.014** (0.007)	0.031*** (0.008)	-0.002 (0.006)	0.372 (0.398)	0.034*** (0.012)
Log of size	-0.033*** (0.004)	-0.011** (0.005)	-0.022*** (0.004)	-0.332 (0.272)	0.755*** (0.009)
Firm is part of a larger firm Y/N	0.013 (0.013)	0.003 (0.016)	-0.013 (0.013)	2.071** (0.851)	0.098*** (0.023)
Firm offers formal training Y/N	0.023** (0.010)	0.049*** (0.012)	0.012 (0.009)	1.436** (0.597)	0.066*** (0.017)
Top manager experience in sector (years)	-0.003*** (0.000)	0.001* (0.001)	-0.001 (0.000)	-0.048* (0.029)	-0.003*** (0.001)
Direct exports 10% or more of sales Y/N	-0.009 (0.015)	0.043** (0.018)	0.001 (0.013)	-1.024 (0.860)	0.023 (0.025)
Foreign ownership Y/N	-0.017 (0.016)	-0.015 (0.019)	-0.060*** (0.016)	2.171** (0.915)	0.085*** (0.027)
Establishment has checking or savings account Y/N	0.013 (0.013)	0.033* (0.017)	0.009 (0.011)	2.060** (0.873)	0.046** (0.023)
Establishment has a line of credit or loan Y/N	0.003 (0.010)	0.017 (0.012)	-0.007 (0.009)	-0.142 (0.604)	0.015 (0.016)
Firm experienced losses due to crime Y/N	0.022* (0.011)	0.044*** (0.014)	0.019* (0.011)	0.919 (0.712)	0.012 (0.020)
Population, female (% of total)	0.019*** (0.005)	0.021*** (0.006)	0.018*** (0.004)	1.207*** (0.298)	0.042*** (0.008)
GDP per capita (constant 2010 US\$)	-0.027** (0.011)	-0.052*** (0.014)	-0.015 (0.011)	-0.704 (0.743)	-0.049** (0.020)
GDP per capita growth (annual %)	-0.001 (0.002)	0.001 (0.002)	0.002 (0.002)	-0.330*** (0.109)	-0.009*** (0.003)
Agriculture, value added (% of GDP)	-0.001 (0.001)	-0.000 (0.001)	-0.001 (0.001)	-0.006 (0.064)	-0.001 (0.002)
Manufacturing, value added (% of GDP)	-0.000	0.003**	-0.000	-0.042	-0.003*

	(0.001)	(0.001)	(0.001)	(0.056)	(0.001)
Improved sanitation facilities (% of population with access)	-0.001**	-0.000	-0.000	-0.142***	-0.004***
	(0.000)	(0.001)	(0.001)	(0.025)	(0.001)
Fertility rate, total (births per woman)	-0.004	-0.046***	0.000	-0.805	-0.073***
	(0.009)	(0.012)	(0.009)	(0.560)	(0.016)
Sector (ISIC 2 digit) Fixed Effects	YES	YES	YES	YES	YES
Year Fixed Effects	YES	YES	YES	YES	YES
Region (Continent) Fixed Effects	YES	YES	YES	YES	YES
Number of observations	53,053	53,736	33,346	51,543	51,943

note: *** p<0.01, ** p<0.05, * p<0.1

Table 4: Robustness – Religion

Marginal Effects for Probit Estimations	Female Top Manager Y/N	Female Owner Present Y/N	Female Owner Majority Y/N	Percent of Female Workers, Full Time	Log of Total Female Workers, Full Time
	Probit	Probit	Probit	OLS	OLS
	coef/se	coef/se	coef/se	coef/se	coef/se
	(1)	(2)	(3)	(4)	(5)
Legal gender disparities	-0.002*** (0.001)	-0.002** (0.001)	-0.002*** (0.001)	-0.408*** (0.051)	-0.016*** (0.001)
Years of education (mean), female over male ages 25 plus	0.132*** (0.043)	0.248*** (0.047)	0.083* (0.043)	11.488*** (2.514)	0.344*** (0.074)
Log of age of firm	0.016** (0.006)	0.027*** (0.008)	-0.001 (0.006)	0.132 (0.382)	0.025** (0.011)
Log of size	-0.032*** (0.004)	-0.007 (0.005)	-0.022*** (0.004)	-0.571** (0.256)	0.744*** (0.008)
Firm is part of a larger firm Y/N	0.014 (0.012)	0.019 (0.014)	-0.012 (0.012)	2.398*** (0.810)	0.121*** (0.022)
Firm offers formal training Y/N	0.023** (0.009)	0.050*** (0.011)	-0.002 (0.008)	1.814*** (0.565)	0.084*** (0.016)
Top manager experience in sector (years)	-0.003*** (0.000)	0.001** (0.001)	-0.001 (0.000)	-0.058** (0.027)	-0.002*** (0.001)
Direct exports 10% or more of sales Y/N	-0.008 (0.013)	0.045*** (0.016)	0.005 (0.013)	-0.539 (0.848)	0.031 (0.024)
Foreign ownership Y/N	-0.021 (0.015)	-0.031* (0.017)	-0.072*** (0.015)	1.559* (0.883)	0.075*** (0.026)
Establishment has checking or savings account Y/N	0.011 (0.012)	0.051*** (0.015)	0.008 (0.011)	1.522* (0.837)	0.052** (0.023)
Establishment has a line of credit or loan Y/N	0.001 (0.009)	0.027** (0.011)	-0.015* (0.009)	0.240 (0.574)	0.023 (0.016)
Firm experienced losses due to crime Y/N	0.021* (0.011)	0.035*** (0.013)	0.016 (0.010)	0.575 (0.687)	0.002 (0.019)
Population, female (% of total)	0.013** (0.005)	0.009 (0.006)	0.013*** (0.005)	0.978*** (0.310)	0.034*** (0.008)
GDP per capita (constant 2010 US\$)	-0.030*** (0.007)	-0.053*** (0.008)	-0.021*** (0.007)	-1.242*** (0.436)	-0.043*** (0.012)
GDP per capita growth (annual %)	-0.004** (0.002)	-0.004** (0.002)	0.003 (0.002)	-0.576*** (0.112)	-0.015*** (0.003)
Roman Catholics	-0.017 (0.020)	0.026 (0.025)	0.038** (0.018)	-7.769*** (1.321)	-0.289*** (0.035)
Protestants	0.094**	0.280***	-0.080	-0.011	0.061

	(0.047)	(0.055)	(0.049)	(3.031)	(0.081)
Islam	-0.056**	-0.095***	-0.068***	-4.739***	-0.179***
	(0.022)	(0.026)	(0.018)	(1.336)	(0.038)
Judaism	0.076	-0.079	-0.081	8.246**	0.316***
	(0.076)	(0.077)	(0.057)	(3.294)	(0.088)
Sector (ISIC 2 digit) Fixed Effects	YES	YES	YES	YES	YES
Year Fixed Effects	YES	YES	YES	YES	YES
Region (Continent) Fixed Effects	YES	YES	YES	YES	YES
Number of observations	60,566	61,158	39,941	57,292	57,798

note: *** p<0.01, ** p<0.05, * p<0.1

Table 5: Robustness – Sole Proprietorship

Marginal Effects for Probit Estimations	Sole Proprietorships Only			
	Female Top Manager Y/N	Female Owner Present Y/N	Percent of Female Workers, Full Time	Log of Total Female Workers, Full Time
	Probit	Probit	OLS	OLS
	coef/se	coef/se	coef/se	coef/se
	(1)	(2)	(3)	(4)
Legal gender disparities	-0.003*** (0.001)	-0.006*** (0.001)	-0.404*** (0.074)	-0.016*** (0.002)
Years of education (mean), female over male ages 25 plus	0.112* (0.065)	0.145** (0.066)	11.776*** (4.096)	0.384*** (0.119)
Log of age of firm	0.032*** (0.011)	0.029** (0.011)	1.063 (0.669)	0.026 (0.019)
Log of size	-0.028*** (0.008)	-0.022** (0.009)	0.279 (0.560)	0.667*** (0.020)
Firm is part of a larger firm Y/N	0.004 (0.022)	0.037 (0.026)	1.691 (1.727)	0.164*** (0.042)
Firm offers formal training Y/N	0.023 (0.016)	0.038** (0.018)	2.890*** (1.104)	0.141*** (0.032)
Top manager experience in sector (years)	-0.003*** (0.001)	0.001 (0.001)	-0.082* (0.047)	-0.001 (0.001)
Direct exports 10% or more of sales Y/N	-0.018 (0.030)	0.078** (0.030)	1.189 (1.920)	0.078* (0.047)
Foreign ownership Y/N	0.005 (0.038)	-0.060 (0.040)	1.519 (2.087)	0.197*** (0.063)
Establishment has checking or savings account Y/N	0.012 (0.019)	0.030 (0.021)	1.983* (1.183)	0.077** (0.036)
Establishment has a line of credit or loan Y/N	0.018 (0.017)	0.017 (0.018)	2.670** (1.177)	0.057* (0.030)
Firm experienced losses due to crime Y/N	0.011 (0.019)	0.022 (0.019)	0.835 (1.381)	0.009 (0.035)
Population, female (% of total)	0.019* (0.010)	0.006 (0.011)	1.552*** (0.589)	0.082*** (0.017)
GDP per capita (constant 2010 US\$)	-0.031** (0.012)	-0.043*** (0.012)	0.257 (0.812)	0.008 (0.022)
GDP per capita growth (annual %)	-0.000 (0.002)	-0.005* (0.003)	-0.190 (0.169)	-0.001 (0.004)
Sector (ISIC 2 digit) Fixed Effects	YES	YES	YES	YES
Year Fixed Effects	YES	YES	YES	YES
Region (Continent) Fixed Effects	YES	YES	YES	YES
Number of observations	21,405	21,781	20,314	20,420

note: *** p<0.01, ** p<0.05, * p<0.1

Table 6: Women Managers and Owners

Marginal Effects	Female Top Manager Y/N	
	Probit	
	coef/se	coef/se
	(1)	(2)
Legal gender disparities	-0.002*** (0.001)	-0.002** (0.001)
Firm has a Female Owner Y/N	0.262*** (0.006)	
Firms has majority female ownership Y/N		0.319*** (0.008)
Years of education (mean), female over male ages 25 plus	0.087** (0.034)	-0.021 (0.050)
Log of age of firm	0.007 (0.006)	0.021*** (0.006)
Log of size	-0.026*** (0.003)	-0.009** (0.004)
Firm is part of a larger firm Y/N	0.009 (0.011)	0.031*** (0.011)
Firm offers formal training Y/N	0.006 (0.008)	0.020** (0.009)
Top manager experience in sector (years)	-0.003*** (0.000)	-0.002*** (0.000)
Direct exports 10% or more of sales Y/N	-0.026** (0.012)	-0.016 (0.014)
Foreign ownership Y/N	-0.007 (0.013)	0.002 (0.015)
Establishment has checking or savings account Y/N	0.000 (0.011)	-0.010 (0.012)
Establishment has a line of credit or loan Y/N	-0.005 (0.008)	0.020** (0.009)
Firm experienced losses due to crime Y/N	0.010 (0.009)	-0.001 (0.011)
Population, female (% of total)	0.012*** (0.004)	0.015*** (0.004)
GDP per capita (constant 2010 US\$)	-0.010* (0.006)	-0.018* (0.010)
GDP per capita growth (annual %)	-0.001 (0.001)	0.001 (0.002)
Sector (ISIC 2 digit) Fixed Effects	YES	YES
Year Fixed Effects	YES	YES
Region (Continent) Fixed Effects	YES	YES
Number of observations	61,119	33,169

note: *** p<0.01, ** p<0.05, * p<0.1

Table 7: Pathways Between Legal Gender Disparities and Women Labor Market Outcomes

Marginal Effects for Probit Estimations	Internal financing to finance day-to-day operations Y/N	Firm has overdraft facility Y/N	Firms expected to give gifts/informal payment get an Operating License Y/N
	Probit	Probit	Probit
	coef/se	coef/se	coef/se
	(1)	(2)	(3)
Legal gender disparities	0.005*** (0.002)	-0.010*** (0.004)	0.008** (0.004)
Years of education (mean), female over male ages 25 plus	0.119 (0.078)	-0.215 (0.141)	-0.061 (0.182)
Log of age of firm	-0.006 (0.012)	0.036 (0.024)	-0.067** (0.033)
Log of size	0.013 (0.009)	0.079*** (0.016)	0.044** (0.021)
Top manager experience in sector (years)	0.001* (0.001)	-0.001 (0.002)	0.004 (0.003)
Direct exports 10% or more of sales Y/N	-0.006 (0.025)	0.033 (0.056)	0.051 (0.057)
Foreign ownership Y/N	0.002 (0.033)	0.059 (0.060)	-0.005 (0.039)
Firm experienced losses due to crime Y/N	-0.040** (0.017)	0.034 (0.039)	0.049 (0.050)
Population, female (% of total)	-0.008 (0.009)	-0.009 (0.016)	-0.002 (0.017)
GDP per capita (constant 2010 US\$)	0.002 (0.009)	0.067*** (0.022)	-0.034 (0.047)
GDP per capita growth (annual %)	-0.002 (0.003)	0.002 (0.006)	0.002 (0.005)
Sector (ISIC 2 digit) Fixed Effects	YES	YES	YES
Year Fixed Effects	YES	YES	YES
Region (Continent) Fixed Effects	YES	YES	YES
Number of observations	6,687	6,663	1,505

note: *** p<0.01, ** p<0.05, * p<0.1

Table A1: Variable Descriptions

Variable	Description	Source
Female Top Manager Y/N	Dummy variable equal to 1 if the top manager of the firm is female, 0 if the top manager is male	World Bank Enterprise Surveys
Female Owner Present Y/N	Dummy variable equal to 1 if there is a female owner, 0 otherwise	World Bank Enterprise Surveys
Female Owner Majority Y/N	Dummy variable equal to 1 if majority or all owners are female	World Bank Enterprise Surveys
Percent of Female Workers, Full Time	Self explanatory	World Bank Enterprise Surveys
Log of Total Female Workers, Full Time	Self explanatory	World Bank Enterprise Surveys
Legal gender disparities	Measure of the legal gender disparities, which is laws that treat men and women differently. Fully listing of the disparities of the laws in table A2	Iqbal et al., 2016, Women, Business and the Law
Years of education (mean), female over male ages 25 plus	Mean number of years of education by age and sex estimated from censuses and nationally representative surveys	Institute for Health Metrics and Evaluation (IHME), 2015
Log of age of firm	Self explanatory	World Bank Enterprise Surveys
Log of size	Log of the size of the firm in terms of total full time employment	World Bank Enterprise Surveys
Firm is part of a larger firm Y/N	Dummy variable equal to 1 if the firm is part of a larger firm, 0 otherwise	World Bank Enterprise Surveys
Firm offers formal training Y/N	Dummy variable equal to 1 if the firm offers formal training, 0 otherwise	World Bank Enterprise Surveys
Top manager experience in sector (years)	Self explanatory	World Bank Enterprise Surveys
Direct exports 10% or more of sales Y/N	Self explanatory	World Bank Enterprise Surveys
Foreign ownership Y/N	Dummy variable equal to 1 if the firm has foreign owners, 0 otherwise	World Bank Enterprise Surveys
Establishment has checking or savings account Y/N	Self explanatory	World Bank Enterprise Surveys
Establishment has a line of credit or loan Y/N	Self explanatory	World Bank Enterprise Surveys
Firm experienced losses due to crime Y/N	Self explanatory	World Bank Enterprise Surveys
Population, female (% of total)	Self explanatory	World Development Indicators, World Bank
GDP per capita (constant 2010 US\$)	GDP per capita (constant 2005 US\$). Data are in constant 2005 U.S. dollars. Dollar figures for GDP are converted from domestic currencies using 2005 official exchange rates. For a few countries where the official exchange rate does not reflect the rate effectively applied to actual foreign exchange transactions, an alternative conversion factor is used.	World Development Indicators, World Bank
GDP per capita growth (annual %)	Annual percentage growth rate of GDP per capita based on constant local currency.	World Development Indicators, World Bank
Agriculture, value added (% of GDP)	Self explanatory	World Development Indicators, World Bank
Manufacturing, value added (% of GDP)	Self explanatory	World Development Indicators, World Bank
Improved sanitation facilities (% of population with access)	Self explanatory	World Development Indicators, World Bank
Fertility rate, total (births per woman)	Self explanatory	World Development Indicators, World Bank
Roman Catholics (%)	Percentage adherents to Catholicism	Maoz and Henderson, 2013. World Religion Data set, http://www.thearda.com/Archive/Files/Downloads/WRDNATL_DL2.asp

Protestants (%)	Percentage adherents to Protestantism	Maoz and Henderson, 2013. World Religion Data set, http://www.thearda.com/Archive/Files/Downloads/WRDNATL_DL2.asp
Islam (%)	Percentage adherents to Islam	Maoz and Henderson, 2013. World Religion Data set, http://www.thearda.com/Archive/Files/Downloads/WRDNATL_DL2.asp
Judaism (%)	Percentage adherents to Judaism	Maoz and Henderson, 2013. World Religion Data set, http://www.thearda.com/Archive/Files/Downloads/WRDNATL_DL2.asp
Internal financing to finance day-to-day operations Y/N	Self explanatory	World Bank Enterprise Surveys
Firm has overdraft facility Y/N	Self explanatory	World Bank Enterprise Surveys
Firm purchased fixed assets Y/N	Self explanatory	World Bank Enterprise Surveys
Firm offers formal training Y/N	Self explanatory	World Bank Enterprise Surveys
Bribery depth		World Bank Enterprise Surveys
Firms expected to give gifts/informal payment get an Operating License Y/N	Self explanatory	World Bank Enterprise Surveys

Table A2: Legal Gender Disparities

WBL Legal Gender Disparity Measure:	Score Assignment
A “no” response to questions below is considered a disparity and therefore assigned a score	
If there is a nondiscrimination clause in the constitution, does it mention gender?	2
If customary law is recognized as a valid source of law under the constitution, is it invalid if it violates constitutional provisions on nondiscrimination or equality?	2
If personal law is recognized as a valid source of law under the constitution, is it invalid if it violates constitutional provisions on nondiscrimination or equality?	2
Can an unmarried woman apply for a passport in the same way as an unmarried man?	1
Can a married woman apply for a passport in the same way as a married man?	1
Can an unmarried woman obtain a national ID card in the same way as an unmarried man?	1
Can a married woman obtain a national ID card in the same way as a married man?	1
Can an unmarried woman travel outside the country in the same way as an unmarried man?	1
Can a married woman travel outside the country in the same way as a married man?	1
Can an unmarried woman travel outside her home in the same way as an unmarried man?	1
Can a married woman travel outside her home in the same way as a married man?	1
Can an unmarried woman get a job or pursue a trade or profession in the same way as an unmarried man?	1
Can a married woman get a job or pursue a trade or profession in the same way as a married man?	1
Can an unmarried woman sign a contract in the same way as an unmarried man?	1
Can a married woman sign a contract in the same way as a married man?	1
Can an unmarried woman register a business in the same way as an unmarried man?	1
Can a married woman register a business in the same way as a married man?	1
Can an unmarried woman open a bank account in the same way as an unmarried man?	1
Can a married woman open a bank account in the same way as a married man?	1
Can an unmarried woman choose where to live in the same way as an unmarried man?	1
Can a married woman choose where to live in the same way as a married man?	1
Can an unmarried woman confer citizenship on her children in the same way as an unmarried man?	1
Can a married woman confer citizenship on her children in the same way as a married man?	1
Can an unmarried woman be head of household or head of family in the same way as an unmarried man?	1
Can a married woman be head of household or head of family in the same way as a married man?	1
Can a married woman confer citizenship to a non-national spouse in the same way as a man?	1
Are married women required by law to obey their husbands?	1
Who legally administers marital property?	1
Does the law provide for the valuation of nonmonetary contributions?	1
Do unmarried men and unmarried women have equal ownership rights to property?	1
Do married men and married women have equal ownership rights to property?	1
Do sons and daughters have equal rights to inherit assets from their parents?	2
Do female and male surviving spouses have equal rights to inherit assets?	1
Does a woman's testimony carry the same evidentiary weight in court as a man's?	2
Are there tax deductions or credits specific to men?	2
Does the law prohibit discrimination by creditors on the basis of gender in access to credit?	2
Does the law prohibit discrimination by creditors on the basis of marital status in access to credit?	1
Is there a difference in the age at which a man and a woman can retire and receive full benefits?	2
Can non-pregnant and non-nursing women work the same night hours as men?	2
Does the law mandate equal remuneration for work of equal value?	2
Does the law mandate nondiscrimination based on gender in hiring?	2
Is it prohibited for prospective employers to ask about family status?	2
Is dismissal of pregnant workers prohibited?	2
Are employers required to provide break time for nursing mothers?	2
Is there a difference in the age at which a man and a woman can retire and receive partial benefits?	2
Is there a difference in the mandatory retirement age for men and women?	2
Can non-pregnant and non-nursing women do the same jobs as men?	2
Is there a difference in the length of paid maternity and paternity leave?*	2*(M-P)/M
Is there domestic violence legislation?	2
Is there legislation that specifically addresses sexual harassment?	2
Does legislation explicitly criminalize marital rape?	1

*Where M is length of maternity leave and P is length of paternity leave
Source: Iqbal et al., 2016

Table A3: Country List

Afghanistan	Ghana	Panama
Albania	Grenada	Paraguay
Angola	Guatemala	Peru
Antigua and Barbuda	Guyana, Co-operative Republic of	Philippines
Argentina	Honduras	Poland
Armenia	Hungary	Romania
Azerbaijan	India	Russian Federation
Bahamas, The	Indonesia	Rwanda
Bangladesh	Iraq	Senegal
Barbados	Israel	Serbia
Belarus	Jamaica	Sierra Leone
Belize	Jordan	Slovak Republic
Bolivia	Kazakhstan	Slovenia
Bosnia and Herzegovina	Kenya	South Sudan
Botswana	Kyrgyz Republic	Sri Lanka
Brazil	Latvia	St. Lucia
Bulgaria	Lebanon	St. Vincent and the Grenadines
Burkina Faso	Liberia	Sudan
Burundi	Lithuania	Suriname
Chile	Macedonia, FYR	Tajikistan
China	Madagascar	Tanzania
Colombia	Malawi	Timor-Leste
Congo, Dem. Rep.	Malaysia	Trinidad and Tobago
Congo, Rep.	Mauritania	Tunisia
Costa Rica	Mexico	Turkey
Croatia	Moldova	Uganda
Czech Republic	Mongolia	Ukraine
Djibouti	Montenegro	Uruguay
Dominican Republic	Morocco	Uzbekistan
Ecuador	Myanmar	Venezuela, RB
Egypt, Arab Rep.	Namibia	Vietnam
Estonia	Nepal	West Bank and Gaza
Ethiopia	Nicaragua	Yemen, Rep.
Gabon	Nigeria	Zambia
Georgia	Pakistan	
