Foreign Direct Investment and Female Labor Force Participation in Latin America and the Caribbean: Long-term Effects and Structural Heterogeneity

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Abstract
This article analyses the relationship between foreign direct investment (FDI) and female labour force participation in 21 economies of Latin America and the Caribbean over the period 1991–2022, with a complementary bilateral analysis for 2000–2022. The study combines descriptive evidence with econometric estimations based on a panel autoregressive distributed lag model and fixed-effects specifications for bilateral FDI flows. The results show that FDI is associated with an increase in female participation in the long term, while no significant effects are observed in the short term. Sectoral evidence indicates a negative effect in agriculture and no statistically significant impacts in industry and services, suggesting heterogeneous dynamics across productive structures. The bilateral analysis further reveals that FDI from some developed economies may be associated with adverse labour market outcomes for women. These findings underscore the importance of structural and institutional conditions in shaping the gender effects of FDI and point to the need for policies that promote inclusive labour market outcomes in the context of economic integration.

Keywords: capital inflows; women's employment; productive sectors; economic integration; developing economies.

I. Introduction

In recent decades, women's participation in the labour market has emerged as a central issue in development debates, reflecting both its social relevance and its macroeconomic implications. A growing body of evidence shows that increasing female labour force participation is associated with higher productivity, greater income equality and stronger long-term growth (Ostry et al., 2018). Despite these benefits, gender gaps in labour market outcomes remain persistent worldwide, particularly in developing regions. These disparities have intensified academic and policy interest in understanding the structural determinants of female labour market inclusion.

These developments have been closely linked to broader structural transformations in the global economy since the 1980s. The decline of traditional production systems, the expansion of service and knowledge-intensive sectors, and the deepening of economic globalization have reshaped labour demand and employment structures. Trade liberalization and technological change have altered the distribution of jobs and skills, with heterogeneous effects across workers and countries (Goldberg and Pavcnik, 2007). In this context, globalization has created both opportunities and challenges for women, expanding access to employment in some sectors while reinforcing existing inequalities in others.

Globalization is a multidimensional process involving economic, social, and political integration. While its economic dimension is reflected in increased trade openness and cross-border capital flows, its social and institutional dimensions also influence labour market outcomes and gender norms (Ghosh, 2021). Understanding how these interconnected processes affect gender equality has become a key concern for both researchers and policymakers, particularly considering the Sustainable Development Goals agenda.

Despite progress, gender inequalities in the labour market remain substantial. According to World Bank data, female labour force participation has consistently remained well below male participation rates over the past three decades, with a persistent global gap of around 25 percentage points. In addition, women continue to face wage penalties and limited access to leadership positions (ILO, 2025; Pal et al., 2024). In Latin America and the Caribbean, although female participation has increased significantly, it remains markedly lower than that of men, and gender wage gaps persist even among workers with similar levels of education and experience (IDB, 2020). These patterns suggest that structural and institutional barriers continue to constrain women's full economic inclusion. From a structuralist perspective, these constraints are not merely labour market frictions, but reflect deeper limitations in the development model, including insufficient productive diversification and persistent inequalities in the social organization of care (Salazar-Xirinachs, 2023; García et al., 2023; Amarante, 2023).

Within this context, foreign direct investment (FDI) has become a key feature of economic globalization and a major driver of structural change in developing economies. Multinational enterprises (MNEs), as the primary agents of FDI, play an important role in shaping labour markets by generating employment, transferring technology, and diffusing managerial practices (Atha-Boakye, 2020). In some cases, these firms adopt more advanced labour standards and diversity policies, potentially contributing to greater gender inclusion (Saeed et al., 2022). However, their impact may not be uniform and depends on sectoral characteristics, institutional environments, and host-country conditions.

In Latin America and the Caribbean, FDI has been a significant source of economic dynamism, contributing to capital formation, infrastructure development, and integration into global value chains. According to UNCTAD (2024), FDI inflows to the region reached approximately US$193 billion in 2023, underscoring its central role in development strategies. At the same time, regional integration processes and trade liberalization have further enhanced the attractiveness of these economies to foreign investors (ECLAC, 2019). Yet its developmental effects cannot be inferred from aggregate inflow figures

alone. While the region has attracted substantial volumes of foreign capital, much less is known about its distributive consequences, particularly in relation to women's labour market inclusion.

This omission is significant. The existing literature offers no clear consensus on whether FDI expands women's economic opportunities or reproduces existing labour market segmentation. Its effects are likely to depend on the sectoral allocation of investment, the institutional environment of host economies and the origin of capital flows (Missios, 2018; Vahter & Masso, 2019; Chopra, 2019; Pham et al., 2021; Poole et al. (2020); Baldwin & Forslid, 2023; Irandoust, 2024; Gök & Ünlüoğlu, 2024; Kaya & Belke (2025). These issues are especially relevant in Latin America and the Caribbean, where persistent gender gaps coexist with high exposure to external shocks, heterogeneous productive structures and a pattern of international insertion that remains strongly uneven across countries and sectors.

This article addresses that gap by examining the effects of FDI on female labour force participation in 21 Latin American and Caribbean economies over the period 1991–2022, with additional bilateral evidence for 2000–2022. Its contribution is threefold. First, it shifts the discussion from a narrow focus on aggregate globalization indicators to the specific role of FDI as a channel through which structural change may affect gender outcomes. Second, it distinguishes between long-run and short-run effects, thereby showing whether the relationship operates through immediate labour-demand effects or through slower processes of productive and institutional transformation. Third, it moves beyond aggregate estimates by incorporating both sectoral evidence and bilateral FDI flows, making it possible to identify structural heterogeneity in the relationship between foreign capital and women's labour market participation.

To do so, the article combines descriptive analysis with econometric estimation. Panel autoregressive distributed lag models are used to identify short- and long-term relationships, while fixed-effects models with Driscoll-Kraay standard errors are employed to assess the effects of bilateral FDI flows from selected developed economies. This empirical strategy makes it possible to offer a broader and more differentiated interpretation of the role of FDI in shaping gender inclusion in Latin America and the Caribbean.

The remainder of the article is structured as follows. The next section reviews theoretical and empirical literature. The third section presents data and methodology. The fourth section discusses the main results. The final section concludes with policy implications.

II. Foreign direct investment, gender inclusion and labour market dynamics

The relationship between FDI and female labour force participation can be understood within a broader framework that combines theories of labour supply, structural transformation and international economic integration. From a theoretical perspective, women's participation in the labour market is shaped by both individual-level determinants, such as human capital accumulation, and structural factors, including sectoral composition, institutional quality and global economic integration.

Human capital theory provides a fundamental starting point for understanding female labour force participation. As emphasized by Schultz (1961) and Becker (1993), investments in education and skills increase individual productivity and expected returns in the labour market, thereby raising labour supply. In the case of women, higher educational attainment has been consistently associated with increased participation rates and improved labour market outcomes. However, as highlighted by Duflo (2012), gender inequalities persist not only due to differences in human capital but also because of institutional and social constraints that limit women's ability to fully translate these investments into labour market participation.

Complementary to this perspective, demographic transition theories suggest that declining fertility rates and changes in household structures contribute to greater female participation in economic

activities (Bloom et al., 2003). Lower fertility reduces time constraints associated with childcare, increasing the opportunity cost of remaining outside the labour market. At the same time, structural transformation processes, particularly the shift from agriculture to industry and services, have historically been associated with rising female employment, although these effects are not uniform across sectors or countries.

Within this context, globalization introduces an additional layer of complexity. Trade openness and international capital flows reshape labour demand by altering the sectoral composition of production and the skill requirements of employment. According to Goldberg and Pavcnik (2007), globalization can generate heterogeneous distributional effects, benefit some groups of workers while disadvantage others. For women, these effects depend critically on the nature of economic restructuring and the sectors that expand because of global integration (CEPAL, 2021; 2024). Ferreira and Castilho (2024)'s recent evidence also suggests that the labour-market effects of international integration are strongly conditioned by sectoral specialization and by the quality of trade-related jobs, which may reproduce, mitigate or accentuate gender inequalities depending on the structure of external insertion.

FDI represents one of the main channels through which globalization affects labour markets in developing economies (UNCTAD, 2024; Harrison and Rodríguez-Clare, 2010). Multinational enterprises (MNEs) play a central role in this process by reallocating production across borders, introducing new technologies and influencing employment structures (Dunning and Lundan, 2008). From a theoretical standpoint, FDI may affect female labour force participation through several mechanisms. First, it can increase labour demand in sectors that are relatively more intensive in female labour, particularly in services and certain manufacturing activities (Juhn et al., 2014). Second, MNEs may introduce more advanced managerial practices and labour standards, including diversity and inclusion policies, which can improve women's access to employment opportunities (Kodama, Javorcik and Abe, 2018). Third, FDI can generate spillover effects by raising productivity and wages in domestic firms, indirectly influencing labour market participation (Aitken, Harrison and Lipsey, 1996; Harrison and Rodríguez-Clare, 2010).

However, these effects are not necessarily uniform or positive. The impact of FDI depends on the interaction between sectoral specialization and local institutional conditions (Blanton and Blanton, 2012; Busse and Nunnenkamp, 2009). In economies where FDI is concentrated in capital-intensive or male-dominated sectors, such as extractive industries, its effects on female employment may be limited or even negative (Te Velde, 2003). Moreover, weak institutional environments may reduce the extent to which multinational firms adopt inclusive practices or generate positive spillovers, thereby constraining the potential benefits of FDI for gender equality (Kucera, 2002; Seguino, 2000).

Empirical literature reflects these ambiguities. Vahter and Masso (2019) find that FDI can have both positive and negative effects on gender employment outcomes, depending on firm characteristics and sectoral allocation. Similarly, Baldwin and Forslid (2023) argue that globalization and investment flows can either reduce or exacerbate gender inequalities, depending on the structure of production and labour markets. Evidence also suggests that more productive firms, often associated with foreign ownership, may exhibit different patterns of discrimination, which can affect gender outcomes in complex ways.

In addition, the interaction between trade liberalization and FDI plays an important role in shaping labour market dynamics. Belke and Bolat (2016) highlight that trade openness can attract FDI by reducing barriers to market access, while FDI itself can reinforce trade integration by embedding economies in global value chains. This mutually reinforcing relationship may generate new employment opportunities, including for women, particularly in export-oriented sectors. Acharya et al. (2019) further argue that increased female participation in internationalized sectors can enhance productivity and innovation, contributing to broader economic development.

Despite these insights, there remains limited empirical evidence on the combined effects of FDI and structural factors on female labour force participation in Latin America and the Caribbean. The region presents a particularly relevant case, given its high exposure to international capital flows and persistent gender inequalities in labour markets. While some studies suggest that increasing female participation could yield substantial economic gains (Novta et al., 2017), structural constraints, such as occupational segregation, wage gaps and institutional weaknesses, continue to limit these potential benefits.

In this context, analysing the relationship between FDI and female labour force participation requires an approach that accounts for both long-term dynamics and structural heterogeneity. It is important to consider how sectoral composition, institutional conditions, and the origin of investment flows interact to shape labour market outcomes. By integrating these dimensions, this study seeks to contribute to a more comprehensive understanding of the role of FDI in promoting or constraining gender inclusion in the labour markets of Latin America and the Caribbean.

III. Methodology and database

The purpose of this study is to examine whether FDI contributes to increasing women's participation in the labour market in Latin America and the Caribbean, and whether this relationship differs across sectors and according to the origin of investment flows. More specifically, the empirical strategy seeks to identify both the long-run and short-run effects of FDI on female labour force participation, while controlling for socioeconomic and institutional factors that may condition women's economic inclusion in the region

To that end, the analysis is conducted in two complementary stages. First, a descriptive assessment is carried out to examine the evolution of female labour force participation in Latin America and the Caribbean between 1991 and 2022, comparing the region with other parts of the world and tracing the trajectory of FDI inflows over the same period. This preliminary stage also considers a set of structural indicators, including per capita income, urbanization, trade openness and institutional quality, with a view to contextualizing differences across countries and identifying the main stylized facts underlying the empirical analysis. The choice of the period 1991–2022 is primarily driven by data availability and comparability across countries. This timeframe corresponds to the longest interval for which consistent and harmonized data on female labour force participation, sectoral employment composition and institutional indicators are simultaneously available for a broad set of Latin American and Caribbean economies. In particular, the early 1990s mark the consolidation of internationally comparable labour market indicators in databases such as the World Development Indicators, as well as the expansion of systematic reporting on FDI flows by UNCTAD. At the same time, institutional measures, such as those capturing legal and regulatory conditions affecting women's economic participation, become more consistently available only from this period onward.

Second, the study estimates the long-run relationship between FDI and female labour force participation using a panel autoregressive distributed lag framework. This approach is combined with pooled mean group estimation, following Pesaran and Shin (1999) and Pesaran, Shin and Smith (2001), since it is particularly suitable for macro panels with a relatively long-time dimension and allows the simultaneous estimation of long-run coefficients, short-run dynamics and the speed of adjustment to equilibrium. The model is especially useful in this context because it can be applied when the regressors are integrated of order zero, I(0), of order one, I(1), or a combination of both, if none is integrated of order two. In addition, the pooled mean group estimator imposes long-run homogeneity across countries while allowing short-run heterogeneity, which is appropriate for a regional sample of economies that may share structural long-run trends but differ in their cyclical responses and adjustment paths.

The general pooled mean group-autoregressive distributed lag model is estimated in error-correction form as follows:

$$\Delta Y_{it} = \phi_i\left(Y_{i,t-1} - \beta_i' X_{i,t-1}\right) + \sum_{j=1}^{p-1} \lambda_{ij}\, \Delta Y_{i,t-j} + \sum_{j=0}^{q-1} \delta_{ij}'\, \Delta X_{i,t-j} + \mu_i + \varepsilon_{it} \quad (1)$$

where Y_{it} is the dependent variable for country $i$in year t, X_{it} is the vector of explanatory variables, ϕ_i is the error-correction coefficient, $\beta_i$represents the long-run parameters, λ_{ij} and δ_{ij} are short-run coefficients, μ_i captures country-specific effects and $\varepsilon_{it}$is the error term. A negative and statistically significant value of ϕ_i indicates convergence to the long-run equilibrium.

The autoregressive distributed lag specification was selected because it offers important advantages over traditional cointegration procedures. In particular, it performs well in relatively small samples, accommodates mixed orders of integration, reduces endogeneity problems by including lagged terms, and allows the distinction between short-run and long-run effects. These features are especially relevant here, since the objective is not only to verify whether FDI and female labour force participation are associated in the long term, but also to determine whether any such association is immediate or materializes only gradually.

The baseline empirical model is estimated using two alternative measures of female labour force participation. The first is the female labour force participation rate as a percentage of the female population aged 15 years and over (FLFP), which captures women's overall integration into the labour market from the standpoint of labour supply. The second is a measure of female participation among the population aged 25–64 (FLFPT), which is intended to focus on women in prime working age and thus to better capture the gender dimension of labour market attachment. In addition, separate specifications are estimated for three sectoral indicators constructed as the ratio of female to male employment shares in agriculture, industry and services, respectively. These variables make it possible to assess whether the effects of FDI differ according to the sectoral distribution of female employment.

The sectoral gender ratio is defined as:

$$\text{Sectoral gender ratio} = \frac{\text{female employment in sector as \% of total female employment}}{\text{male employment in sector as \% of total male employment}} \quad (2)$$

Values above one indicates a relatively greater concentration of women than men in the sector concerned, values equal to one indicate parity, and values below one indicates lower female relative participation. By using relative measures rather than absolute levels, this indicator allows the comparison of gender gaps across sectors and countries independently of the size of the female or male labour force. The vector of explanatory variables includes, first and foremost, the variable of interest, namely net FDI inflows as a percentage of gross domestic product (FDIGDP), which captures the macroeconomic relevance of foreign investment in each economy. The model also includes the logarithm of real GDP per capita, urban population as a share of total population, trade openness measured as exports plus imports over GDP, the human capital index from the Penn World Table, and the Women, Business and the Law index, which is used as a proxy for institutional quality from a gender perspective. Together, these controls reflect the structural and institutional determinants of female labour force participation identified in the literature and in the theoretical framework of the article.

To complement the aggregate analysis, a second empirical exercise is carried out using a bilateral FDI database. In this case, the objective is to examine whether FDI flows from selected developed partner economies produce differentiated effects on female labour force participation in Latin America and the Caribbean. For this purpose, the study estimates fixed-effects models with Driscoll-Kraay standard errors, which are robust to heteroskedasticity, serial correlation, and cross-sectional dependence. This

method is well suited to macro panels in which countries may be jointly affected by common shocks and where error terms may therefore be correlated across units.
The bilateral specification can be expressed as:

$$Y_{it} = \alpha_i + \gamma_t + \theta FDI_{it} + \psi Z_{it} + u_{it} \quad (3)$$

where $Y_{it}$is either FLFP or FLFPT, FDI_{it}denotes bilateral net FDI inflows in millions of dollars from selected developed economies, $Z_{it}$is the vector of control variables, $\alpha_i$captures country fixed effects, $\gamma_t$captures time effects, and $u_{it}$is the error term. Unlike the first-stage model, this specification is intended to isolate the individual contribution of partner-country investment flows rather than the broader macroeconomic weight of total FDI inflows.

The first database covers 21 economies of Latin America and the Caribbean: Argentina, the Plurinational State of Bolivia, Brazil, Chile, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Suriname and Uruguay. The sample was determined by data availability for the variables of interest over the period 1991–2022. The data come from three main sources: the World Development Indicators of the World Bank, the Foreign Direct Investment Online Database of UNCTAD, and the Penn World Table. These sources were selected because they provide internationally comparable, standardized and relatively complete annual series for the countries analysed.

The second database is used for the bilateral analysis and covers the period 2000–2022. It is based on net bilateral FDI inflows from selected developed economies to Latin American and Caribbean host countries, using information from the UNCTAD FDI/MNE database[1]. Because of data limitations, Suriname and Guatemala are excluded from this part of the analysis. This second database makes it possible to test whether investment originating in developed-country multinational enterprises has differentiated effects on women's labour market participation, as suggested in the literature on firm heterogeneity, labour standards and international business practices. Table 1 summarizes the main variables used in empirical analysis.

Insert Table 1

The choice of the control variables follows both the empirical literature and the theoretical arguments discussed in the previous section. GDP per capita captures the level of development and the broader capacity of the economy to generate employment opportunities. Urbanization reflects the spatial concentration of jobs and infrastructure, which may either facilitate women's labour market access or reproduce gendered constraints depending on the structure of cities and labour demand. Trade openness is included because globalization may create new employment opportunities while also intensifying competition and labour market segmentation. Human capital is intended to capture the role of education and skills in women's employability. Lastly, the Women, Business and the Law index is included as a measure of institutional quality specifically related to women's economic rights and opportunities, thus allowing the analysis to account for the legal and regulatory conditions under which labour market inclusion occurs.

Two additional points merit emphasis. First, the distinction between labour force participation and employment is analytically important. FLFP and FLFPT refer to the female labour force, which includes both employed and unemployed women who are actively seeking work. By contrast, the sectoral variables refer only to women who are employed. Second, estimating separate sectoral models is justified by the literature, which suggests that the effects of FDI on women's labour outcomes are likely to differ

[1] Developed countries, for the purposes of this study, include Canada and the United States (North America); Belgium, France, Germany, Italy, Luxembourg, the Netherlands, Norway, Spain, Switzerland, and the United Kingdom (Europe); Japan (Asia); and Australia (Oceania).

across agriculture, industry and services, owing to variations in skill requirements, technological intensity and gender segmentation within production structures.

Finally, two sets of models are estimated. The first uses the 21-country panel to assess whether FDI affects female labour force participation and sectoral gender ratios in the region as a whole over the period 1991–2022. The second uses the bilateral database to estimate whether investment from selected developed economies has differentiated effects on FLFP and FLFPT over the period 2000–2022. Taken together, these two empirical exercises provide a broader picture of the relationship between FDI and women's labour market inclusion in Latin America and the Caribbean.

IV Results

1. Descriptive evidence for Latin America and the Caribbean

The descriptive evidence indicates that female labour force participation in Latin America and the Caribbean increased over the last three decades, but at a pace that was not sufficient to eliminate persistent gender gaps in the labour market. As shown in Figure 1(a), the region experienced a gradual rise in female labour force participation from the early 1990s onward, reaching levels close to 50% of the female population aged 15 years and over by the end of the period. This trajectory, however, was not linear. After a phase of expansion, the indicator displayed relative stagnation in the 2000s and a pronounced contraction in 2020, reflecting the disproportionate impact of the coronavirus disease pandemic on women's employment, especially through the closure of schools, the increase in unpaid care responsibilities and the sharp contraction of service activities. This contraction is in line with recent evidence for Brazil showing that the pandemic reduced the supply of working hours for both men and women, but more sharply for women, particularly mothers of young children, owing to the increase in unpaid care responsibilities during school and day-care closures (Mouzinho and Teixeira, 2024).

Insert Figure 1

In comparative terms, Latin America and the Caribbean occupy an intermediate position among world regions. Female labour force participation in the region is higher than in South Asia and in the Middle East and North Africa, but remains below the levels observed in sub-Saharan Africa and East Asia and the Pacific. This relative position is broadly maintained when the narrower indicator of female participation in the total labour force among the population aged 25–64 is used. As shown in Figure 1(b), the region improved over time, but its progress remained modest in relation to the structural changes experienced by its economies, what suggests that the gains in women's labour market inclusion have been real, but still constrained by persistent institutional, social and productive barriers.

Insert Figure 2

The sectoral composition of female employment provides further insight into these structural constraints. Figure 2 shows that female employment in Latin America and the Caribbean is overwhelmingly concentrated in services. This pattern is closely related to the expansion of care-related and low-productivity services, which, as highlighted in the CEPAL literature, reflects both opportunities for female employment and structural constraints associated with the unequal distribution of unpaid care work (Güezmes García et al., 2023). In 2022, more than four fifths of female employment in the region was located in that sector, while agriculture and industry absorbed much smaller shares. This pattern is similar to that observed in high-income economies and reflects the region's urbanization process, the expansion of tertiary activities and the growing importance of care, education, commerce and other service occupations for women's labour market integration. At the same time, it also reveals the limited

presence of women in sectors that are often associated with higher productivity growth, stronger technological upgrading and more formal employment relations.

The evolution of FDI inflows reinforces the relevance of examining the relation between foreign capital and women's labour market participation. Table 2 shows that Latin America and the Caribbean became one of the leading developing regions in terms of FDI inflows as a share of gross domestic product. In 2022, the region recorded FDI inflows equivalent to 3.44% of GDP, a ratio above those observed in high-income economies, Europe and Central Asia, East Asia and the Pacific. This indicates that foreign capital has remained an important component of the region's insertion into the global economy, even amid recurrent global instability and domestic macroeconomic volatility.

Insert Table 2

The origin of these flows is also highly relevant. As shown in Figure 3, the United States remained the main partner economy, followed by the Netherlands and Spain. This concentration suggests that the effects of FDI on labour markets may also depend on the origin and composition of investment, including the sectors in which multinational enterprises operate and the practices they adopt in host economies.

Insert Figure 3

Taking together, these stylized facts point to three central features of the regional context. First, women's labour market participation in Latin America and the Caribbean improved over time, but not enough to eliminate gender disparities. Second, women's employment remains heavily concentrated in services, indicating a sectorally uneven pattern of inclusion. Third, the region receives substantial FDI inflows, largely from developed economies, making it particularly important to examine whether foreign capital contributes to a more inclusive labour market for women.

2. Econometric results

Before estimating the long-run relationship between FDI and female labour force participation, we assess the order of integration of the variables (Table 3). The results indicate a mixed pattern of stationarity across the series: some variables are stationary in levels, while others become stationary only after differencing. This combination supports the use of the panel autoregressive distributed lag framework, since the ARDL approach is specifically suited to panels that combine I(0) and I(1) variables, provided that none of them is integrated of order two. In substantive terms, the unit root results also suggest that female labour market outcomes and their structural determinants in Latin America and the Caribbean evolve through both persistent long-term tendencies and short-term fluctuations, which reinforces the need for an econometric specification capable of distinguishing between these two temporal dimensions.

Insert Table 3

The core results of the panel ARDL estimations point to a positive and statistically significant long-run association between FDI and women's labour market participation in Latin America and the Caribbean (Table 4). This pattern holds for both indicators of labour market inclusion. When female participation is measured as the overall female labour force participation rate, the long-run coefficient on FDI is positive, although only weakly significant. When the dependent variable is the female share in the total labour force among the working-age population, the coefficient remains positive and becomes more robust statistically. Taken together, these findings suggest that FDI is associated with a gradual expansion of women's labour market participation, but that this effect is more clearly observed when the analysis focuses on the segment of the population most closely attached to labour market activity.

Insert Table 4

This result is important for two reasons. First, it indicates that the contribution of FDI to women's economic inclusion is not immediate. In both specifications, the short-run coefficient of FDI is not statistically significant, while the error-correction terms are negative and strongly significant, confirming the existence of a long-run equilibrium relationship and a gradual adjustment process. The implication is that foreign investment does not translate mechanically into a prompt increase in women's labour market participation. Rather, its effects appear to materialize through slower structural channels, such as sectoral reallocation, organizational change, new employment practices, demonstration effects, and the diffusion of technologies and management standards.

Second, the result calls for caution against overly optimistic readings of globalization. A positive long-run coefficient does not imply that all forms of foreign investment are equally conducive to gender inclusion, nor does it mean that FDI automatically reduces labour market inequalities. The CEPAL tradition has long stressed that external integration produces differentiated effects depending on productive structure, institutional capacity and the pattern of specialization (ECLAC, 2019). In the same spirit, the evidence here suggests that FDI can support women's labour market inclusion, but only under structural conditions.

The control variables reinforce this interpretation. Institutional conditions matter greatly. The Women, Business and the Law index is positive and highly significant in both long-run equations, indicating that legal environments that reduce formal barriers to women's economic activity are associated with higher participation. Human capital is also strongly positive in both models, with particularly large coefficients, which suggests that education and skills remain central to women's insertion into labour markets increasingly shaped by structural change and global integration. Likewise, GDP per capita is positive, implying that higher development levels are associated with broader female labour market inclusion. Trade openness also shows a positive long-run coefficient, although its short-run effect is negative, a contrast that is revealing in itself: trade may expand opportunities over time, but the transition may involve adjustment costs, displacement or sectoral pressures that affect women adversely in the short term.

Urbanization deserves more nuanced reading. It is not significant in the FLFP model, but it is positive and highly significant in the FLFPT model. This suggests that urbanization alone does not necessarily expand women's labour force participation across the entire female population, but it may strengthen labour market attachment among prime working-age women. In other words, cities may offer more diversified employment opportunities, but these opportunities are not automatically converted into generalized inclusion unless other enabling conditions are present, including transport, care infrastructure, safety and institutional support.

The sectoral estimations (Table 5) show even more clearly why the aggregate positive effect of FDI should not be interpreted as uniform across the economy. They also reflect an important change in measurement, as the dependent variables now capture relative employment outcomes (female-to-male ratios) rather than participation in the labour force. When the dependent variables are the female-to-male employment ratios in agriculture, industry and services, the coefficient on FDI is negative and statistically significant only in agriculture, while it is not significant in industry or services.

Insert Table 5

The negative agricultural result is especially revealing. It suggests that, in the regional context, foreign investment is associated with a deterioration in women's relative position within agricultural employment, rather than with greater parity. This may reflect several mechanisms. One possibility is that foreign investment in agriculture tends to be concentrated in more capital-intensive, export-oriented activities that reduce demand for forms of labour in which women are more heavily represented. Another is that investment linked to agribusiness and resource-based production may reinforce occupational segmentation, particularly where access to land, machinery, credit and formal employment remain gendered. In this sense, the result supports a structuralist reading: the effects of international capital flows

depend not only on their volume but on the productive activities into which they are channelled. In addition, this result reflects a shift in what is being measured: unlike FLFP and FLFPT, which capture labour supply, the sectoral ratios capture relative employment outcomes, making them more sensitive to within-sector segmentation and occupational sorting.

By contrast, the lack of significant effects in industry and services suggests that FDI does not automatically alter gender parity within the sectors where women's employment is often expected to expand. This distinction is also linked to measurement. Sectoral ratios reflect relative positions within employment structures, not overall access to the labour market, and therefore may remain unchanged even when total employment expands. This is an important finding. Much of the literature assumes that industrial upgrading or the growth of services linked to globalization should favour women, especially in labour-intensive manufacturing, business services or modern urban occupations (Juhn et al. 2014; Kodama et al., 2018). Yet the results here are more restrained. They indicate that, once the broader structural and institutional controls are included, the relative distribution of women and men within these sectors does not change significantly as a result of FDI alone. In other words, foreign capital may expand activity without necessarily transforming the gender composition of employment. This result is consistent with Ferreira and Castilho (2024), which point out that the gender effects of international integration in Brazil depend on sectoral specialization and on the quality of trade-related employment, rather than on the mere expansion of external flows.

This lack of significance should not be interpreted as evidence of irrelevance. Rather, it points to the limits of macro-level FDI measures for capturing how gendered employment relations are shaped within sectors. It is entirely plausible that some types of FDI in services improve women's access to formal jobs, while others merely reproduce segmentation across occupations, wages or career ladders. The same applies to industry, where women may enter certain export segments but remain excluded from more dynamic or better-paid activities. Drawing on recent ECLAC/CEPAL work on gender and trade, this result should be read through a "structure-and-quality" lens: sectoral specialization and the quality of trade-linked jobs matter as much as the number of jobs created (CEPAL, 2024; Ferreira & Castilho, 2024). Accordingly, a null (or weak) aggregate coefficient in industry and services may reflect offsetting mechanisms across segments, occupations and trade-related dynamics, rather than the absence of any underlying effect (CEPAL, 2021, p. 2; CEPAL, 2024, p. 4).

The controls in the sectoral models are again instructive. Institutional quality is positive and significant across the three sectors, suggesting that legal reforms favourable to women improve relative employment outcomes even when FDI itself is not significant. Human capital has a very strong positive effect in services, which is consistent with the idea that women's gains in the tertiary sector depend heavily on educational upgrading and skills acquisition. Urbanization, however, is negative and significant in industry, indicating that urban growth does not necessarily translate into greater gender parity in industrial employment. This may reflect deindustrialization, the concentration of women in lower-productivity urban services, or the continued masculinization of some industrial segments despite broader urban transformation.

The bilateral estimates add a further layer of complexity (Tables 6 and 7). In addition to capturing heterogeneity by country of origin, this specification also differs in measurement, as it isolates origin-specific flows while maintaining distinct indicators of female labour market participation. When FDI is disaggregated by country of origin and estimated through fixed-effects models with Driscoll-Kraay standard errors, the pattern becomes markedly heterogeneous. For FLFP, FDI from Austria, the Netherlands, Switzerland and the United States is associated with negative and statistically significant coefficients, while the remaining partners do not display robust effects. For FLFPT, the negative association persists for the Netherlands, Switzerland and the United States, though with some loss of significance for other origins.

Insert Table 6

Insert Table 7

These results qualify the aggregate long-run findings in an important way. While total FDI is associated with higher female labour force participation over time, bilateral flows from particular developed economies may be linked to lower female participation in the host countries of Latin America and the Caribbean. This is not a contradiction so much as evidence of composition effects. Aggregate FDI combines investments of different origins, sectors, corporate strategies and labour regimes. Once the origin dimension is isolated, it becomes clear that not all foreign capital has the same social consequences.

Several interpretations are possible. One is sectoral specialization. FDI from some developed economies may be disproportionately concentrated in capital-intensive, extractive, energy-related or infrastructure activities, where direct employment creation for women is limited and where spillovers to female employment are weak. Another is that the productive and organizational model of certain investments may rely on occupational structures that reproduce male dominance, even when the investing countries themselves have relatively advanced gender institutions. A third possibility is that bilateral FDI captures not only productive investment in the strict sense but also financial and tax-related routing through countries such as the Netherlands or Luxembourg-like jurisdictions, in which case the recorded origin of the flow may not correspond neatly to the underlying employment-generating activity. For that reason, the bilateral results should be interpreted carefully, especially where conduit economies may play a role.

Still, the negative coefficients for the Netherlands, Switzerland and the United States are too consistent to be ignored. They suggest that the origin of investment matters for gender outcomes, and that analyses based exclusively on aggregate inflows risk masking important asymmetries. In CEPAL terms, this reinforces the argument that the developmental effects of external insertion depend on the nature of specialization and the domestic capacity to govern it. FDI is not inherently inclusive. Its effects are mediated by the sectors it expands, the quality of the jobs it creates, the institutional environment of the host economy and the broader social organization of care and labour. This also suggests that greater female labour market participation should not be equated with better labour market inclusion, since recent Jerez (2025)'s evidence indicates that women remain more exposed to informality, especially in small firms and low-productivity sectors.

The bilateral estimations also show remarkable stability in the control variables. GDP per capita, urbanization, and the legal environment retain positive and significant coefficients throughout almost all specifications, while human capital remains positive in the FLFP models and mostly insignificant in the FLFPT models. This pattern suggests that domestic structural conditions are more systematically associated with women's labour market inclusion than the origin-specific FDI shocks themselves. Put it differently, even where foreign investment matters; it does so within a domestic institutional and developmental setting that remains decisive. Additionally, gendered labour outcomes are shaped not only by external shocks but also by the structure of firms, sectoral productivity and the degree of formalization of employment (Jerez, 2025).

More broadly, the results indicate that part of the observed heterogeneity stems not just from sectoral differences, but also from how women's labour outcomes are measured, whether in terms of labour supply, labour market attachment or relative employment positions. Overall, the econometric evidence supports four main conclusions. First, FDI is positively associated with female labour force participation in the long run, but not in the short run. Second, this favourable aggregate result does not extend uniformly across sectors: agriculture displays a negative effect, while industry and services do not show significant changes in gender parity. Third, bilateral flows from some developed partners are associated with negative female labour market outcomes, revealing substantial heterogeneity by origin. Fourth, institutional quality, human capital and development level are consistently more robust predictors of women's labour market inclusion than FDI alone.

These findings have two broader implications for the regional debate. Analytically, they suggest that the relationship between FDI and gender inclusion should be understood less as a direct causal link and more as a mediated structural process. Policy-wise, they indicate that attracting foreign investment is not enough. What matters is the type of investment, the sectors it reaches, the conditions attached to it, and the domestic policy framework that shapes its distributive consequences. In this sense, the results are closer to the CEPAL tradition of conditional openness than to a simple liberal narrative in which more integration automatically produces more equality. Foreign investment can contribute to women's labour market inclusion, but only where productive transformation, institutional reform, and gender-sensitive policy act together.

IV. Concluding Remarks

This article examined the relationship between foreign direct investment and female labour force participation in 21 Latin American and Caribbean economies between 1991 and 2022, with additional bilateral evidence for the period 2000–2022. By combining aggregate, sectoral, and origin-specific estimations, the analysis sought to identify whether FDI contributes to women's labour market inclusion and whether this effect varies according to the structure and source of investment flows.

The results indicate that FDI is positively associated with female labour force participation in the long run, but not in the short run. This suggests that the effects of foreign investment on women's labour market inclusion operate through gradual structural channels rather than through immediate employment expansion. At the same time, the sectoral evidence shows that this relationship is far from uniform. While aggregate FDI is associated with improved female labour force participation, it is negatively associated with women's relative position in agricultural employment and has no significant effect on gender parity in industry and services. The bilateral estimations reinforce this argument by showing that the effects of FDI differ according to the country of origin, with some partner economies displaying negative associations with female labour market indicators.

Taken together, these findings point out that FDI should not be viewed as inherently gender inclusive. Its effects depend on the sectors in which it is concentrated, the characteristics of the productive structure, and the institutional conditions of host economies. The consistent positive role of human capital, income level and the Women, Business and the Law indicator further shows that domestic structural and institutional factors remain central to expanding women's economic participation.

From a policy perspective, the results indicate that strategies aimed solely at attracting foreign investment are insufficient. To strengthen the contribution of FDI to gender inclusion, countries in Latin America and the Caribbean need complementary policies that promote women's skills, reduce legal and institutional barriers, expand care system and urban support infrastructure, and steer investment towards sectors with greater potential to generate quality employment for women. This is particularly important in light of recent evidence that care burdens, especially in households with young children, continue to constrain women's labour supply more strongly than men's in times of crisis. In this sense, the gender effects of FDI are not automatic outcomes of external integration but depend on the capacity of development policy to shape its direction and distributive consequences.

Finally, this study has some limitations that open avenues for further research. Macro-level indicators do not fully capture differences in job quality, occupational segregation or firm-level practices. Future research could therefore deepen the analysis by using sectorally disaggregated or firm-level data, as well as by examining the interaction between FDI, labour informality and care regimes. These extensions would help clarify the conditions under which foreign investment can effectively contribute to more inclusive development in the region.

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Tables and Figures

Table 1: Summary of variables

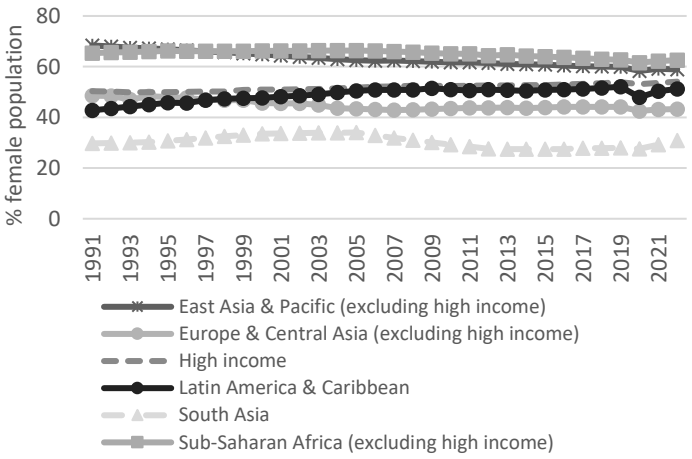
Variable	Definition	Source	Expected sign
FLFP	Female labour force participation rate, female population aged 15+ (%)	World Bank, WDI	Dependent variable
FLFPT	Female labour force participation rate, total population aged 25–64 (%)		
RATIOAGRI	Ratio of female to male employment shares in agriculture		
RATIOIND	Ratio of female to male employment shares in industry		
RATIOSERV	Ratio of female to male employment shares in services		
FDIGDP	Net FDI inflows as a percentage of GDP	UNCTAD FDI	Positive
FDI	Net bilateral FDI inflows, millions of dollars	UNCTAD FDI/MNE	Positive
GDP	GDP per capita, constant 2015 dollars, logarithm	World Bank, WDI	Positive
URB	Urban population as a share of total population (%)		Ambiguous
LAW	Women, Business and the Law index		Positive

Variable	Definition	Source	Expected sign
TRADE	Trade openness, exports plus imports as a share of GDP (%)		Ambiguous
CH	Human capital index	Penn World Table	Positive

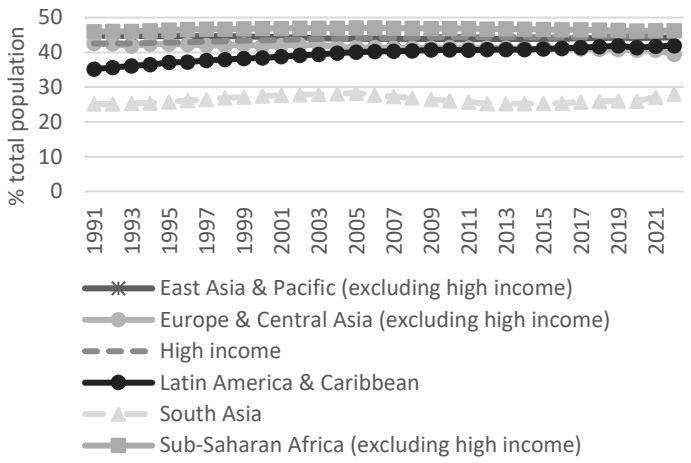
Source: Prepared by the authors.

Figure 1. Trends in Female Labor Force Participation (FLFP) and Female Share in Total Labor Force (FLFPT) in Latin America and the Caribbean Compared with Selected Regions (1991–2022)

a) FLFP

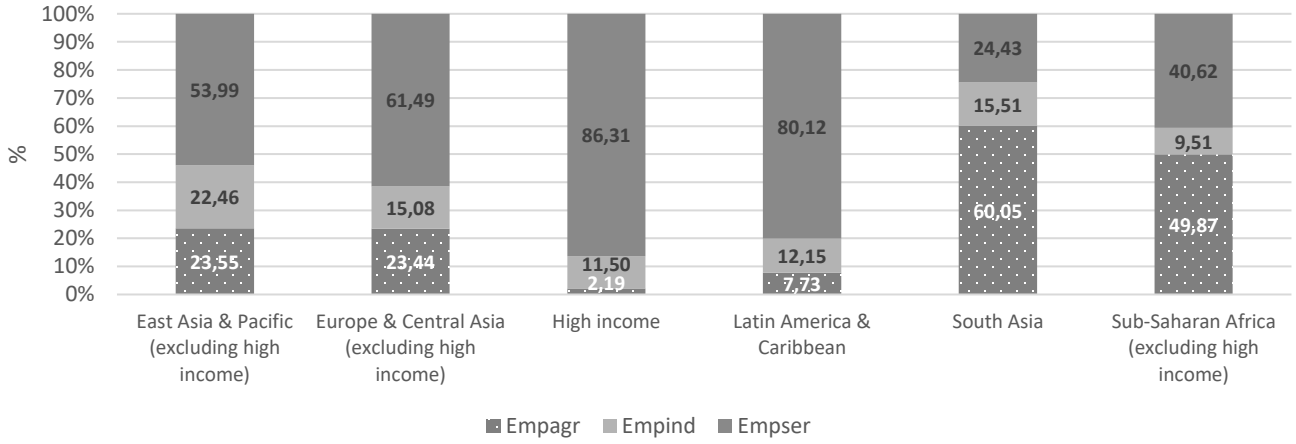


b) FLFPT



Source: Prepared by the authors.

Figure 2. Female Employment Share by Economic Sector in Latin America and the Caribbean Compared with Selected Regions (2022)



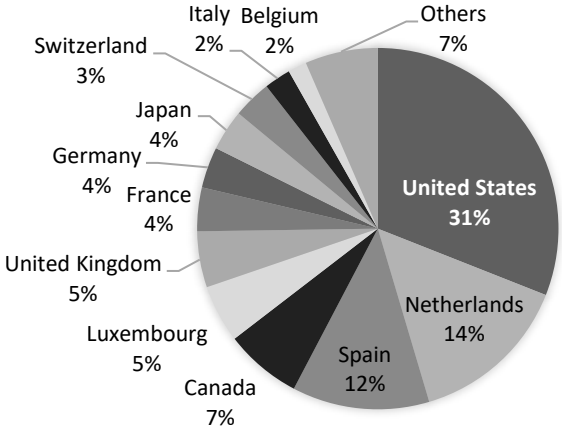
Source: Prepared by the authors.

Tabela 2. Trends in Net FDI Inflows as a Percentage of GDP in Latin America and the Caribbean Compared with Selected Regions (1991–2022) (FDI/GDP, %)

Region	1991	1996	2001	2006	2011	2016	2021	2022
East Asia & Pacific (excluding high income)	1.83	3.86	2.84	4.09	3.5	1.62	2.1	1.31
Europe & Central Asia (excluding high income)		1.19	2.89	4.87	3.94	3.63	2.37	1.83
High income	0.73	1.15	2.65	4.51	3.23	4.37	2.44	1.82
Latin America & Caribbean	1.17	2.27	3.35	3.13	4.07	3.51	2.81	3.44
South Asia	0.11	0.67	0.88	2.09	1.77	1.69	1.23	1.27
Sub-Saharan Africa (excluding high income)	0.38	0.61	3.8	1.69	2.6	2.13	3.71	1.8

Source: Prepared by the authors based on UNCTAD (FDI database) and World Bank (2025).

Figure 3. Average FDI Distribution by Country of Origin: Latin America and the Caribbean (2000–2022)



Source: Prepared by the authors based on UNCTAD (FDI/MNE database, 2025).

Table 3. Unit Root Test Results (ADF, PP, and KPSS)

Variable	ADF Stat.	PP Stat.	KPSS Stat.	Stationarity
FLFP	-3.912	-4.097	0.418	Stationary
FLFPT	-3.905	-4.072	0.516	Non-stationary
RATIOAGRI	-3.623	-3.727	0.293	Stationary
RATIOIND	-4.382	-4.417	0.459	Stationary
RATIOSERV	-3.504	-3.412	1.321	Non-stationary
FDIGDP	-8.868	-11.035	0.110	Stationary
TRADE	-4.907	-4.616	1.080	Non-stationary
GDP	-3.436	-3.626	1.007	Non-stationary
URB	-2.632	-2.661	1.561	Non-stationary
LAW	-6.333	-6.500	0.814	Non-stationary
HC	-4.584	-4.743	0.712	Non-stationary

Source: Prepared by the authors based on UNCTAD (FDI/MNE database, 2025).

Table 4. FLFP, FLFPT and FDI: PARDL Estimation Results

Regressors	FLFP	FLFPT
Long run:		
FDIGDP	0.0717* (1.7274)	0.0441** (2.5450)
URB	-0.1873 (-0.8124)	0.4442*** (3.9517)
LAW	0.2463*** (7.2574)	0.0437*** (3.6780)
HC	34.6476*** (7.8409)	9.9922*** (8.8193)
LOG(GDP)	3.9927* (1.6968)	3.5063*** (3.7004)
TRADE	0.0525*** (3.8939)	0.0417*** (6.5235)
Short run:		
ECM(-)	-0.3221*** (-3.7662)	-0.3934*** (-4.1076)
D(FDIGDP)	0.0065 (0.2025)	-0.0068 (-0.5869)
D(URB)	-22.6853 (-1.2565)	-10.1383 (-1.3797)
D(LAW)	-0.0036 (-0.1000)	0.0026 (0.1818)
D(HC)	-37.3274 (-1.3365)	-8.8129 (-0.9836)
DLOG(GDP)	2.6557 (0.7063)	-1.3108 (-0.8121)
D(TRADE)	-0.0263* (-1.6920)	-0.0155** (-2.5328)
C	-35.6295*** (-3.0802)	-37.0316*** (-3.8057)
@TREND	-0.2951*** (-3.2513)	-0.1862*** (-3.8791)

Source: Prepared by the authors based on estimates made using the STATA program.
Note: (*) (**) (***) indicate a 1%, 5% and 10% statistical significance, respectively.
Standard errors in parentheses.

Table 5. Female-to-Male Employment Ratio in Agriculture, Industry, and Services and FDI: PARDL Estimation Results

Regressors	RATIOAGRI	RATIOIND	RATIOSERV
Long Run:			
FDIGDP	-0.0041***	-0.0011	0.0018
	(0.0011)	(0.0009)	(0.0016)
URB	0.0031	-0.0205***	0.0092
	(0.0041)	(0.0048)	(0.0067)
LAW	0.0015**	0.0018***	0.0024***
	(0.0006)	(0.0006)	(0.0008)
HC	0.0183	0.0292	0.8305***
	(0.0589)	(0.0635)	(0.1222)
LOG(GDP)	-0.0341	-0.1466***	-0.0575
	(0.0362)	(0.0409)	(0.0726)
TRADE	0.00002	-0.00009	0.0002
	(0.0003)	(0.0002)	(0.0004)
Short Run:			
ECM(-)	-0.4272***	-0.4791***	-0.4421***

	(0.0840)	(0.0787)	(0.0772)
D(FDIGDP)	-0.0002	0.0013	-0.0027
	(0.0008)	(0.0009)	(0.0017)
D(URB)	-0.0854	-0.1208	0.4973
	(0.2062)	(0.4333)	(0.4909)
D(LAW)	-0.0004	-0.0011	0.0003
	(0.0005)	(0.0007)	(0.0006)
D(HC)	1.134	0.3268	-1.4054
	(1.0047)	(0.8143)	(1.1614)
DLOG(GDP)	0.1390*	-0.2227*	0.3155**
	(0.0790)	(0.1308)	(0.1502)
D(TRADE)	0.00002	0.0001	-0.0003
	(0.0004)	(0.0003)	(0.0004)
C	0.4449***	2.5379***	0.1619
	(0.1361)	(0.4461)	(0.1482)
@TREND	-0.0005	0.0005	-0.0098***
	(0.0012)	(0.0021)	(0.0029)

Source: Prepared by the authors based on estimates made using the STATA program.
Note: (*) (**) (***) indicate a 1%, 5%, and 10% statistical significance, respectively.
Standard errors in parentheses.

Table 6. FLFP and FDI: Fixed Effects Estimates with Driscoll–Kraay Standard Errors

	Austria	Belgium	France	Germany	Italy	Luxembourg	Netherlands	Spain	Norway	Switzerland	United Kingdom	Canada	United States	Australia	Japan
FDI	-0.00034***	0.00006	-0.00025	-0.00018	0.00048	-0.0009	-0.00009**	-0.00011	0.00049	-0.00036***	0.000077	0.00023	-0.00015**	0.00024	-0.00020
TRADE	0.013	0.013	0.013	0.014	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.013	0.014
log_GDP	6.612***	6.713***	6.589***	6.572***	6.792***	6.642***	6.530***	6.817***	6.861***	6.853***	6.680***	6.628***	6.640***	6.703***	6.630***
URB	0.188***	0.194***	0.189***	0.192***	0.203***	0.189***	0.178***	0.191***	0.203***	0.188***	0.198***	0.200***	0.181***	0.195***	0.192***
LAW	0.100***	0.100***	0.100***	0.103***	0.104***	0.100***	0.096***	0.099***	0.105***	0.103***	0.102***	0.099***	0.095***	0.100***	0.104***
HC	3.983**	4.454**	3.952**	4.112**	5.087***	4.055**	3.326**	4.408**	5.202**	4.385***	4.542***	4.625***	3.457**	4.477**	4.267**
Constant	-126.164***	-128.020***	-125.765***	-125.449***	-129.341***	-126.783***	-124.721***	-130.280***	-130.856***	-131.425***	-127.327***	-125.799***	-127.044***	-127.757***	-126.575***
Obs.	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
R^2	0.4252	0.4243	0.4250	0.4245	0.4257	0.4249	0.4269	0.4257	0.4247	0.4297	0.4243	0.4257	0.4294	0.4245	0.4251
Teste F (p)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Prepared by the authors based on estimates made using the STATA program. Note: (*) (**) (***) indicate a 1%, 5%, and 10% statistical significance, respectively. Standard errors in parentheses.

Table 7. FLFPT and FDI: Fixed Effects Estimates with Driscoll–Kraay Standard Errors

	Austria	Belgium	France	Germany	Italy	Luxemburg	Netherlands	Spain	Norway	Switzerland	United Kingdom	Canada	United States	Australia	Japan
FDI	-0.00013	0.00004*	-0.00007	-6.5E-05	0.000319	-0.00004	-0.00004***	-0.00002	0.00007	-0.00014**	0.00009	0.000206*	-0.000071**	-0.00025	-0.000019
TRADE	0.000879	0.000861	0.001007	0.001141	0.000866	0.000947	0.000896	0.00088	0.00087	0.000991	0.001041	0.000802	0.0009496	0. 000706	0.000931
log_GDP	2.66837***	2.714641***	2.6691***	2.6574***	2.7655***	2.6756***	2.6259***	2.7220***	2.724***	2.7636***	2.6828***	2.6410***	2.6745***	2.7099***	2.69434***
URB	0.109017***	0.111166***	0.109909***	0.110685	0.11719***	0.108623***	0.1040***	0.1108***	0.1128***	0.1088***	0.11601***	0.116***	0. 10476***	0.1119***	0.1114***
LAW	0.05528***	0.055123***	0.055613***	0.0567	0.057409***	0.055194***	0.0534***	0.0555***	0.0565***	0.0568***	0.05606***	0.0534***	0.05268***	0.0544***	0. 05635***
HC	0.101128	0.0799	0.0656	0.03682	0.50292	0.108373	0.43097	0.07814	0.19404	0.0564	0.18135	0. 23114	0.395399	0.10156	0.068667
Constant	-38.6146**	-39.4719***	-38.6345***	-38.4194***	-40.3205***	-38.7807***	-37.862***	-39.6598***	-39.6626***	-40.6917***	-38.7923***	-37.5308***	-38.90578***	-39.3027***	-39.0975***
Obs.	379	379	379	379	379	379	379	379	379	379	379	379	379	379	379
R^2	0.5699	0.5697	0.5696	0.5694	0.5720	0.5699	0.5716	0.5695	0.5693	0.5727	0.5704	0.5742	0.5740	0.5708	0.5693
Teste F (p)	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Source: Prepared by the authors based on estimates made using the STATA program. Note: (*) (**) (***) indicate a 1%, 5%, and 10% statistical significance, respectively. Standard errors in parentheses.