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International Evidence on the Relationship between Foreign Direct Investment, Labour Market Flexibility, and Economic Growth

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Abstract

The study investigates the interconnected dynamics among flexible labor markets, economic growth, and foreign direct investment (F across a sample of 123 countries. Foreign direct investment has experienced steady growth and has surged significantly, emerging as a key driver of economic growth across both developing and developed countries. Utilizing the generalized method-of-moments (GMM) system model, the empirical findings highlight that a flexible labor market (FLM) significantly enhances the positive impact of FDI on economic growth. Various FDI measures are analyzed to ensure robust findings; this indicates that the marginal effect of FDI on economic growth is highly contingent upon the flexibility of the labor market. Countries with deregulated Labour markets experience greater benefits from FDI inflows. The evidence indicates that certain factors within the host country, precisely labour market policies, perform a crucial role in enhancing the growth impact of FDI.

Keywords: Foreign Direct Investment, Flexible Labour Market, Gdp Growth, Minimum Wage, Hiring And Firing Regulation, Hours Regulation.

Introduction

To enhance overall economic growth in emerging economies, FDI is a crucial catalyst for improving productivity by implementing novel procedures and expertise, managerial abilities, workforce development, and global market accessibility. According to endogenous growth theory, FDI spillovers to domestic companies have a multiplier effect that boosts overall productivity and stimulates economic growth (Grossman & Helpman, 1991; Liu, 2008). According to a World Bank (2020), study, FDI has the potential to boost production. FDI is essential for promoting export growth as it provides countries with opportunities to access global markets. FDI is important because it encourages countries to enter global markets, which in turn facilitates the growth of exports. According to the OECD (2017), domestic

companies generally exhibit a lower export intensity than those that facilitate FDI. FDI helps to stimulate innovation and the transfer of technology.

Additionally, FDI helps local industries improve by connecting them to supply chains, distribution networks, and markets (Hanif et al., 2019). According to Dinh et al. (2019), when MNCs invest in a country's domestic manufacturing sector, local businesses grow by gaining access to marketing resources, global connections, and technical knowledge. This expansion increases production, exports, and income generation (Al-matari et al., 2021). Another aspect of FDI is the transfer of managerial techniques, technological expertise, and the latest technology from advanced economies to less developed ones (Belloumi & Alshehry, 2018; Imam & Ahmad, 2022). The diffusion of this knowledge improves the effectiveness and productivity of domestic sectors, allowing them to produce and provide high-quality services and products (Phuyal & Sunuwar, 2018). When countries adopt and use innovative technology, they increase their productivity, resulting in economic expansion and a rise in GDP (Utouh et al., 2024; Werner & Bermejo Carbonell, 2018). Foreign investors employ local Labourers to facilitate their business and expand their operations. This increases the employment level and raises income and purchasing power, which boosts domestic demand and economic growth.

To better understand the relationship between FDI and economic growth, this paper leverages new research that emphasizes the pivotal role of flexible labor markets in fostering growth. To address these concerns, our study highlights the labor market freedom as a mediator of FDI spillovers. We assert this claim based on the fact that countries with rigid labor markets are less inclined to benefit from economic benefits from the presence of MNCs and their sophisticated technologies. So far, research has mainly looked at how institutional quality (i.e., economic freedom) affects growth in the economy. Because of this, this is not the first study to examine the flexible labour market's role in wealth creation5. In this paper, we find a possible relationship between the Fraser Institute's index of labour market freedom (FLM) and growth. The index measures institutional quality and reveals prosperity-promoting factors. The index's components suggest that nations with higher FLM scores will be better able to absorb FDI spillovers. Because of the rigorous regulations, it may be challenging for managers and employees who received training from MNCs on novel technologies or management approaches to join local companies. It could reduce the impact of labour mobility on FDI spillover effects (Fosfuri et al., 2001; Imam & Ahmad, 2022).

FDI is considered crucial to many countries' development. Host countries would likely experience substantial advantages linked to FDI inflows, provided that employees are granted freedom to move across companies. Thus, it is anticipated that nations with a higher Labour market index (i.e., a more flexible labor market) will attract higher FDI inflows and experience a higher growth rate. Due to the optimistic perspective, numerous countries have removed many restrictions to the unrestricted movement of capital across national borders, resulting in substantial FDI inflows globally. Between 1970 and 2000, the inflow of FDI globally rose from $10.1 billion to $1.319 trillion, when it peaked at $2.985 trillion in 2007. However, by 2014, they had fallen to $1.561 trillion. Theories suggest that FDI inflows enhance the host country's production, but empirical studies on the relationship between FDI and economic growth have produced contradictory findings (see (Herzer & Klasen, 2008). The literature requires more information to comprehend the effect of FDI on the economic growth of

nations that receive it. Although certain studies have acknowledged the positive effects of FDI Bilas (2020); De Mello (1999); Yimer (2023), others have either failed to find cogent evidence Carkovic and Levine (2005); Irandoust (2001) or even found negative effects (Azman-Saini et al., 2010; Lensink & Morrissey, 2006). It is significant to recognize that there is conflicting research in this domain. For more information, see the survey by (Görg & Strobl, 2005).

This study examines how the labor market influences the relationship between FDI and economic growth. By utilizing panel estimation techniques and conducting research on a novel aspect of absorptive capacity, this study makes a significant contribution to the existing body of literature. It differs from previous studies due to the use of the dynamic panel data method. As far as the authors know, all absorptive capacity studies have used cross-sectional estimation. To specifically manage simultaneity bias and country-individual effects, we adopt an advanced dynamic panel econometric method. In contrast to the cross-sectional estimator, we implement a GMM (generalized method-of-moments) estimator, which provides numerous benefits. Following are the paper's sections. A summary of the literature is provided in the second section, and the model specification is covered in detail in the third section. Section four explains the methodology, and Section five focuses on the implementation of empirical techniques and the utilization of data. Section six presents the empirical results, and the conclusions, along with a summary, are provided in Section Seven.

Literature Review

FDI is a critical medium for international technology diffusion, significantly impacting economic performance (Blomström & Kokko, 1998; Borensztein et al., 1998). Some of the earliest theories, like Findlay (1978), emphasize FDI's pivotal role in transferring technology, leading to spillover effects that enhance technological advancement in host countries. Model results show that the quantity of these spillovers is influenced by the technology gaps between local and foreign companies. Wang and Blomström (1992), further elaborate that if this gap is substantial, domestic firms may struggle to fully leverage the technological advantages of foreign firms. According to their model, market structure plays a vital role in determining FDI spillovers. As a result of increased competition, foreign companies are more likely to transfer technology to their host nations, reducing the technological gap. Similarly, Barro (1996) asserts that the endogenous growth model can explain FDI's impact on economic growth through technological diffusion. Romer (1990), and Grossman and Helpman (1991) highlight FDI's ability to stimulate economic growth by improving human capital and encouraging innovation, which leads to long-term productivity gain. The literature reveals varying outcomes of FDI spillovers across different studies. While positive spillovers are documented by Chuang and Lin (1999) and Driffield (2001), other studies, Such as those by De Mello (1999), Akinlo (2004); Carkovic and Levine (2005), and Bilas (2020), present more ambiguous or even negative effects (Djankov & Hoekman, 2000; Lensink & Morrissey, 2006).

By "absorptive capacity," researchers tried to explain the source of variation in FDI outcomes; that is, how a country is able to assimilate and put into use exogenous knowledge. This concept was used to explain the inconsistent effects of the FDI-growth linkage. Narula and Marin (2003), define absorptive capacity as the ability to internalize and adapt information generated by others, whereas Cohen and Levinthal (1990) as the capability of recognizing the value of new information that comes from the outside and applying it to achieve business

objectives. Blomström et al (2003), contend that for host countries to capitalize on the spillover effects of FDI, they must possess a substantial absorptive capacity. argue that host countries must have a high absorptive capacity to benefit from FDI spillover effects. This aligns with analysis, which highlights the importance of absorptive capacity in drawing inward investment. Thus, absorptive capacity emerges as a vital moderating factor that facilitates technological spillovers and diffusion, with multiple determinants such as financial markets trade policy, government regulation, human capital, and institutions play important roles. (Yahaya et al., 2024) In the case of Malaysia, concluded that FDI and economic growth do not have a direct relationship. However, FDI positively impacts economic growth when the country meets a minimum threshold of absorptive capacity.

One of the key components mediating the effect of FDI is the financial market (Azman-Saini & Law, 2010; Hermes & Lensink, 2003). Abdul Bahri et al (2019), highlight that FDI's growth effects are more significant in countries with sophisticated financial markets, as they facilitate technology diffusion and efficient resource allocation. In addition, the impact of FDI on economic growth is also profoundly influenced by trade policy.The benefits of FDI are widely acknowledged in open trade regimes. Balasubramanyam et al. (1996) 46 countries identified that export promotion policies boost FDI growth more than import substitution strategies. Kohpaiboon (2003), supports this finding in the context of Thailand, where an export-oriented regime greatly increased the growth impact of FDI.

The labour market turned out to be a key component of the development strategy. Labour market reforms have proven effective in various contexts, particularly those focused on attracting resource-, asset-, and export-oriented foreign direct investment. In his research on ASEAN countries, Ismail (2009), highlights advantages such as preferential investment policies and lower input costs that attract FDI.

Further, economic literature has extensively investigated the relationship between economic growth, FDI, and human capital. Studies by Borensztein et al (1998) and Ford et al (2008) demonstrate that FDI positively impacts environments with high human capital. Noorbakhsh et al (2001), in Asia and Africa, suggest that human capital has a positive impact on FDI and is one of the most important determinants. Its significance has increased considerably over time. Bengoa and Sanchez-Robles (2003) in Latin America support the importance of skilled labour in attracting FDI and boosting economic development. According to Baez (2014) research, the flow of FDI is considerably boosted by informal labor markets. Kheng et al. (2017) examined panel data from 55 developing countries and concluded that there is a positive relationship between human capital and FDI. The study emphasizes that both FDI and human capital are crucial for economic development. Nakamura et al (2019), place a strong emphasis on effectively employing technology and human resources to address productivity issues, especially in Japan. Thi Cam Ha et al (2024), employed the GMM method to analyze panel data from 143 countries and concluded that FDI has a significantly positive effect on the economic growth of both developed and developing countries. Kebede et al (2024), examined the role of FDI in conjunction with governance and human capital in Sub-Saharan and East Asian Pacific countries. The study suggests that FDI, when combined with literacy and good governance, has a positive effect in Sub-Saharan countries but a negative effect in East Asian Pacific countries.

However, Some studies, however, indicate that the correlation between labour abundance and FDI inflows is negative (Borio et al., 2016; Mina, 2015). Furthermore, they found that other factors other than labour reallocation had greater impact on productivity growth. labour reallocation has a smaller effect on productivity growth than other factors. Additionally, the rigidity and flexibility of labour market policies may impact FDI inflows. The capacity of labour markets to adapt to shifting economic circumstances is known as labour market flexibility. Baimbridge et al (2006), emphasise the significance of labour market flexibility in FDI decisions, emphasising that the receiving countries labour force is essential for the production process. In 2006, Whyman and Baimbridge identified three dimensions of labour market flexibility: supply-side flexibility, labour cost flexibility, and functional flexibility. Supply-side flexibility includes numerical flexibility (e.g., regulation and fiscal policy) and the skills and qualifications of the workforce. Second, there is labour cost flexibility, which encompasses things like minimum wage, aggregate wage flexibility, incentive pay, workplace, wage bargaining patterns and institutions, and wage bargaining itself. In the third group, we have functional flexibility, which encompasses concepts like multi-skilling, subcontracting, employee involvement, collaboration, and human resource management initiatives. Labor market flexibility is not only associated with FDI inflows but also plays a significant role in fostering economic growth. Nickell and Layard (1999), contend that economies whose labour markets are more flexible tend to have faster economic growth and greater productivity. Calderón and Chong (2005), examined the relationship between labor market flexibility and economic growth in 76 developing nations spanning the years 1970–2000. Their study, employing the GMM method, verifies that labor markets with fewer regulations can improve production. Betcherman (2015), investigates the effects of minimum wage and employment protection laws on developing countries, determining that productivity growth can be improved by increasing the minimum wage, a finding consistent with Bassanini and Venn (2008), who looked at 18 OECD nations from 1979 to 2003. Similar to Basanini and Venn (2008), Berchelmann (2015), research suggests that employment protection laws hurt production efficiency. The research literature generally indicates that labor market flexibility has a significant impact on FDI inflows, productivity, and overall output growth. Oliveira and Forte (2021), explored the 180 countries' panel data and concluded that a flexible labour market enhances the attraction of FDI except for working hours rigidity. In their study, Nordin et al (2019), looked into the threshold effects , of labour market flexibility on the relationship between foreign direct investment and economic growth in eighty different developing nations. Their results suggest that FDI's growth-promoting effects only become noteworthy when the labour market reaches a certain level of flexibility.

Research Method

Model Specification

This study utilizes the models proposed by Balasubramanyam et al. (1996) and Azman-Saini et al. (2010), to examine how a flexible labour market affects FDI and GDP growth relationship. The initial model is formulated as follows:

$$y_{it} = \beta_0 y_{it-1} + \beta_1 FDI_{it} + \beta_2 FLM_{it} + \beta_3 X_{it} + \eta_i + \varepsilon_{it} \quad (1)$$

y represents GDP growth, FDI indicates foreign direct investment, FLM represents flexible labour market, and X represents control variables (e.g., physical capital, trade openness,

government expansion, and human capital) affecting output growth. Furthermore, In this model, (i) represents the country and (t) the time index, ε_{it} is the error term, and (η_i) is the unobserved county-individual effect. The following model modification is applied by adding an interaction term (FDI × FLM) to investigate the hypothesis that a flexible labor market significantly enhances the growth impact of FDI:

$$y_{it} = \beta_0 y_{it-1} + \beta_1 FDI_{it} + \beta_2 FLM_{it} + \beta_3 (FDI \times FLM) + \beta_4 X_{it} + \eta_i + \varepsilon_{it} \quad (2)$$

This framework uses $\beta 3$ to test whether FLM moderates the FDI growth effect. To calculate the marginal impact of FDI on GDP growth,can be determined by computing the partial derivative of y_{it};

$$\frac{\partial y_{it}}{\partial FDI_{it}} = \beta_1 + \beta_3 FLM \quad (3)$$

We calculate standard errors to assess statistical significance, following the methodology of Brambor et al (2006):

$$\sigma^2_{\frac{\partial y}{\partial FDI}} = var(\beta_1) + FLM^2\, var(\beta_3) + 2FLM\, cov(\beta_1 \beta_3) \quad (4)$$

Research Method

The generalised method-of-moments (GMM) panel estimator is utilised in this investigation. This estimator was initially presented Holtz-Eakin et al. (1988) and it was subsequently improved by Arellano and Bond (1991), Arellano and Bover (1995) and Blundell and Bond (1998) following its initial introduction. The GMM estimator is chosen for two primary reasons. First, the dynamic nature of the regression equation complicates the control for country-individual effects through the use of country-specific dummy variables. Second, the GMM estimator effectively minimizes simultaneity bias arising from endogenous explanatory variables. For instance, FDI is often endogenous since higher output levels can attract more FDI. To address country-specific effects, Arellano and Bond (1991) propose converting equation (1) into first differences, as shown below:

$$y_{it} - y_{it-1} = \beta_0 (y_{it-1} - y_{it-2}) + \beta_1 (FDI_{it} - FDI_{it-1}) \beta_2 (FLM_{it} - FLM_{it-1}) + \beta_3 (X_{it} - X_{it-1}) + (\varepsilon_{it} - \varepsilon_{it-1}) \quad (5)$$

Arellano and Bond (1991) suggested employing lagged levels of the regressors as instruments to mitigate simultaneity bias in the explanatory variables. This approach addresses the correlation between the different variables $(y_{it-1} - y_{it-2})$ and the error term $(\varepsilon_{it} - \varepsilon_{it-1})$. The difference GMM estimation method is based on the assumption that the error term does not exhibit serial correlation and that the lagged explanatory variables are weakly exogenous. In line with Arellano and Bond (1991), the following moment conditions are established:

$$E[y_{it-s}(\varepsilon_{it} - \varepsilon_{it-1})] = 0 \; for \; S \geq; t = 3, \ldots . T \quad (6)$$
$$E[X_{it-s}(\varepsilon_{it} - \varepsilon_{it-1})] = 0 \; for \; S \geq; t = 3, \ldots . T \quad (7)$$

While the difference estimator is effective at addressing simultaneity bias and country-specific effects, it has one significant limitation. According to Blundell and Bond (1998), León-

Borrego and Arellano (1999), suggest that the lagged levels of explanatory variables function as weak instruments when they exhibit persistence. In small samples, this issue can lead to biased estimations of parameters and larger asymptotic variances. To tackle these issues, Arellano and Bover (1995), introduced an alternative system estimator that integrates the level equation (Equation 1) with the difference equation (Equation 5). Blundell and Bond (1998) illustrated that the system estimator mitigates the biases and inaccuracies typically associated with difference estimators. The second component, level regression, adds moment conditions to improve estimate robustness.

$$E[(y_{it-s} - y_{it-i})(\eta_i + \varepsilon_{it})] = 0 \; for \; s = 1 \quad (8)$$
$$E[(X_{it-s} - y_{it-i})(\eta_i + \varepsilon_{it})] = 0 \; for \; s = 1 \quad (9)$$

To ensure the validity of the GMM estimator, two post estimation tests are employed. The first test is the over-identifying restrictions J-test, developed by Hansen (1982). This test determines the validity of the model's instruments. The J statistic is distributed according to a chi-square distribution, with the degrees of freedom approximately equal to the number of overidentifying restrictions. According to the null hypothesis, which assumes that the expected value of the empirical moments is zero, the instruments are considered valid. The second test, introduced by Arellano and Bond in 1991, evaluates the error term of the differenced equation for the presence of second-order serial correlation. The null hypothesis, which asserts that there are no second-order serial correlations, must not be rejected by this test in order for the model to be considered valid. There are two common versions of GMM estimators: one-step and two-step. One-step estimator uses a weighting matrix that is not affected by the estimated parameters. However, the two-step estimator uses optimal weighting matrices derived from a consistent estimate of the moment conditions covariance matrix. This optimal weighting increases the two-step estimator's efficiency asymptotically. This study employs the two-step estimator and the moment conditions outlined in Equations (6)-(9).

Data and Sample Period

To estimate equation (2), we utilized the GMM system technique on a sample of 123 nations. The mean values of the main sample variables are given along with a list of countries in Appendix A. The sample size of countries is determined by the availability of reliable variable data between 2000 and 2018. This period is divided into four non-overlapping five-year intervals (2000-2004, 2005-2009, 2010-2014, and 2015-2018) to smooth out cyclical fluctuations. The World Development Indicator (WDI) database is used to get data on net FDI inflows and GDP growth as a %percentage of GDP. In addition, the FLM index is included from the Fraser Institute (Gwartney et al., 2006). The index measures three key Labour market flexibility indicators: (i) minimum wage Reed and Economics (2010); hours regulation Oliveira and Forte (2021); and hiring and firing regulations (Görg & Strobl, 2005) . Gross fixed capital formation, trade openness, human capital measured by secondary school enrolment, and government consumption expenditure as a percentage of GDP are additional control variables All control variable data, except for the flexible labor market, are sourced from the World Development Indicators (WDI). The data for the flexible labor market is obtained from the Economic Freedom Index provided by the Fraser Institute.

Additionally, for robustness checks, we utilize FDI stock data sourced from the UNCTAD database. [1]. The data utilized for this analysis are summarised in Table 1. To capture FDI-growth rate contingency, we used three main approaches. For the first method, the baseline specification, we multiplied FDI by the FLM index to get an interaction term (FDI*FLM). The regression included both variables separately to avoid proxying the interaction term for FLM or FDI.

The level of FLM determines FDI's marginal effect on growth if the coefficient of the interaction term is statistically significant. We utilized an alternative FDI stock measure from the (UNCTAD) in the second approach. In the final approach, we divided the dataset into two subsamples, Eq. (2), based on their income: developed and developing. In this case, subsample FDI coefficient differences indicate a contingent relationship. We aim to establish a strong correlation between FLM, FDI, and economic growth in numerous countries.

Table 1
Descriptive statistics N = 123 cross-country. T = 2000 – 2018

Variables	Unit of Measurement	Mean	Std. Dev	Min	Max
GROWTH	GDP growth (annual %)	3.69	2.96	-10.41	23.50
FDI	FDI, net inflows (percent of GDP)	5.68	17.34	-40.32	327.2
PC	Gross fixed capital formation (percent of GDP)	23.61	6.96	3.73	63.53
TRADE	Trade (percent of GDP)	87.77	59.23	20.10	433.0
GE	General government consumption expenditure (percent of GDP)	15.37	4.88	1.81	28.81
HC	School enrolment, Secondary (% gross)	103.54	13.15	35.75	148.8
FLM	Labour market regulations Scale (0 to 10)	6.27	1.42	2.86	9.4
MW	minimum wages (0 to 10)	6.28	2.70	0	10
HFR	Hiring and firing regulations. (0 to 10)	4.68	1.30	1.41	8.06
HR	Hours Regulations (0 to 10)	7.56	1.92	2	10

Estimation Results and Discussion

In this section, the empirical findings are presented employing the distinct approaches discussed in the previous section on methodology. The findings are comprehensively presented in Tables 1-5. Specifically, Table 1 presents the results from the initial investigation into the impact of FDI and FLM on GDP growth. The baseline model, which incorporates an interaction term (FDI × FLM), displays the estimated coefficients in Table 2. This model takes into consideration the combined effect of FDI and labor market flexibility on growth. Table 3 displays additional interaction terms that are generated by multiplying the FLM index with the FDI stock alternative measure of FDI. After splitting the sample into developed and developing nations, the results are shown in Table 4.

The findings in Table 2 show that FDI positively and substantially affects GDP growth. This finding is consistent with prior research conducted by Doytch and Uctum (2019); Pegkas

[1] The information regarding foreign direct investment (FDI) stock in Suriname is unavailable.

(2015), also observed a positive correlation between FDI and economic growth. In addition, the positive and significant FLM coefficient demonstrates that flexible labor markets amplify the growth effect of FDI. These findings are consistent with Kharroubi (2006), who concluded that greater FLM is essential for economic growth. The other FLM sub-indicators, on the other hand, show that hiring and firing regulations positively impact growth, while minimum wages and hours regulations show negative effects. These results are consistent with the minimum wage Reed and Economics (2010) the hours regulation Downes et al. (2004), and the hiring and firing regulations Gross and Ryan (2008) findings. The regression analysis reveals that the coefficients of the core variables display the anticipated signs and achieve statistical significance at the 10% level or higher. The tests for serial correlation (Arellano-Bond test) and validity of the instrument (Hansen test) both pass the specification tests.

Table 2
Results of a direct effect of FDI on Economic growth
(N = 123 countries; Sample Period = 2000– 2018)

	FLM	MW	HFR	HR
Variables	Model 1	Model 2	Model 3	Model 4
$GDP_{,t-1}$	0.149***	0.100*	0.188***	0.272***
	(0.039)	(0.057)	(0.033)	(0.037)
FDI	1.152***	0.0078***	0.1359***	0.997**
	(0.423)	(0.003)	(0.0447)	(0.478)
PC	0.179***	0.0472	0.148***	0.134***
	(0.036)	(0.041)	(0.034)	(0.032)
TO	0.00367	0.0323***	0.0087	0.004
	(0.009)	(0.007)	(0.006)	(0.006)
GE	-0.351***	-0.117	-0.236***	-0.271***
	(0.090)	(0.083)	(0.074)	(0.082)
HC	0.0856***	0.0868**	0.0335*	0.0709***
	(0.022)	(0.028)	(0.020)	(0.022)
FLM	0.573**			
	(0.243)			
MW		-0.343***		
		(0.131)		
HFR			0.383**	
			(0.186)	
HR				-0.178*
				(0.098)
Constant	-8.893**	-5.730	-3.373	-2.778
	(3.122)	(3.818)	(2.593)	(2.826)
Sargan test	20.747	22.658	27.263	15.645
	0.293)	0.091)	0.074)	0.6173)
AR(1)	-3.262	-3.096	-3.193	-3.438
	(0.001)	(0.002)	(0.001)	(0.000)
AR(2)	0.700	0.113	0.306	0.574
	(0.483)	(0.909)	(0.759)	(0.566)

Note: Stata xtdpdsys command is used for all model estimation. Parentheses contain the standard errors, while p-values for the Sargan test, AR(1), and AR(2) are reported separately. The levels of statistical significance are denoted as follows: *** at 1%, ** at 5%, and * at 10%. Although time dummies are included in the analysis, they are not reported here to conserve space.

Table 3 presents the regression results incorporating the interaction term (FDI × FLM), which examines the interplay between the FLM index and FDI. The interaction term is critical for assessing how FLM influences the growth effect of FDI. A positive sign and statistical significance of the interaction term at the 5% level indicate that FLM enhances the beneficial effect of FDI on GDP growth. Moreover, other sub-indicators of flexible labor markets, including minimum wage MW, HFR, and HR, demonstrate positive and statistically significant effects at the 10% level or better. These results indicate that the inflow of FDI, in conjunction with a consistently flexible labor market, promotes economic growth. The model's robustness is confirmed by the second-order serial correlation test and the Hansen over-identification test. Both tests confirm that the model is valid. This study demonstrated that the growth impact of FDI depends on the recipient country's absorptive capacity, with particular emphasis on the flexibility of its labor market. To further validate the results, equation (4) is employed to compute the standard errors and assess the statistical significance of FDI's marginal effects on growth. Across all models, these marginal effects are statistically significant and positive at the mean, minimum, and maximum levels of FLM. Specifically, The results of Model 1A demonstrate that the growth effect of FDI is increased by 0.12% for each one-point rise in FLM. The effects increase by 8 percentage points at the minimum FLM level and by 18 percentage points at the maximum FLM level. The failure to reject the null hypotheses in both specification tests strengthens the validity of these findings. This confirmation indicates that the models are valid.

Table 3
Interaction specification between FDI and FLM
(N = 123 countries; Sample Period = 2000– 2018)

	FLM	MW	HFR	HR
Variables	Model 1A	Model 2A	Model 3A	Model 4A
$GDP_{i,t-1}$	0.215***	-0.0102	0.247***	0.0976**
	(0.039)	(0.035)	(0.037)	(0.033)
FDI	0.484	0.672	0.659	0.798
	(0.0495)	(0.749)	(0.604)	(1.074)
PC	0.158***	-0.0941***	0.170***	0.151***
	(0.039)	(0.030)	(0.043)	(0.033)
TO	0.0337***	0.0153*	0.0107*	0.0162**
	(0.007)	(0.008)	(0.007)	(0.007)
GE	-0.430***	-0.428***	-0.217***	-0.260***
	(0.099)	(0.082)	(0.072)	(0.061)
HC	0.0774***	0.131***	0.00670	0.0728***
	(0.019)	(0.024)	(0.015)	(0.021)
FLM	0.143			
	(0.273)			
FDI*FLM	0.128**			

	(0.063)			
MW		-0.122		
		(0.103)		
FDI*MW		0.484***		
		(0.154)		
HFR			0.497***	
			(0.173)	
FDI*HFR			0.0217*	
			(0.0131)	
HR				-0.125
				(0.103)
FDI*HR				0.235*
				(0.141)
Constant	-6.182*	-2.048	-2.033	-4.578
	(3.137)	(3.177)	(2.041)	(2.883)
Sargan test	13.999	29.975	22.614	22.151
	(0.729)	(0.0795)	(0.205)	(0.225)
AR(1)	-3.156	-3.081	-5.070	-3.129
	(0.001)	(0.002)	(0.000)	(0.001)
AR(2)	-0.277	-0.481	-0.717	-1.442
	(0.781)	(0.630)	(0.432)	(0.149)
Marginal Effect				
Mean	0.1287**	0.3718***	0.776*	0.2558*
Minimum	0.851**	0.673***	0.689**	0.1269***
Maximum	0.1688**	0.5516**	0.833***	0.3152**

Note: Stata xtdpdsys command is used for all model estimation. Parentheses contain the standard errors, while p-values for the Sargan test, AR(1), and AR(2) are reported separately. The levels of statistical significance are denoted as follows: *** at 1%, ** at 5%, and * at 10%. Although time dummies are included in the analysis, they are not reported here to conserve space.

To ensure the robustness of our earlier findings, we conducted two sensitivity checks. We used FDI stock, which covers data for 123 economies, as an alternative for evaluating FDI in the first check. The empirical results are presented in Table 4, which indicates that the coefficients of the interaction variable are statistically significant and positive in all models. This consistency underscores the pivotal role of FLM in amplifying the growth effects of FDI. Additionally, the control variables display statistical significance and align with the expected signs. The bottom section of the table presents the calculated marginal effects, all of which are positive and significant. Moreover, the validity of our findings is substantiated by the post-estimation tests, which yielded p-values greater than 0.05.

Table 0
FDI Stock Robustness Verification through UNCTAD Data
(N = 123 countries; Sample Period = 2000– 2018)

	FLM	MW	HFR	HR
Variables	Model 1B	Model 2B	Model 3B	Model 4B
$GDP_{i,t-1}$	0.170***	0.115**	0.230***	0.351***
	(0.042)	(0.044)	(0.039)	(0.047)
FDI	0.271***	0.189*	0.147*	0.1000
	(0.088)	(0.111)	(0.082)	(0.123)
PC	0.181***	-.047**	0.142***	0.185***
	(0.037)	(0.021)	(0.037)	(0.049)
TO	0.00758	0.0323***	-0.00398	-0.0287***
	(0.006)	(0.007)	(0.007)	(0.008)
GCE	-0.304***	-0.505***	-0.185***	0.246***
	(0.075)	(0.073)	(0.067)	(0.075)
SPEG	-0.00751	0.0821***	0.0134	0.0469**
	(0.018)	(0.021)	(0.015)	(0.019)
FLM	-0.523**			
	(0.237)			
FDI*FLM	0.0166*			
	(0.010)			
MW		-0.196**		
		(0.088)		
FDI*MW		0.0497**		
		(0.021)		
HFR			0.535***	
			(0.172)	
FDI*HFR			0.0400**	
			(0.016)	
HR				-0.174*
				(0.097)
FDI*HR				0.0327***
				(0.011)
Constant	6.337*	2.022	-1.573	-7.194*
	(2.698)	(2.516)	(2.316)	(3.173)
Sargan test	27.349	25.603	21.083	16.785
	0.072)	(0.109)	0.275)	(0.537)
AR(1)	-3.525	-3.802	-5.137	3.034
	(0.000)	(0.000)	(0.000)	(0.002)
AR(2)	0.335	0.581	-0.820	0.283
	(0.737)	(0.560)	(0.411)	(0.78)
Marginal Effect				
Mean	0.376***	0.501***	0.334*	0.346***
Minimum	0.319*	0.189**	0.204*	0.165*
Maximum	0.428***	0.686***	0.469**	0.426***

Note: Stata xtdpdsys command is used for all model estimation. Parentheses contain the standard errors, while p-values for the Sargan test, AR(1), and AR(2) are reported separately. The levels of statistical significance are denoted as follows: *** at 1%, ** at 5%, and * at 10%. Although time dummies are included in the analysis, they are not reported here to conserve space.

We conducted a comparative analysis in the second robustness check by dividing the sample into developed and developing countries. Models 5 to 8, which focus on developing countries, reveal that the coefficients for the interaction effect of FDI and FLM (FDI*FLM) are positive and significant. This indicates that flexible labour markets in developing countries significantly enhance the growth effect of FDI. In contrast, models 9 to 12, which examine developed countries, show that while the interaction coefficients for various FLM sub-indicators are also positive, they exhibit a higher level of significance compared to developing countries. Furthermore, the magnitude of the estimated coefficients in developed countries is larger. This implies that labor market flexibility has a more significant influence on the growth effects of FDI in developed economies.

The findings indicate that flexible labor markets are beneficial for both developed and developing countries, as they enhance the ability to attract FDI and optimize its growth effects. However, the degree of this benefit is greater in developed countries, likely due to their more stable economic and institutional environments, which provide a more conducive setting for leveraging FDI advantages.

Table 5
Robustness Checks (Developing And Developed Countries)

87 Developing Countries					**36 Developed Countries**			
Variables	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11	Model 12
$GDP_{,t-1}$	0.182***	0.0976*	0.238***	0.141**	0.211***	0.686***	0.164**	0.959***
	(0.058)	(0.040)	(0.037)	(0.043)	(0.049)	(0.073)	(0.039)	(0.096)
FDI	0.540	0.100***	0.154***	0.0847*	0.965**	0.698	0.949*	0.3739**
	(0.49)	(0.037)	(0.048)	(0.044)	(0.501)	(1.049)	(0.489)	(0.1738)
PC	0.116***	0.0738***	-0.0448**	0.0802**	0.386***	-0.610***	0.375**	-0.795***
	(0.035)	(0.029)	(0.027)	(0.038)	(0.109)	(0.047)	(0.116)	(0.035)
TO	-0.0132	0.0253***	-0.031***	-0.0187**	-0.0382**	0.0213	-0.0394**	0.00611
	(0.009)	(0.007)	(0.008)	(0.009)	(0.018)	(0.016)	(0.016)	(0.021)

GE	0.119	-0.151*	0.147**	0.0498	0.799***	0.159	0.906***	0.317
	(0.112)	(0.083)	(0.075)	(0.064)	(0.171)	(0.229)	(0.195)	(0.174)
HC	-0.0222*	0.0661***	0.0305*	0.0842***	0.0866**	0.0327	0.0706**	0.0988*
	(0.014)	(0.018)	(0.016)	(0.019)	(0.041)	(0.051)	(0.034)	(0.088)
FILM	0.436				0.0344			
	(0.340)				(0.387)			
FDI*FLM	0.00732*				0.011**			
	(0.004)				(0.0057)			
MW		0.0353				0.102		
		(0.091)				(0.176)		
FDI*MW		0.0231***				0.0467***		
		(0.005)				(0.0106)		
HFR			0.213				0.698**	
			(0.171)				(0.291)	
FDI*HFR			0.0307***				0.150***	
			(0.004)				(0.0089)	
HR				-0.277**				0.411***
				(0.138)				(0.091)
FDI*HR				0.0100**				0.0635***
				(0.005)				(0.0120)
Constant	-1.207	-6.122**	-1.476	-9.778***	23.052***	1.53	21.25**	17.47*
	(2.578)	(2.310)	(2.237)	(2.758)	(5.073)	(6.905)	(3.96)	(9.96)
Sargan test	24.954	19.107	20.324	19.062	20.315	12.503	17.621	17.245
	(0.126)	(0.450)	(0.314)	(0.210)	(0.062)	(0.4061)	(0.127)	(0.140)
AR(1)	-2.57	-2.977	-2.752	-1.894	-2.407	-1.852	-2.489	-1.862

	(0.01)	(0.002)	(0.005)	(0.058)	(0.016)	(0.0640)	(0.012)	(0.063)
AR(2)	0.405 (0.685)	1.129 (0.258)	1.458 (0.145)	1.773 (0.076)	1. 34 (0.182)	1.7723 (0.0763)	1.226 (0.220)	1.365 (0.172)
Marginal Effect								
Mean	0.0585**	0.0244**	0.0301***	0.0162	1.031***	0.1537	1.015**	0.819**
Minimum	0.0560*	0.0100	0.0197	0.0104*	0.995**	0.136	0.971**	0.579**
Maximum	0.0608*	0.0331	0.0401***	0.0185	1.057	1.168	1.069	1.008**

Note: Stata xtdpdsys command is used for all model estimation. Parentheses contain the standard errors, while p-values for the Sargan test, AR(1), and AR(2) are reported separately. The levels of statistical significance are denoted as follows: *** at 1%, ** at 5%, and * at 10%. Although time dummies are included in the analysis, they are not reported here to conserve space.

These results align with the findings of Nordin et al (2019), who also identified a significantly more robust relationship between FLM and FDI growth in developing nations. Flexible labour markets make both developed and developing countries more attractive to foreign investors. Investors favour environments that allow for effective labour management and cost control. In developed countries, stable economies and institutions provide investors with a predictable and reliable environment. Additionally, better infrastructure enhances business efficiency, further promoting labour market flexibility.

Conversely, despite facing more volatile economic conditions and less developed infrastructure, developing countries are still capable of attracting significant foreign direct investment. It is primarily due to their lower labour costs and the advantages of flexible labour markets, which allow firms to adapt more swiftly to economic changes. The ability to quickly adjust labour practices in response to market demands is a critical factor in attracting and retaining foreign investment in these regions.

Conclusion

Numerous studies have investigated the relationship between FDI and economic growth, producing diverse results. Recent studies indicate that the absorptive capacity of recipient countries plays a crucial role in explaining these inconsistencies. This paper examines a particular dimension of absorptive capacity: the flexibility of FLM. Specifically, we examine whether the flexibility of a host country's labour market influences the marginal impact of FDI on economic growth. Using panel data from 123 countries spanning 2000 to 2018, several critical findings emerge from our analysis.

First, in line with existing research, we observe that FDI directly impacts GDP growth. This confirms the consensus that FDI is beneficial for economic expansion. Second, we establish that FLM independently promotes long-term economic growth in the countries studied. Among the various dimensions of labour market regulations, work hour rigidity has the most significant negative impact. This suggests that stringent Labour laws impose higher

adjustment costs on multinational corporations (MNCs), leading to reduced investment levels. Our empirical analysis reveals that the positive impact of FDI on economic growth depends on the degree of flexibility within the labor market. MNCs play a substantial role in driving economic growth in countries with more adaptable labor markets. These countries provide an environment that facilitates the adoption of new technologies and other benefits associated with FDI. This explains why some nations experience greater advantages from FDI and affiliations with high-performing foreign multinationals while others do not. Although FLM has not been widely considered in previous research, our findings highlight its critical role in a country's absorptive capacity. In summary, this paper illustrates that the positive effect of FDI on economic growth is significantly moderated by the flexibility of the labor market.. Countries with more adaptable labour markets are better positioned to leverage FDI benefits, making labour market reform a key strategy for enhancing the overall economic impact of foreign investments.

Policymakers should consider the costs of FDI-attracting policies alongside efforts to improve labour market standards. Policies designed to attract FDI should be implemented in tandem with those enhancing labour market flexibility to maximize economic benefits. Labour market deregulation, particularly easing restrictions on temporary employment contracts, can encourage firms to invest in new productive capital, thereby boosting the economy's long-term potential, output, and overall well-being. One effective policy is labour market deregulation, and it is helpful to examine how it affects foreign direct investment. By encouraging firms to invest in new productive capital, labour market flexibility measures like easing temporary employment contract restrictions can boost the economy's long-term productive potential, output, and economic well-being.

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Apendex A: A key variable and Countries list

Country	GDP	FDI	FLM Index	Country	GDP	FDI	FLM Index
Albania	4.337	6.987	6.434	Korea, Rep.	4.098	0.955	6.156
Algeria	6.172	1.083	5.114	Kuwait	3.480	0.370	7.409
Argentina	1.742	2.055	5.233	Latvia	3.932	2.519	5.520
Armenia	6.395	4.702	7.312	Lithuania	4.162	8.869	5.769
Australia	2.953	3.562	7.139	Luxembourg	3.139	17.093	3.888
Austria	1.732	1.841	6.518	Madagascar	3.008	4.744	4.767
Azerbaijan	8.307	14.673	7.396	Malawi	4.287	2.866	6.650
Bahrain	4.288	4.027	7.539	Malaysia	5.068	3.150	8.276
Bangladesh	6.223	0.913	7.566	Mali	4.858	2.755	6.035
Belgium	1.702	10.919	5.895	Malta	4.726	90.211	6.245
Belize	3.493	6.756	7.191	Mauritius	4.097	2.643	7.000
Benin	4.614	0.928	6.252	Mexico	2.194	2.845	6.045
Bolivia	4.264	2.982	3.964	Morocco	4.107	2.846	4.081
Botswana	4.235	2.725	8.124	Mozambique	6.439	14.620	4.475
Brazil	2.415	3.326	3.701	Namibia	3.733	5.160	7.427
Bulgaria	3.592	8.078	5.945	Nepal	4.719	0.219	6.113
Burundi	2.443	0.543	6.973	Netherlands	1.618	17.497	6.050
Cameroon	4.238	1.730	6.857	New Zealand	2.895	0.964	7.524
Canada	2.703	3.212	7.741	Nicaragua	2.864	6.098	5.204
Central African Republic	1.413	1.364	4.628	Niger	5.229	4.164	3.623
Chad	6.281	7.149	5.822	Nigeria	5.471	1.476	8.505
Chile	3.876	6.418	6.632	North Macedonia	2.835	4.665	6.024
China	8.945	3.031	7.478	Norway	1.642	1.852	4.573
Colombia	3.721	3.708	7.098	Oman	3.238	3.019	6.353
Congo, Dem. Rep.	4.885	4.255	4.724	Pakistan	4.556	1.153	4.876
Congo, Rep.	2.012	13.969	3.429	Panama	5.816	8.327	3.342
Costa Rica	3.894	5.612	4.845	Papua New Guinea	3.629	1.693	7.655
Cote d'Ivoire	3.673	1.555	5.754	Paraguay	3.511	1.059	4.727
Croatia	2.063	3.528	4.726	Peru	4.815	3.815	5.565
Cyprus	2.796	66.816	6.905	Philippines	5.526	1.690	6.397
Czech Republic	2.967	4.874	7.187	Poland	3.936	3.373	6.207
Denmark	1.465	2.222	8.118	Portugal	1.010	3.984	4.360
Dominican Republic	5.159	3.797	5.951	Romania	4.081	3.668	5.249
Ecuador	3.325	1.139	4.673	Russian Federation	3.742	2.066	5.701
Egypt, Arab Rep.	4.424	2.960	7.188	Rwanda	7.748	2.105	7.358
El Salvador	2.026	2.315	5.549	Senegal	4.312	2.106	3.566
Estonia	4.078	29.478	5.227	Sierra Leone	5.721	7.064	5.751

Fiji	2.490	7.645	7.396	Singapore	5.193	19.471	9.013
Finland	1.641	2.801	5.247	Slovak Republic	3.837	2.490	6.211
France	1.451	2.155	3.205	Slovenia	2.612	2.068	3.907
Gabon	2.095	4.526	6.282	South Africa	2.583	1.576	5.010
Georgia	5.367	8.732	7.452	Spain	1.903	3.281	4.173
Germany	1.379	2.714	5.595	Sri Lanka	5.086	1.344	7.332
Ghana	6.061	5.049	7.656	Sweden	2.315	3.324	5.274
Greece	0.382	0.852	4.579	Switzerland	2.138	3.113	7.995
Guatemala	3.438	0.874	5.048	Tanzania	6.275	3.149	5.713
Guinea-Bissau	3.035	1.498	5.533	Thailand	4.083	2.809	7.050
Guyana	2.868	8.497	7.549	Togo	3.699	2.907	5.021
Haiti	2.063	0.776	7.326	Trinidad and Tobago	3.013	2.621	7.970
Honduras	4.134	5.724	4.265	Tunisia	3.199	2.988	7.027
Hong Kong SAR, China	3.725	29.164	8.839	Turkey	4.943	1.618	5.690
Hungary	2.825	4.369	5.657	Uganda	6.248	3.525	8.271
Iceland	3.350	3.896	6.917	Ukraine	2.650	3.681	6.095
India	6.594	1.616	6.352	United Arab Emirates	4.064	2.777	7.829
Indonesia	5.264	1.276	5.769	United Kingdom	1.764	4.449	7.568
Iran, Islamic Rep.	2.277	0.894	6.598	United States	2.188	1.766	8.659
Ireland	5.293	21.715	7.576	Uruguay	2.444	4.243	5.956
Israel	3.472	3.983	7.073	Vietnam	6.509	5.583	7.518
Italy	0.456	1.288	5.145	Zambia	5.891	5.139	6.568
Jamaica	0.910	5.174	7.783	Zimbabwe	0.992	1.590	5.554
Japan	0.862	0.278	7.001				
Jordan	4.312	7.341	7.026				
Kenya	4.829	1.155	7.342				