

# Trade, Investment, and Women Entrepreneurship

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Center for Women, Gender  
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# Trade, Investment, and Women Entrepreneurship<sup>1</sup>

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## ABSTRACT

This study examines the effects of trade and investment liberalization on women's entrepreneurship activities, particularly in developing countries. The research in the literature has demonstrated that trade and investment liberalization bring capital and knowledge transfers (Guadalupe et al., 2012; McGrattan and Prescott, 2009), which would increase the rate of new business formation in emerging markets. However, to our knowledge, no research has differentiated the impact of trade and investment liberalization on men's and women's entrepreneurship. Hence, this paper fills the gap in the literature by emphasizing women's entrepreneurship activities and by utilizing two-way fixed effects and dynamic panel data approaches with newly available datasets. Our analysis indicates that trade and investment liberalization promotes women's entrepreneurship, particularly in developing countries' manufacturing industries.

## KEYWORDS

Entrepreneurship; Trade and Investment liberalization; Gender inequality  
*JEL*: F60, F63

## I. INTRODUCTION

The number of trade agreements addressing gender issues on the world agenda has risen considerably in recent years. The first gender-related clause was introduced in the treaty establishing the European Economic Community in 1957 (Amaral and Daza Jaller, 2020), specifically Article 119, which states that "Each Member State shall during the first stage ensure and subsequently maintain the application of the principle that men and women should receive equal pay for equal work." Since then, only a small proportion of regional trade agreements (RTAs) include an explicit statement of gender-related issues. The number of RTAs with gender-related provisions has grown significantly since 2016 (Monteiro, 2018). According to the database on gender equality provisions in RTAs launched by the World Trade Organization (WTO) in 2022<sup>2</sup> over 100 RTAs include over 300 gender

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<sup>2</sup> <https://www.wto.org/english/tratope/womenandtrade/genderresponsivetradeagreementdb.htm>

provisions, which accounts for roughly a third of all RTAs currently in effect and reported to the WTO by its members.

Even though international investment treaties might not cover such gender issues directly, they can affect women's empowerment and gender equality by promoting foreign direct investment (FDI). For example, there is a large literature on the positive effect of bilateral investment treaties promoting FDI (Egger and Merlo, 2012; Berger et al., 2013; Falvey and Foster-McGregor, 2018; Frenkel and Walter, 2019). At the same time, studies have identified the relationship between foreign ventures and women entrepreneurs (Misra et al., 2014; Goel, 2018).

The research in the literature has demonstrated that trade and investment liberalizations bring capital and knowledge transfers (Guadalupe et al., 2012; McGrattan and Prescott, 2009), which would increase the rate of new business formation in emerging markets. The data have demonstrated a disparity between the percentage of female and male business owners, business directors, and sole proprietors. For example, Figure 1 illustrates that the share of female business owners in Zambia has increased from 21.16 percent in 2014 to 31.49 percent in 2020, whereas the share of male business owners has dropped from 78.84 percent to 68.51 percent. Similarly, Figure 2 demonstrates that the share of female business directors in Nigeria has increased from 32 percent in 2015 to 41.37 percent in 2020, whereas the share of male business directors has dropped from 67.99 percent to 58.63 percent. However, to our knowledge, no research has differentiated the impact of trade and investment liberalization on men's and women's entrepreneurship.

Hence, this paper fills the gap in the literature by emphasizing women's entrepreneurship activities. To do this, we utilize two-way fixed effects and dynamic panel data approaches with newly available datasets sourced from the World Bank as well as data from the Fraser Institute and the Centre d'Études Prospectives et d'Informations Internationales (CEPII).

We find that trade and investment liberalization has a significant impact in developing countries, primarily the manufacturing industries therein. These results emphasize the need for more gender provisions when designing these types of policies and agreements, particularly in these countries.

The remainder of this paper is organized as follows. In Section 2, we provide a review of the literature on trade and investment liberalization and gender inequality. Section 3 describes data, its sources, and the econometric models. The main results are presented in Section 4, and the conclusions are presented in Section 5.

## II. LITERATURE REVIEW

The role of investment development in entrepreneurship has received investigation in the literature on entrepreneurship. The literature on development economics, international business and entrepreneurship suggests that FDI has significant positive spillover effects on host economies' entrepreneurial activities (Slesman et al., 2021). Kim and Li (2014) find that FDI is positively related to business creation in 104 countries and that this effect is higher in countries with poorer institutional support, weaker political stability, and lower general human capital. Herrera-Echeverri et al. (2014) also identify a positive and significant relationship between FDI and business development, consistent with the spillover theory of entrepreneurship. FDI can promote new business formation within the same industry (horizontal spillover), as well as within related upstream and downstream industries (vertical

spillovers) (Barrios et al., 2005; Acs et al., 2009; Ayyagari and Kosov ' a, 2010). Gregory (2019) illustrates that capital controls have a negative effect on entrepreneurialism in emerging market countries but have a positive effect on entrepreneurialism in developed markets, controlling for the effects of political risk with capital controls for a group of 62 developed and developing countries. Slesman et al. (2021) provide empirical evidence that the effect of FDI on entrepreneurship depends on the host country's institutional quality.

Goel (2018) investigates FDI, entrepreneurship and gender differences among a large sample of countries. The author finds support for the crowding out effect, thus lowering domestic entrepreneurship. However, this effect is stronger for the full sample compared to the smaller female entrepreneur subsample. Goel (2018) finds that a 10 percent increase in FDI (as a percentage of GDP) reduces overall entrepreneurship by approximately 0.4 percent. Unlike Goel (2018), Wach and Wojciechowski (2016) and Nxazonke and van Wyk (2020) find a positive correlation between FDI and entrepreneurship. Wach and Wojciechowski (2016) study the impact of FDI stock on domestic entrepreneurship and find a statistically significant relationship though the impact varies across the sample countries (Czech Republic, Hungary, Poland, and Slovakia). Similarly, Nxazonke and van Wyk (2020) use a threshold vector autoregressive model to determine the effect of FDI on entrepreneurship in South Africa. Their time series analysis finds a positive short- and long-run influence of FDI on entrepreneurship, that is, a 1 percent increase in FDI increases entrepreneurship by roughly 17 percent.

Lastly, Misra et al. (2014) investigate the relationship between foreign ventures and women entrepreneurs for 36 countries in 2006. The authors find an inverted u-shaped relationship between FDI and female participation in business ownership. This relationship suggests that while net FDI inflows increase female entrepreneurship, there is a point after which FDI inflow could negatively impact female business owners.

Studies have examined the effect of trade and investment liberalization on entrepreneurship as well as gender inequality. Xu (2020) investigates the relationship between trade liberalization and the worker's decision to select into entrepreneurship. The author uses Chinese household survey data and a Bartik-type instrument for export expansion to investigate how globalization affects the choice to enter into entrepreneurship. The study shows that trade liberalization increases competition for profit, discouraging less able-educated workers from sorting into entrepreneurship. That is, richer or highly talented households optimally respond to export opportunity by investing in business ownership. Moreover, countries with more export exposure see a larger decline in the skill premium and a greater selection effect on business activity.

Juhn et al. (2014) theoretically propose that trade liberalization reduces gender inequality by increasing women's relative productivity in blue-collar occupations. They empirically discover that firms with higher export tariff reductions were more likely to hire blue-collar women and pay them higher wages. Gupta (2021) uses panel data to determine how trade liberalization in India in 1991 impacted female employment. The author finds that businesses exposed to larger import competition and output tariff reductions lower the share of female workers. More specifically, a 10-percentage point reduction in output tariffs reduces the share of female workers by 7 percent. Gupta (2021) also finds that tariff reductions had no significant impact on changing gender composition through imported inputs.

Fatema et al. (2018) examine the cointegration and causal relationship between trade openness-a proxy to trade liberalization- and the gender wage gap in emerging economies. Using a panel autoregressive distributed lag model and Granger causality tests the authors find a positive association

between trade openness and gender pay inequality. The results show that although growing trade increases gender wage inequality the gender pay gap does not lead to increased international trade in the sample countries.

According to Seguino and Grown (2006), a rise in the female share of employment has occurred in semi-industrialized economies that emphasize export manufacturing, but only in their early stages of industrialization. The research in the literature has proposed that trade and investment liberalization brings capital and knowledge transfers (Guadalupe et al., 2012; McGrattan and Prescott, 2009), which will increase the rate of new business formation in emerging markets. Yet, no study has examined how trade and investment liberalization affect women’s entrepreneurship activities. This paper fills the gap in the literature by utilizing newly available aggregate and disaggregate datasets.

### III. DATA AND EMPIRICAL STRATEGY

#### Data

Different sources of data are combined to measure entrepreneurship. The first newly updated dataset comes from the World Bank’s Entrepreneurship Database project. It measures entrepreneurship by the number of newly registered companies with limited liability from 2006 to 2020, and the new business density, which is defined as the number of newly registered corporations per 1,000 working-age persons. These datasets are collected by the World Bank’s Entrepreneurship Database project, as part of the Women Entrepreneurs Finance Initiative (We-Fi). Alternative indicators measuring women’s participation in businesses are based on the surveys of more than 171,000 firms in 149 countries. It comes from the World Bank’s Enterprise Surveys and shows gender participation disparities across the various country/industry subgroups. Different measures are utilized to capture trade and investment liberalization. Trade openness, which is the trade (exports plus imports) as the percentage of Gross Domestic Product (GDP), comes from the World Bank. Following Kneller et al. (2008), this paper captures trade and investment liberalization by utilizing the index of economic freedom from 1970 to 2019 tracked by the Fraser Institute. The index evaluates the degree of economic freedom in five main areas: 1) Government size; 2) Legal System and Property Rights Security; 3) Sound Money; 4) International Trade Freedom; 5) Regulation. The control variables, such as the ratio of secondary school registrations, log average life expectancy, and GDP per capita are from the CEPII bilateral distance database and the World Bank. Lastly, we classify countries as developed or developing based on the United Nations’ designation. Combining these datasets results in an unbalanced panel of seven years (2014 to 2020) and roughly 45 countries.

Since panel data are available for most countries, the econometric model in this study uses country-fixed effects to account for time-invariant unobserved country heterogeneity.

$$NER_{it} = \beta_1 Trade_{it} + \beta_2 Investment_{it} + \beta_3 X_{it} + \gamma_i + \eta_t + \epsilon_{it} \quad (1)$$

#### Empirical Strategy

Where  $NER_{it}$  measures women’s entrepreneurial activity.  $Trade_{it}$  measures trade openness, such as the ratio of trade to GDP.  $Investment_{it}$  measures investment openness, such as the index of economic freedom.  $X_{it}$  is a vector of country control variables,  $\gamma_i$  and  $\eta_t$  represent country and year fixed effects.

Our fixed-effects estimation addresses the concerns with omitted-variable bias, yet it does not

address dynamic panel endogeneity, which occurs when the current value of an independent variable is affected by past values of the dependent variable (Li et al., 2021). This study will also adopt the dynamic panel data (DPD) approach, proposed by Arellano and Bond (1991), for this small T (time) large N (country) panel:

$$NER_{it} = \beta_0 NER_{it-1} + \beta_1 Trade_{it} + \beta_2 Investment_{it} + \beta_3 X_{it} + \epsilon_{it} \quad (2)$$

By first differencing the equation, this estimator in equation (2) removes the country fixed effects. The lagged dependent variable and the differences in independent variables are then utilized as instrument variables. By using this generalized method of moments estimator to estimate dynamic models of panel data, the analysis could remove the individual effects and address associated omitted-variable bias. Blundell and Bond (1998) show that when the number of time periods available is small, the first differenced GMM estimator may be subject to a large downward finite-sample bias. Bond et al. (2001) outline an approach to determine whether serious finite sample biases are present, by comparing the first-differenced GMM results to alternative estimates of the autoregressive parameter. The authors suggest the autoregressive model be estimated with a pooled OLS approach, fixed estimates approach and the difference GMM. If the difference GMM is below or close to the fixed effects estimate then this suggests the former is downward biased perhaps due to weak instruments. Following this approach, our results showed that the difference GMM was in fact downward biased thus we utilize the system GMM for our analysis.

However, some limitations exist with the GMM approach. First, the estimates are usually less statistically significant than maximum likelihood estimates due to minimal distributional assumptions. Additionally, the parameter estimates are usually measured with more error. Secondly, GMM estimates have bad small sample properties and can result in large bias and inefficiency in small samples, such as the one used for this analysis.

#### IV. ANALYSIS RESULTS

As a benchmark, Table 1 presents the impact of trade and investment liberalization on the percent of firms with female participation in ownership. Column (1) depicts the results with year fixed effects and indicates that if the economic freedom index increases by 1, the proportion of firms with female ownership rises by 2.62 percentage points. The results remain economically and statistically significant when both country and year fixed effects are included in columns (2) and (3). Four major aspects are included to evaluate the economic freedom index, such as (1) personal choice, (2) voluntary exchange coordinated by markets, (3) freedom to enter and compete in markets, and (4) protection of persons and their property against aggression by others.

The economic freedom index is further separated into five categories: 1) government size; 2) legal system and property rights security; 3) sound money; 4) international trade freedom; 5) regulation.<sup>3</sup> Our variable of interest is the international trade freedom index, which measures a wide variety of restraints that affect the international exchange of goods, services, and capital, including tariffs, quotas, hidden administrative restraints, and exchange rates and capital controls. A higher international trade freedom index is associated with lower tariffs, easier clearance and more efficient administration of customs, a more freely convertible currency, and fewer restrictions on the movement of physical and human capital. Columns (4) and (5) indicate the effect of these five

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<sup>3</sup> <https://www.fraserinstitute.org/economic-freedom/approach>

indexes separately. The estimated coefficient in column (4) indicates that if the international trade freedom index increases by 1, the proportion of firms with female ownership rises by 2.4 percentage points. Government size evaluates the extent that a country relies on personal choice and markets rather than government budgets and political decision-making. A higher index of government size is related to lower government spending as a share of GDP, a smaller government enterprise sector, and lower marginal tax rates. Legal system and property rights security measures the extent of protection of persons and their rightfully acquired property. A higher index of sound money indicates that a country implements policies and institutions that result in low (and stable) inflation rates while avoiding restrictions on the use of alternative currencies. The regulatory index assesses regulatory barriers to freely trade in credit, labor, and product markets.

Developed and developing countries usually implement different degrees of trade and investment liberalization. For example, under the framework of GATT, developed countries adopt significantly greater trade liberalization (Subramanian and Wei, 2007), whereas developing countries have significantly fewer requirements to liberalize trade barriers under Special and Differentiated (S&D) status (Dutt et al., 2013). In addition, developed and developing countries have different agendas when signing bilateral investment treaties (BITs). Most developing countries use BITs to attract FDI whereas developed countries intend to protect investors abroad and lower the risk of foreign investments (Xiong, 2022). Such an asymmetry implies that the effect of trade and investment liberalization might vary between developed and developing countries. Therefore, it is essential to treat two groups of countries separately.

Table 2 separates our sample into developed and developing countries. The results columns (1)-(4) in Table 2 illustrate the effect of trade and investment liberalization in developed countries. The estimated coefficients of the economic freedom index in columns (1) and (2) are all positive and significant, indicating that the economic freedom index significantly promotes the proportion of firms with female ownership. The estimated coefficients of the international trade freedom index are still positive and significant in columns (3) and (4). The result in column (4) indicates that if the international trade freedom index increases by 1, the proportion of firms with female ownership rises by 2.6 percentage points in developing countries. On the contrary, the estimated coefficients of both the economic freedom index and international trade freedom index are all insignificant in columns (5)-(8), indicating that trade and investment liberalization might not significantly increase the proportion of firms with female ownership in developed countries. The results in Table 2 imply that the significant impact on women's entrepreneurship is mainly driven by trade and investment liberalization in developing countries. Our results are in line with the literature that trade and investment liberalization may have a greater impact in developing countries.<sup>4</sup>

The literature on trade and investment liberalization is mainly concentrated on manufacturing industries. For example, studies have shown the positive effect of trade liberalization and investment liberalization on merchandise trade (Gil et al., 2008; Liu, 2009; Felbermayr and Kohler, 2010; Herz and Wagner, 2011). Until recently, studies have extended to service industries. Yet, studies have demonstrated that the General Agreement on Trade in Services framework has limited effects on trade in services due to the limited coverage of country commitment (Hoekman, 2006, 2008). Our

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<sup>4</sup> For example, Felbermayr and Kohler (2010) show that GATT membership has substantially increased trade, and the results are more strongly for developing countries than for industrial countries. Xiong and Sun (2021) illustrate that BITs implemented by developing countries boost the intensive margin of exports, yet decrease the intensive margin in developed countries.



analysis hence differentiates between these two industries in Table 3. The positive and significant estimated coefficients in columns (1)-(4) suggest that trade and investment liberalization significantly encourage women's entrepreneurship in the manufacturing industries of developing countries. However, their effects are not significant in the service industries.

## GMM Results

The results of the GMM estimation are presented in Tables 4 and 5. Table 4 shows the impact of trade and investment liberalization on the number of female business directors for developed and developing countries (columns (1) and (2), respectively), in the short-run. Columns (3) and (4) show the results for the impact on the share of female business directors for developed and developing countries, respectively. As shown in column (2), of the five indices that constitute the economic freedom summary index, only legal system and property rights security have a significant impact on the number of female business directors in developing countries. As this index increases by 1, the number of female business directors increases by about 1,288. While international trade freedom does not significantly impact the number of female business directors, trade openness (measured as the ratio of trade to GDP), another useful indicator of trade liberalization, has a significant and positive effect. As trade openness increases by 1, the number of women business directors increases by roughly 8.4 percent. This is significant at the 10 percent level. The Hansen p-value of 0.100 means that we fail to reject the null that all overidentifying restrictions are jointly valid. The AR2 p-value of 0.681 means that we fail to reject the null of no second-order autocorrelation. Thus, our model for developing countries is valid. Based on the results presented in column (1) trade and investment liberalization has no significant impact on the number of women business directors in developed countries.

Column (4) in Table 4 shows the impact of trade and investment liberalization on the share of female business directors in developing countries. The results show that as the economic freedom summary index increases by 1, the share of female business directors increases by 0.007 percentage points. This is significant at the 5 percent level. The Hansen p-value of 0.856 means that we fail to reject the null that all overidentifying restrictions are jointly valid. The AR2 p-value of 0.147 means that we fail to reject the null of no second-order autocorrelation. Thus, our model for developing countries is valid. Economic freedom has no significant impact on the share of women business directors in developed countries. These results support the earlier interpretation that trade and investment liberalization may have less of an impact in developed countries compared to developing countries.

Column (2) in Table 5 shows the impact of trade and investment liberalization on the share of female sole proprietors in developing economies. The results show that as the economic freedom summary index increases by 1, the share of female sole proprietors increases by 0.031 percentage points. This is significant at the 10 percent level. Similar to the previous results, the Hansen and AR2 p-values of 0.366 and 0.125, respectively, suggest that this model is valid. Analogous to the earlier results, trade and investment liberalization do not have a significant impact on the share of female sole proprietors in developed economies.

## V. CONCLUSION

Literature shows that trade and investment liberalization would increase the rate of new business formation in emerging markets through capital and knowledge transfers (Guadalupe et al., 2012; McGrattan and Prescott, 2009). Furthermore, the number of trade agreements addressing gender issues on the world agenda has risen considerably in recent years. Yet, despite the disparity between

the percentage of female and male business owners, to our knowledge, no research has differentiated the impact of trade and investment liberalization on men's and women's entrepreneurial activities. This paper attempts to fill this gap by investigating the impact of trade and investment liberalization on women's business activities. Using data from the World Bank, the Fraser Institute and CEPII, we utilize fixed effects and generalized method of moments approaches to analyze the impact of liberalization on women's business activities.

We find that trade and investment liberalization has a significant impact in developing countries, primarily the manufacturing industries therein. These results emphasize the need for more gender provisions when designing these types of policies and agreements, particularly in these countries. Future research can improve our results by utilizing the World Bank's firm-level dataset and controlling for individual characteristics that may lead to omitted variable bias in our analysis.

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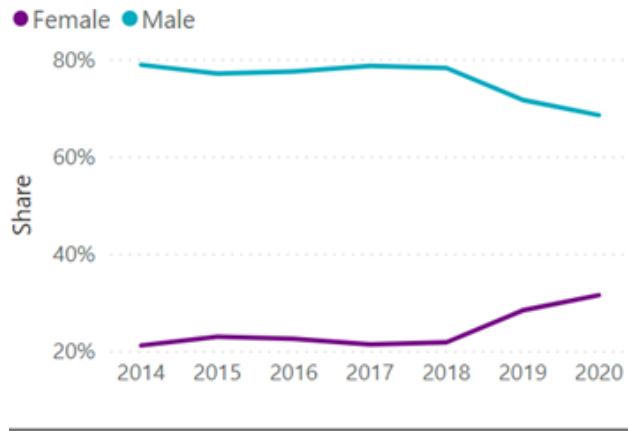


Figure 1: The share of female business owners in Zambia  
 Data source: the World Bank Entrepreneurship Database project

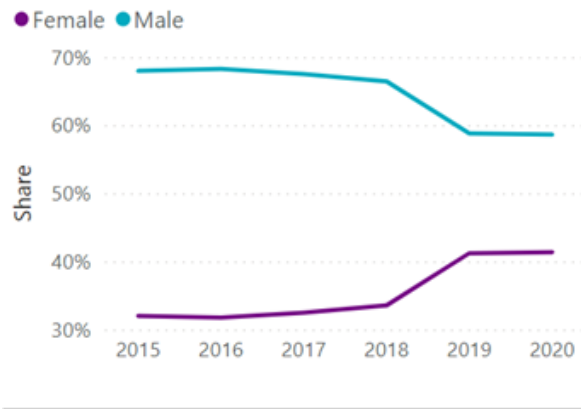


Figure 2: The share of female business directors in Nigeria  
 Data source: the World Bank Entrepreneurship Database project

Table 1: Estimates of Trade and Investment Liberalization Effects on Women Entrepreneurship (baseline regression - all countries)

Dep. Var.: Female Participation Ratio

	(1)	(2)	(3)	(4)	(5)
Economic Freedom	2.620*** (0.394)	4.257** (1.687)	3.658** (1.716)		
International Trade Freedom				2.398** (0.988)	2.129* (1.273)
Government size				1.287 (0.846)	0.724 (1.131)
Legal System and P.R.S.				-2.721** (1.318)	-1.292 (2.188)
Sound Money				1.868*** (0.702)	2.443*** (0.822)
Regulation				-0.554 (0.985)	-1.930 (1.422)
Life Expectancy			0.486* (0.257)	0.448 (0.276)	-0.314 (0.547)
School Enrollment					-0.115* (0.069)
Trade Openness	0.084*** (0.008)	0.093*** (0.026)	0.091*** (0.026)	0.090*** (0.028)	0.032 (0.039)
Year FE	Yes	Yes	Yes	Yes	Yes
Country FE	No	Yes	Yes	Yes	Yes
Observations	4654	4654	4654	4654	3709
R-squared	0.124	0.419	0.419	0.421	0.429

Notes: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors are presented in parentheses.

Table 2: Estimates of Trade and Investment Liberalization Effects on Women Entrepreneurship in Developed and Developing Countries  
 Dep. Var.: Female Participation Ratio

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Economic Freedom	5.946*** (1.944)	4.663** (2.004)			-5.615 (3.858)	-6.028 (3.866)		
International Trade Freedom			3.276*** (1.029)	2.562** (1.065)			2.784 (2.772)	2.633 (3.050)
Government size			1.639* (0.978)	2.535** (0.995)			-3.202* (1.634)	-3.227* (1.647)
Legal System and P.R.S.			-4.980*** (1.735)	-3.601** (1.762)			1.381 (1.867)	1.327 (1.922)
Sound Money			1.984** (0.775)	3.589*** (0.845)			-3.112** (1.502)	-3.149** (1.535)
Regulation			-0.853 (1.170)	-2.131* (1.202)			-2.143 (1.941)	-2.082 (2.008)
Life Expectancy		0.750*** (0.288)				1.890 (1.275)		
Trade Openness	0.085** (0.034)	0.072** (0.035)		0.100*** (0.038)	-0.035 (0.049)	-0.020 (0.049)		-0.006 (0.054)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	3411	3411	3540	3411	1243	1243	1243	1243
R-squared	0.459	0.460	0.455	0.462	0.255	0.256	0.259	0.259

Notes: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors are presented in parentheses.

Table 3: Estimates of Trade and Investment Liberalization Effects on Women Entrepreneurship in Developing Countries - Manufacturing vs Services Sectors  
 Dep. Var.: Female Participation Ratio

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Economic Freedom	8.846** (3.462)	9.180** (3.579)			1.589 (3.134)	0.252 (3.231)		
International Trade Freedom			6.264*** (1.932)	6.093*** (2.020)			2.221 (1.678)	1.713 (1.732)
Government size			2.436 (1.828)	3.376* (1.875)			0.563 (1.565)	1.384 (1.580)
Legal System and P.R.S.			-6.489** (3.147)	-5.402* (3.252)			-6.155** (2.706)	-5.277* (2.725)
Sound Money			2.317* (1.311)	3.240** (1.441)			0.937 (1.223)	2.360* (1.314)
Regulation			-0.986 (2.071)	-1.692 (2.140)			-0.622 (1.877)	-2.008 (1.918)
Life Expectancy		-0.190 (0.510)				0.749* (0.454)		
Trade Openness	0.066 (0.062)	0.070 (0.063)		0.038 (0.069)	0.058 (0.055)	0.043 (0.055)		0.065 (0.061)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	672	672	689	672	532	532	552	532
R-squared	0.683	0.683	0.691	0.690	0.753	0.755	0.749	0.758

Notes: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors are presented in parentheses.



Table 4: GMM Estimates of Trade and Investment Liberalization Effects on Women Entrepreneurship in Developed and Developing Countries  
 Dep. Vars.: No. of Female Business Directors and Share of Female Business Directors

	<u>No. of female directors</u>		<u>Share of female directors</u>	
	(Developed)	(Developing)	(Developed)	(Developing)
	(1)	(2)	(3)	(4)
L. Number of female directors	0.939*** (0.076)	1.099*** (0.043)		
Economic Freedom			0.003 (0.009)	0.007** (0.003)
International Trade Freedom	1536.810 (1267.977)	-406.753 (636.338)		
Trade Openness	-5.302 (4.485)	8.408* (4.689)	-0.000001 (0.00008)	0.00002 (0.00009)
Government size	285.712 (193.263)	214.678 (254.388)		
Legal System and P.R.S.	48.929 (115.212)	1287.876** (544.374)		
Sound Money	-167.602 (125.553)	-580.758 (479.122)		
Regulation	365.314 (293.182)	-580.285 (459.033)		
L.Share of female directors			0.84767*** (0.179)	0.912*** (0.042)
Year Effects	Yes	Yes	Yes	Yes
Observations	65	101	65	101
No. of instruments	16	16	12	12
AR1 (p-value)	0.042	0.092	0.076	0.050
AR2 (p-value)	0.796	0.681	0.229	0.147
Hansen-J (p-value)	0.408	0.100	0.167	0.856
Sargan (p-value)	0.015	0.000	0.038	0.016
F Statistic	1040	1760	9439	1673

Notes: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors are presented in parentheses.

Table 5: GMM Estimates of Trade and Investment Liberalization Effects on Women Entrepreneurship in Developed and Developing Countries  
 Dep. Vars.: Share of Female Sole Proprietors

	(Developed) (1)	(Developing) (2)
L.Share of female sole proprietors	-0.040 (0.144)	0.658*** (0.199)
Economic Freedom	0.034 (0.048)	0.031* (0.017)
Trade Openness	-0.0002 (0.0004)	0.0001 (0.0002)
Log GDP per Capita	0.046 (0.050)	-0.013 (0.008)
Year Effects	Yes	Yes
Observations	92	127
No. of instruments	13	13
AR1 (p-value)	0.283	0.034
AR2 (p-value)	0.518	0.125
Hansen-J (p-value)	0.212	0.366
Sargan (p-value)	0.902	0.041
F Statistic	234	357

Notes: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors are presented in parentheses.