Does Globalization Encourage Female Employment? A Cross-Country Panel Study

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Abstract: The objective of the paper is to examine whether female participation in the labor force (FPLF) is influenced by a country's participation in international markets through foreign direct investment (FDI)—a proxy for globalization. We obtained a panel dataset from the World Development Indicators database for 99 countries from 2001 to 2018, and used the system generalized method of moments (system GMM) to estimate a dynamic panel model with appropriate specification tests. The results show that FDI encourages FPLF to some extent, but the positive effects are more robust for low- and middle-income countries than high-income countries. We also found that results are sensitive to extreme outlier observations in the explanatory factor FDI. These results have important policy implications for low- and middle-income countries; they recommend a focus on sectors that generate higher FDI, as these sectors stand to yield the greatest benefits with regards to female labor force participation.

Keywords: female participation in labor force (FPLF); foreign direct investment (FDI); system GMM

1. Introduction

Globalization can be viewed as a remarkable world integration leading to an exchange of ideas in different cultural, economic, political, technical, and social spheres. Globalization's impact on the receiving country's economic outcomes is an established phenomenon. One of the noticeable impacts, as illustrated in the existing literature, is the connection between globalization and women's economic outcomes [1–4] (Chopra, 2019; Okþak & Koyuncu, 2017; Wacker et al., 2017; Maqsood, 2014). However, globally only about 55 percent of women participate in the labor force compared to 80 percent for men. These gender disparities serve as an important focal point for research related to female employment, as it has a significant positive association with social, economic, and overall globalization [3].

Numerous studies attempt to understand the forces that improve women's economic outcomes. For instance, Tasseven et al. [5] found that GDP per capita, unemployment rates, and fertility rates significantly affected women's employment. Urbanization, FDI, GDP per capita, and economic growth are the most significant contributors to improving gender equality and education [6]. Abdulloev et al. [7] further demonstrated that, by acquiring higher education, females could significantly reduce gender gaps. Similarly, information and communication technology, law, and order also influenced females' status in Pakistan [6]. While multiple factors affect women's employment, this article particularly focuses on the relationship between globalization and female participation in the labor force (FPLF), as this is an underexplored issue in the literature.

This paper contributes to the literature in several ways. First, we carefully analyzed the percentage of women who are in the labor force using a global dataset that offered us a broader view than the traditional subset approach provides. It also allowed us to fully establish the female labor force participation rate in a disaggregated set of countries according to those countries' income levels. Second, we examined the relationship between

FDI and FPLF by using a system GMM approach that helped address potential endogeneity, which is a common issue in lag-dependent dynamic panel data analysis. Third, we highlight the role of other explanatory variables in increasing the female labor force participation and try to present a broader view of the issue across the world.

The remainder of the paper is organized as follows. Section 2 presents the conceptual framework; Section 3 details the data and methodology; Section 4 presents the empirical results and discussion; finally, Section 5 concludes with a summary.

2. Literature Review

While globalization may seem an immeasurable concept, Maqsood [2] determined that it is significantly driven by the factors of production, FDI, and trade flows. Therefore, expanding FDI serves as a reasonable proxy for rising economic globalization. A very large body of research investigates the relationship between FDI, trade, and gender economic disparities. It is generally believed that increased globalization creates job opportunities for females and reduces gender disparities, although different countries and regions experience heterogeneous effects. Technology and trade have contributed to Turkey's employment creation, and FDI implied an absolute skill bias [8]. Both push factors (unemployment) and pull factors (trade liberalization) have influenced Brazilian women to join the labor market [9]. Chopra [1] showed that FDI inflows significantly and positively affected women's empowerment and increased women's welfare. FDI and urbanization have boosted FPLF, particularly in the SAARC region. FDI has encouraged women's employment opportunities in the telecommunication, services, and pharmaceuticals sectors [2].

The aggregate empirical analysis of globalization, particularly FDI inflows and the country's domestic gender wage gap, is inconclusive [10]. For instance, Vijaya and Kaltani [11] found that female salaries and manufacturing wages were negatively correlated with FDI net inflows. This reduced female labor's bargaining power due to the global economy's arrangement, in which countries invest in more convenient conditions. Ouedraogo and Marlet [12] found a positive association between FDI inflows and gender development but a negative correlation between FDI and gender inequality. This relationship was stronger in Sub-Saharan Africa, the Middle East and North Africa, Latin America, and middle-income countries. This implies that, while expanded FDI may increase economic opportunities for women, it does so less than proportionately. Similarly, Cooray et al. [13] analyzed the effect of trade openness and political institutions on female employment in 48 countries of Sub-Saharan Africa from 1985–2012. They found that, while political institutions played a crucial role in enhancing trade openness, and trade liberalization could generate more employment opportunities and economic efficiency, the benefits fell more heavily on men. Bussmann [14] further demonstrated the nuances in understanding globalization's impacts, as he demonstrated that trade deficits were positively correlated with FPLF in developing countries but negatively associated with FPLF in OECD countries. Along with discrepancies by gender and region, the economic benefits from globalization also vary by age, as seen in Wacker et al. [4]. They investigated the link between trade and FDI on female employment with a panel of 80 developing countries from 1990–2005, and demonstrated a negative association between globalization (FDI/trade) and FPLF. Their results were more substantial for young groups, as globalization generates a robust incentive to invest more in education, thereby delaying labor force participation. Although the general belief that globalization positively promotes overall labor force participation holds throughout the literature, the distribution of these benefits varies significantly by gender, region, age, and other factors.

According to Fruttero et al. [15], fiscal policy plays an influential role in reducing gender gaps. Changing the unit of taxation produces a potentially high long-term return on FPLF for all women. Providing cash transfers to poor (low-skilled) women in the labor force, along with higher spending on education and infrastructure with higher returns, encourages female participation in low-income countries. Moreover, subsidizing child care and paid maternity leave in advanced economies increases FPLF. Klasen [16] found that

economic growth, fertility decline, and an expansion of female education promoted FPLF in developing countries. This trend was heterogenous across Latin America, the Middle East, South Africa, and other regions. They also found household economic conditions, the nature of stigmas against working outside for educated women, the legacy of socialism, care burdens (children and elderly), and values played a significant role in promoting FPLF. Social norms have also played a role in constraining FPLF in Saudi Arabia [17]. A low level of FPLF observed in the Near and Middle East has been connected with some aspects of Arab culture that are not directly related to Islam [18]. Prior research by Deseran et al. [19] examined how labor markets, household composition, and individual characteristics affected women's participation in the labor force.

Similarly, by observing 31 provincial units in mainland China and 11,754 households, Chen and Ge [20] found that social norms were responsible for a continuing decline in FPLF in urban China. They also found that the FPLF of married women with non-working mothers-in-law was 5 to 18 percentage points lower than that of married women with working mothers-in-law in urban China. Though female educational attainment has been rising in the Middle East and North Africa (MENA) region, FPLF remains stagnant [21]. Assaad et al. [21] found that this paradoxical relationship could be primarily attributed to the change in opportunity structures facing educated women in the MENA region in the 2000s, rather than the supply-side factors traditionally emphasized in the literature.

Improvements in the business climate, trade openness, and FDI generate employment opportunities for female labor. Multinational corporations can easily hire the cheapest female workers from countries with emerging economies, thus increasing FPLF [9,22,23]. On the other hand, FPLF may be negatively associated with trade openness and FDI inflows, as globalization promotes a competitive business environment in the receiving country [2]. Low-income countries have received a large share of FDI in the primary sector, which relies on physical human capital [12]. To compete in this sophisticated globalized world, countries have raised the level of their labor force skills by investing more in young women's education and, hence, reducing their labor market participation [4]. In Southeast Asia, FDI inflows have negatively impacted gender development, as these countries have received a plethora of investments in the technological sector, which relies predominately on skilled labor, thus benefiting male labor [12].

In sum, the existing literature highlights two contradictory hypotheses regarding the relationship between globalization (as measured by FDI, trade, etc.) and women's labor force participation:

(1)   Globalization has a positive impact on FPLF, as it creates new employment opportunities.
(2)   Globalization has a negative impact on FPLF, as it makes the labor market more competitive for women.

Against the backdrop of prior research, the goal of this study was to determine which of the two hypotheses was supported by the experiences of an expanded panel of countries when FDI was considered as a proxy for globalization. In addition, we investigated whether the results varied by country income categories—a potential explanation for the competing findings in the literature regarding the effect of globalization on women's employment.

3. Methodology

3.1. Empirical Model

To examine the effect of FDI on FPLF, we specified the following empirical model:

$$FPLF_{i,t} = \beta_0 + \beta_1 FPLF_{i,t-1} + \beta_2 FDI_{i,t} + \beta X_{i,t} + \mu_i + \varepsilon_{i,t} \tag{1}$$

The outcome variable, FPLF, per definition of the World Bank, represents the female participation in the labor force as the percentage of the total labor force, which comprises people ages 15 and above who are economically active for country *i* in year *t*. We also included one lag as an independent variable, producing a dynamic panel model. The one lag dependent variable was included in the model because past female labor force

participation is expected to influence the current level of participation; considering only one lag of the FPLF is a useful abstraction.

The key independent variable of interest in our model is FDI, which represents the foreign direct investment net inflows as a percent of the GDP. This is our measure of globalization. Our key testable hypothesis boils down to conducting inference for the coefficient in front of FDI, namely β_2. If the estimate of β_2 turned out to be positive and statistically significant, we would be able to support the hypothesis that, after controlling for the effects of the factors discussed in the paragraph below, globalization encourages women's employment.

Our model includes several control variables: $X_{i,t}$ represents the matrix of the control variables under consideration that may affect women's labor force participation. These include GDP per capita as a measure of the overall development level of a country; the fixed broadband subscription rate as a measure of infrastructure development; female tertiary school enrollment as a percentage of gross enrollment as a measure of advanced education and skill level; female population as a percentage of the total population, to capture women's role in the economy; and fertility rate as total births per female, to gauge the likelihood of women participating in employment. The choice of control variables was guided by relevant literature. For example, Sajid [6] showed how infrastructure development impacted employment. Okþak and Koyuncu [3] showed that education and fertility rates have influenced female labor force participation. Taşseven et al. [5] found that GDP per capita has been one of the key determinants of female labor force participation. Ospina and Tzvetkova [24] showed the effect of the female population on the number of women that participate in economic and business activities, all of which ultimately influence the FPLF. So, our goal was to estimate the impact of FDI on FLFP after accounting for the effect of these usual suspects.

Finally, μ_i represents the time-invariant country-specific fixed effects, and $\varepsilon_{i,t}$ represents the idiosyncratic error components.

3.2. Data Description

To investigate the impact of globalization on FPLF, we utilized data with the variables described above, which are available from the World Bank's World Development Indicators (WDI) database. Thus, our analysis is based on information from 99 countries across the world. This gave us the best possible global dataset rather than a subset of countries. We first extracted data for 175 countries from the World Bank's WDI. However, once missing observations across time were removed, we obtained a panel dataset for the 99 countries listed in Appendix A for the 2001–2018 period. The sample countries represent the following income groups: high income (38 countries) and low and middle income (61 countries). The World Bank categorizes countries into four sub-income groups based on income levels: (a) low-income, (b) lower-middle-income, (c) upper-middle-income, and (d) high-income countries. However, for us to have sufficient observations in each income group to estimate the system GMM method successfully, we re-categorized countries into two income subgroups: (a) high-income (b) low- and middle-income (where we included low-income, lower-middle-income, and upper-middle-income countries) for the perceived differences between high-income countries and the rest of the world. We begin our presentation with the descriptive analysis presented in Table 1.

The summary statistics for female labor force participation show that, in the 99 countries under consideration, on average, 41 percent of the labor force was female, with a minimum value of about 12 percent and a maximum value of 56 percent. The average FDI inflows (as a percentage of GDP) across the entire sample was 6.82%, with values of 10.66% and 4.42% for high-income and low- and middle-income countries, respectively. FDI for the total sample ranged from −58 to 452 percent, with some countries presenting as outliers. Female tertiary education across the full sample was 44.36%, much higher in high-income countries (69.13%) than low- and middle-income countries (28.93%) over 2001–2018. As

expected, the average GDP per capita for high-income countries ($36,365.28) was also much higher than the average for low- and middle-income countries ($3267.15).

Table 1. Descriptive Statistics.

Full Sample					
Variable	Mean	SD	Min	Maximum	Count
FPLF	41.13	9.61	11.66	56.03	1782
FDI inflows as % of GDP	6.82	22.21	−58.32	451.64	1776
Female tertiary education	44.36	31.47	0.17	142.88	1782
Fixed broadband subscription	10.56	12.43	0	46.32	1701
GDP per capita	15,971.48	21,160.56	194.87	111,968.35	1782
Female population	50.29	2.98	23.29	54.56	1782
Fertility rate	2.597	1.47	0.86	7.67	1782
Low-and Middle-Income Countries					
Variable	Mean	SD	Min	Maximum	Count
FPLF	40.1	9.99	13.46	56.03	1098
FDI inflows as % of GDP	4.42	5.54	−37.15	55.08	1092
Female tertiary education	28.93	25.04	0.17	112.8	1098
Fixed broadband subscription	3.85	5.96	0	33.87	1017
GDP per Capita	3267.15	2860.2	194.87	12,120.08	1098
Female population	50.5	1.22	47.97	54.56	1098
Fertility rate	3.15	1.59	1.08	7.67	1098
High-Income Countries					
Variable	Mean	SD	Min	Maximum	Count
FPLF	42.78	8.73	11.66	50.63	684
FDI inflows as % of GDP	10.66	34.76	−58.32	451.64	684
Female tertiary education	69.13	24.05	10.01	142.88	684
Fixed broadband subscription	20.53	12.84	0.01	46.32	684
GDP per capita	36,365.28	21,874.29	7441.35	111,968.4	684
Female population	49.96	4.54	23.29	54.21	684
Fertility rate	1.69	0.49	0.86	3.83	684

As part of the exploratory data analysis, we also computed the pairwise correlation coefficients. While it is important to note that these correlations did not distinguish between cross-sectional versus temporal associations, the correlation matrix is presented in Table 2 for informational purposes.

Table 2. Correlations between FPLF and other explanatory variables.

	FPLF	FDI	GDP per Capita	Fixed Broadband	Female Education	Female Population	Fertility Rate
FPLF	1						
FDI	0.02	1					
GDP per capita	0.12 ***	0.09 ***	1				
Fixed broadband	0.29 ***	0.11 ***	0.68 ***	1			
Female education	0.21 ***	0.01	0.49 ***	0.69 ***	1		
Female population	0.58 ***	0.03	−0.18 ***	0.12 ***	0.19 ***	1	
Fertility rate	−0.09	−0.09 ***	−0.41 ***	−0.49 ***	−0.67 ***	−0.11 ***	1

Note: *** indicate *p*-values < 0.001.

3.3. Estimation Strategy

Given the dynamic panel model we present above, the data were analyzed using system GMM. The GMM is an extension of instrumental variable methodology. Arellano and Bover [25] and Blundell and Bond [26] found that the lagged levels of the regressors

provide weak instruments, which may lead to biased parameters. They proposed a system GMM estimator in which GMM is applied to a system of two equations: (a) an equation in difference form instrumented by lagged levels and (b) an equation in levels instrumented by lagged differences. The difference in explanatory variables is uncorrelated with the individual effects, though time-invariant country-specific fixed effects and other explanatory variables are allowed to be correlated [26] (Readers further interested in the topic can refer to [8,27–29].

We employed the system GMM estimation method for the following reasons:

1. To address endogeneity bias. Ullah et al. [30] suggested that nearly 90% of papers published in premier journals may not address endogeneity bias adequately. Endogeneity arises when (a) at least one of the regressors correlates with the error term, (b) both the dependent variable and regressor simultaneously affect each other (simultaneity), and/or, (c) omitting a relevant variable from the regression model that is correlated to at least one of the included explanatory variables causes endogeneity (i.e., the included variable correlated to the error term). Endogeneity bias causes inconsistent estimates, which give misleading conclusions, wrong inference, and incorrect theoretical interpretations. Our model may suffer from potential endogeneity due to the issues described above. To deal with the potential endogeneity problem, we used the system GMM, which utilizes the lagged values of the endogenous regressor as an instrument.

2. To control for the time unvarying country-specific effects. The system GMM estimation method was appropriate because the sample consists of 99 countries with specific characteristics, such as culture and geography, that do not vary over time.

3. To alleviate problems stemming from a violation of traditional model assumptions. The main advantage of GMM estimation is that the model need not be homoscedastic and serially independent [28]. Another advantage is that it finds the parameter estimates by maximizing an objective function that subsumes the moment restriction such that the correlation between lagged regressor and the error term is zero.

4. Finally, the system GMM method was appropriate to our data because of the short time dimension in the panel data, with 18 years of data (T) and a large country dimension of 99 countries (N) (N > T). See Lee & Lio [31], Roodman [29], etc. for further details.

3.4. Specification Tests

We verified that system GMM was a suitable estimation technique for our model using appropriate statistical tests. The technique requires three different specification tests to be valid: (1) the presence of first-order autocorrelation to avoid a situation where the error term in the first differences has negative first-order serial correlation (i.e., it requires rejecting the AR(1) test of H_0: no first-order serial correlation in first differences); (2) the absence of higher-order autocorrelation (i.e., it requires a failure to reject the AR(2) test of H_0: no higher-order serial correlation in first differences); and (3) a valid over-identification test, such that there is more than enough information in the data to obtain the necessary instruments (i.e., it requires a failure to reject the Sargan test of H_0: the instruments are valid). The specification test results of the AR(1) with *p*-value less than 0.1 and both the AR(2) and the Sargan test with a *p*-value greater than 0.1 revealed that our model satisfied the necessary conditions.

Next, we present the empirical results obtained from estimating Equation (1) using the system GMM method.

4. Empirical Results and Discussion

We estimated Equation (1) to examine the impact of FDI on FPLF for a panel of 99 countries during 2001–2018 using the system GMM model. We present three different sets of regressions in Table 3 as a robustness test of our results across income groups:

column 1 shows the results for the full sample; column 2 shows the results for the low- and middle-income countries; and column 3 shows the results for high-income countries.

Table 3. Impact of FDI on Female participation in the Labor Force (FPLF) Using System GMM Approach.

Explanatory Variables	Full Sample	Low and Middle Income	High Income
Lagged dependent variable			
Lagged FPLF	0.955 ***	0.959 ***	0.952 ***
	(0.015)	(0.014)	(0.016)
Key variable of interest			
FDI inflows as % of GDP	0.001 ***	0.007 *	0.001 ***
	(0.0004)	(0.004)	(0.0004)
Control Variables			
GDP per Capita	0.00001 **	0.00002	0.00001 *
	(0.00000)	(0.00002)	(0.00000)
Fixed broadband subscription	0.003	0.005	0.003
	(0.003)	(0.006)	(0.004)
Female tertiary education	−0.003 *	−0.005 **	0.001
	(0.002)	(0.003)	(0.002)
Female population	0.137 **	0.160 *	0.091 ***
	(0.060)	(0.094)	(0.026)
Fertility rate	−0.007	0.014	−0.164
	(0.037)	(0.034)	(0.129)
Sargan's test	7.11	4.87	5.05
	($p = 0.53$)	($p = 0.77$)	($p = 0.75$)
AR(1)	−5.11	−3.87	−3.39
	($p = 0.00$)	($p = 0.00$)	($p = 0.00$)
AR(2)	−0.54	−0.25	−0.61
	($p = 0.59$)	($p = 0.80$)	($p = 0.54$)
Observations (N)	1782	1098	684
No. of Countries	99	61	38

Note: standard errors are in parentheses; * $p < 0.1$, ** $p < 0.05$, and *** $p < 0.01$ indicate that the coefficient is significant at 10%, 5%, and 1%, respectively. The specification test results of the AR(1) with *p*-value less than 0.1 show the presence of the first-order autocorrelation, which is required to avoid a situation where the error term in the first differences has a negative first-order serial correlation, and AR(2) with *p*-value greater than 0.1 reveals that the models did not suffer from second-order serial correlation. In addition, Sargan's test statistics with *p*-value sufficiently greater than 0.1 show that the instruments used were not over-identified [32]. Estimations were done using the *pgmm* function, a part of the *plm* package in R.

4.1. Result Pertaining to the Key Variable of Interest

The dependent variable in our model is the percentage of females ages 15 and above who participate in the labor force (FPLF). Focusing on our main research question, we saw that FDI had a positive and significant impact on FPLF: a percentage point increase in FDI was associated with a 0.001 percentage point increase in FPLF. While the magnitude is small, this is a statistically significant result.

We also present these results separately for low- and middle-income countries in column 2 and for high-income countries in Column 3 to show the extent to which the effect of FDI inflows was consistent across countries. While the FDI coefficients are positive and significant for both income subgroups, the estimated coefficient value is 0.001 ($p < 0.01$) for high-income versus 0.007 ($p < 0.10$) for low- and middle-income economies. These results illustrate that FDI inflows have had a stronger impact on FPLF in low- and middle-income countries than high-income countries: a one-percent increase in FDI led to a 0.001% increase in FPLF in high-income countries versus a 0.007% increase in FPLF for low- and middle-income countries. Alternatively, we can state with 90 percent confidence that a one percent increase in FDI has led to a between 0.00034% and 0.00166% increase in FPLF for high-income countries as compared to an increase between 0.00042% and 0.01358% for low- and middle-income countries.

These results are consistent with our provided conceptual framework for a relationship between FDI and women's FPLF. Since rising FDI suggests expanding economic globalization, it means that more direct opportunities in productive assets exist, both for high and non-high-income countries. As the latter income group has a lower technological level and infrastructural development, the FDI impact may be stronger in non-high-income countries. Our result is in unison with economic theories suggesting that returns on investment in low- and middle-income countries are higher than those in high-income countries.

FDI also has a positive incentive for domestic investment that increases the demand for efficient labor. In addition, the increase in demand for efficient labor motivates the allocation of more resources for human capital development, such as better health and education, which contributes to increasing women's participation in the job market. The results are consistent with existing literature that found a positive association between FDI and women's employment (e.g., [1,9,23]) and other economic activities (e.g., [33–36]).

4.2. Results Pertaining to the Control Variables

In addition to the primary variable of interest (FDI), we examined how other control variables have influenced female labor force participation. The results were mostly as expected. Below, we summarize the impact of each control variable as seen from both the full and sub-samples.

GDP per capita: GDP per capita is a proxy variable measuring the overall level of economic development [37]. Therefore, women in countries with higher GDP per capita levels are more likely to join the labor force as there is a higher economic incentive. We saw a positive and significant relationship between GDP per capita and FPLF in models other than the low- and middle-income economies, where informal sector jobs and homemaking may have higher returns than formal sector employment.

Fixed broadband subscription: We used the fixed broadband subscription as a proxy for the level of infrastructure development that would influence other economic activities and hence the employment levels. No country can achieve its expected economic growth and development without adequate infrastructure [6]. Better infrastructure means the country is more developed in communication, transportation, and information and technology systems. Access to these resources improves women's mobility in society, which increases their participation in the labor force. Therefore, a positive effect was expected. While our estimates are positive, the results are statistically insignificant. A detailed analysis is required to ascertain the conditions under which it would have a significant impact, which is beyond the scope of this paper.

Female tertiary education: As the education level of women increases it is expected to raise women's employment. The more educated and skilled individuals are, the greater their income potential, because education increases opportunities for paid employment [38]. Other papers, such as Okþak and Koyuncu [3], have also shown that education positively impacts FPLF. However, our results show that female education consistently correlated with FPLF negatively for the whole sample and low- and middle-income countries. For the high-income group, the correlation was positive but insignificant. So, it appears the results for the entire sample were influenced more by low- and middle-income countries. A potential explanation is a nonlinear (U-shaped) relationship between educational attainment and FPLF, as is evident in many developing countries [39]. The least-educated women are most likely to participate in the informal sectors. Once women's education levels catch up and employment opportunities emerge, higher wages encourage them to join the labor force. Therefore, after a threshold level, women's participation increases with education. It is likely that most women with tertiary education are younger and are still in school as female tertiary education is a relatively new phenomenon in many countries, and only younger ones have had the opportunity. Since they are in school, they cannot be working. At the same time, we found a positive relationship between FPLF and female tertiary education in high-income countries, though it was insignificant. Women in high-income countries do part-time jobs besides their education, so we see a positive relationship there. According

to the 2009–2018 figures available from Statista, annually about 17.5 million women were employed on a part-time basis in the US [40].

Female Population: As the female population rises, the number of women who are more likely to participate in economic and business activities increases, ultimately increasing the FPLF. Therefore, we expected a positive association between FPLF and the female population. We see a positive and significant relationship between FPLF and the female population, which confirms our expectations for the whole sample, high-income and low- and middle-income groups. This finding aligns with existing literature such as Ospina and Tzvetkova [24].

Fertility rate: One of the long-lasting and most prominent events in a woman's life is giving birth. As the fertility rate increases, the number of children per household swells up women's household responsibilities (daily housework, child caring, raising), thus discouraging engagement in other activities, including formal employment. Therefore, a negative effect was expected according to existing literature such as Okþak and Koyuncu [3]. Though we found expected results for the fertility rate, they were not significant in our model.

4.3. Limitations of the Study and the Role of Influential Observations

While the study found exciting answers to our research question, there are several caveats to this study: FDI is not the only proxy to measure globalization; there are several missing countries (most notably Australia, Brazil, Japan, New Zealand) due to missing observations for certain variables; different countries have different economic structures, and thus this study gives only a general idea; due to inconsistent data availability, the model does not consider the cultural, social, and institutional variables to explain labor force participation; lastly, data quality issues are a serious concern for developing countries. Even for those countries with data availability, there are severe issues with outliers when we mix countries with different socio-economic characteristics. For example, FDI inflows to Malta and Cyprus are around 500% and 300% of their GDP, respectively, whereas the rest of the world's FDI inflows are approximately at 100% maximum; see Figures 1 and 2, which are drawn to the same scale and visualize the association between FPLF and FDI in our panel data by income group. Figure 1 includes all countries, while in Figure 2 high-income Malta and Cyprus have been excluded.

In our main analysis, we followed the existing literature and continued to include these countries in our study [1,41]. However, when we repeated the analysis by removing these extreme outliers in the direction of our main explanatory factor, we found that FDI inflows were not significant anymore, thus confirming their influence on the estimation results. Now, the main variables that positively affect female labor force participation in our model are the female population and GDP per capita. These results show that a positive impact of FDI on employment and other economic outcomes should be considered critically. Countries such as Malta and Cyprus have often been suspected of money laundering scandals. The Cypriot banking system doubled in size over 2005–2010 due to the invasion of Russian and Ukrainian funds into the island's banks [42]. Future research should address these issues.
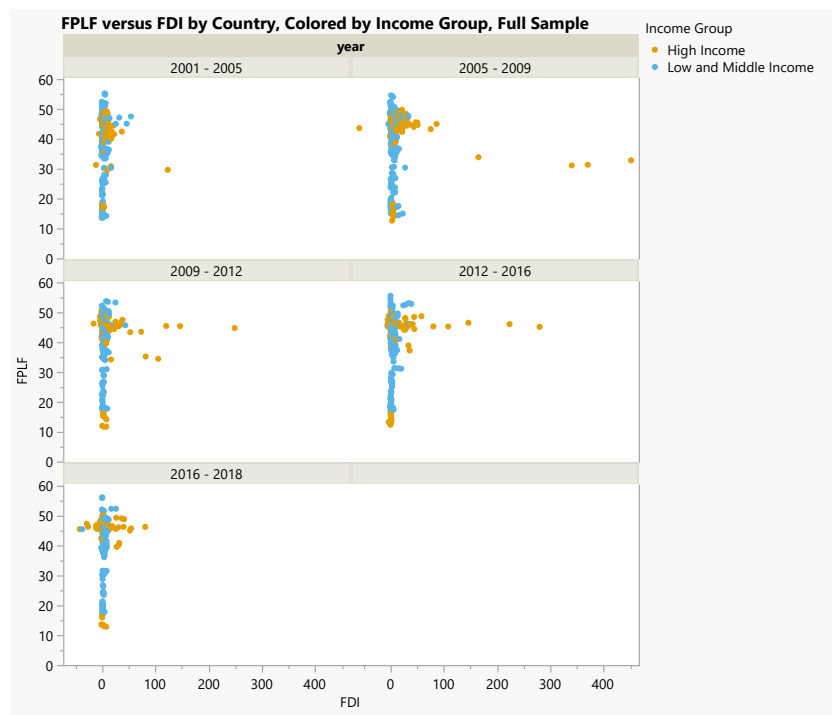
Figure 1. Scatterplots of FPLF versus FDI with observations grouped in panels of 5 years and colored by income group, all countries included. The extreme outliers in the direction of FDI are observations from Malta and Cyprus. The fact that these observations are extreme outliers in the direction of the main explanatory factor, FDI, makes them prime suspects for having strong influence on the model estimation results as far as the effect of FDI. Source: authors' calculation.
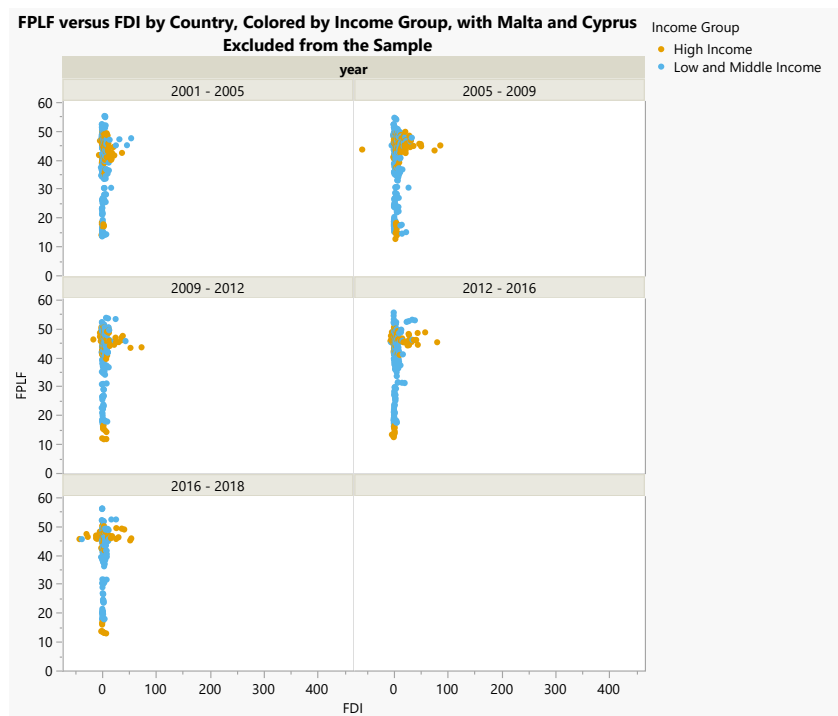

Figure 2. Scatterplots of FPLF versus FDI scaled the same as the scatterplots in Figure 1 with observations grouped in panels of 5 years and colored by income group and Malta and Cyprus excluded from the sample. Indeed, all other countries' FDI inflows range to about 100% of their GDP maximum. Source: authors' calculation.

5. Summary and Conclusions

The increased globalization in the last several decades has created various economic opportunities for enterprises and individuals worldwide at an unprecedented rate. As a result, it has helped improve the quality of life for many men and women. In this process, the issue of women's economic participation has been a critical topic for discussion worldwide. This paper shows that FDI encourages women's economic participation to some extent, but it does so more substantially in low- and middle-income countries than in high-income countries. The results support the hypothesis that globalization as measured by FDI has a positive impact on FPLF by creating new employment opportunities generated by foreign companies. These findings have important policy implications, as women's employment prospects are essential to empowering women, which is a vital issue worldwide and especially critical in developing countries. If governments plan to benefit from globalization and empower women economically, they should invest more heavily in sectors that generate employment opportunities, such as enterprises that bring in FDI. This paper considers only economic perspectives in explaining the dynamics of female labor force participation; other political, cultural, social, and institutional analyses are beyond the scope of this paper, and future work should focus on incorporating such aspects.

Appendix A

Table A1. List of countries.

Albania	Algeria	Argentina	Armenia	Azerbaijan	Bangladesh
Belarus	Belgium	Belize	Benin	Brunei Darussalam	Bulgaria
Burkina Faso	Burundi	Cabo Verde	Cambodia	Cameroon	Canada
Chad	Chile	China	Colombia	Croatia	Cyprus
Czech Republic	Denmark	Egypt, Arab Rep.	El Salvador	Estonia	Ethiopia
Finland	France	Georgia	Ghana	Greece	Honduras
Hong Kong SAR, China	Hungary	Iceland	India	Indonesia	Iran, Islamic Rep.
Ireland	Israel	Italy	Jordan	Korea, Rep.	Kyrgyz Republic
Lao PDR	Latvia	Lithuania	Luxembourg	Macao SAR, China	Madagascar
Malaysia	Malta	Mauritania	Mauritius	Mexico	Moldova
Mongolia	Morocco	Mozambique	Nepal	Netherlands	Niger
North Macedonia	Norway	Oman	Pakistan	Panama	Philippines
Poland	Portugal	Qatar	Romania	Russian Federation	Rwanda
Saudi Arabia	Senegal	Serbia	Slovak Republic	Slovenia	Spain
St. Lucia	Sudan	Sweden	Switzerland	Tajikistan	Tanzania
Thailand	Tunisia	Uganda	Ukraine	United Kingdom	United States
Uzbekistan	Vietnam	West Bank and Gaza			

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