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HOW GOVERNMENT EXPENDITURE AND TRADE OPENNESS AFFECT FOREIGN DIRECT INVESTMENT: EVIDENCE FROM DYNAMIC PANEL ESTIMATIONS

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ARTICLE INFO	ABSTRACT
<p>DOI: 10.52932/jfm.v15i8.503</p> <p><i>Received:</i> March 16, 2024</p> <p><i>Accepted:</i> May 07, 2024</p> <p><i>Published:</i> November 25, 2024</p> <p>Keywords: Foreign direct investment; Government expenditure; GMM; High-income nations; Middle-income nations; Trade openness.</p> <p>JEL codes: B17, B27, F43</p>	<p>The main objective of this study is to examine the effects of government expenditure and trade openness on foreign direct investments. Our sample includes 992 annual observations from 32 high and middle-income countries from 1990 to 2020. We employ the dynamic system Generalized Method of Moments to overcome heteroskedasticity and endogeneity issues. Our findings suggest that trade openness and government expenditures positively affect FDI inflows. The study recommends that the implementation of reasonable macroeconomic policy, along with the planning of investment strategies and some government interventions, will improve the efficiency of receiving foreign investment flows into the country.</p>

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1. Introduction

Many research papers have identified the factors influencing FDI inflows, and many factors have been studied in different countries. Asongu et al. (2018) show that studying factors, which include GDP, infrastructure, inflation, and trade openness, affect FDI, as evidenced by BRICS and MINT countries from 2001 to 2011. The study recommends improving the market size and trade policies to attract FDI. Kumari and Sharma (2017) show that infrastructure, inflation, trade openness, market size, and interest have a robust effect on FDI inflows. Trade openness, government expenditure, and other factors have recently affected the country's FDI. Government expenditure increases dramatically to support production and trading activities. Trade openness is associated with public expenditure, including infrastructure and labor developments. Furthermore, Kueh et al. (2009) suggest a long-run causality between the government expenditure and trade openness of all ASEAN-4 countries.

Trade openness encourages foreign investors to invest within the host country by eliminating alternate regulations, import obligations, and quotas (Hashmi et al., 2020). The results are consistent with those of Lindelwa Makoni (2018). Using the OLS model and The Breusch-Pagan test, trade openness correlates positively with direct investment flows and is statistically significant. The study used data from nine African countries between 2009 and 2016. The openness of capital induced by FDI increases the confidence of overseas traders in their

ability to transfer their income from abroad to the country.

Numerous studies have examined the relationship between government expenditure and FDI. Othman et al. (2018) indicate that government expenditure undoubtedly contributes to FDI ultimately inflows into the ASEAN, India, and China economies. Government expenditure can promote economic growth, good economic efficiency, higher productivity, and foreign direct investment. However, excessive government expenditure can also lead to high deficits and debt problems. FDI inflows are affected by the size of government expenditure, as government expenditure is an essential factor in any government. Understanding the impact of public expenditure on FDI inflows is very important for economic growth. Therefore, it becomes imperative to study public expenditure to increase FDI inflows into the country as they have great potential as one of the drivers of FDI (Othman et al., 2018).

The two groups of high-income and middle-income countries exhibit notable differences in government expenditure. Figure 1 shows that the World Bank's 1990-2020 data shows that high-income countries have higher government expenditure than middle-income countries. The government expenditure for high-income countries is around 17.23% to 19.1% of the total GDP. In contrast, the government expenditure for middle-income countries is around 10.77% to 11.73% of their total GDP.

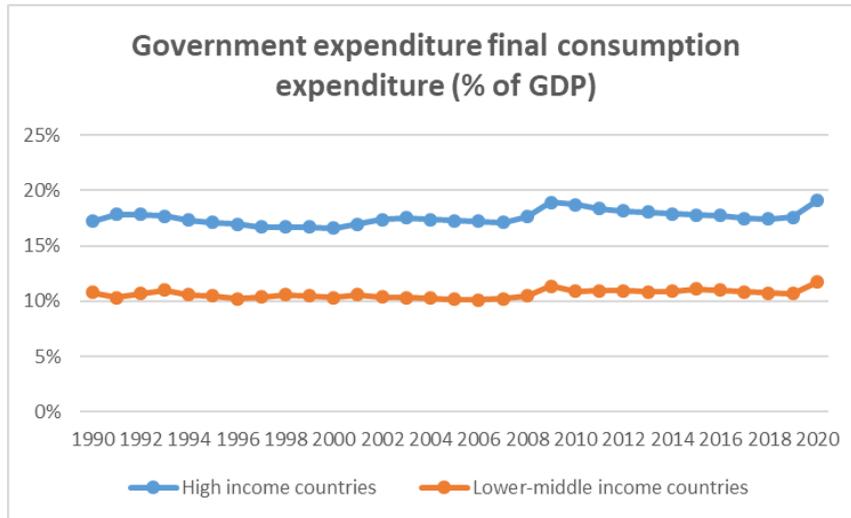


Figure 1. Government expenditure (% of GDP) of high-income countries and middle-income countries in the period from 1990-2020

Source: *data.worldbank.org*

The factor of trade openness of the two groups of countries is also different. The factors of trade openness of the two groups of countries also differ in each period. Figure 2 shows World Bank 1990-2020 data showing that high and middle-income countries have variable trade openness. However, there are times when the trade openness of middle-income countries is higher than that of high-income countries in

a short time, such as 2000-2006. However, the trade openness of high-income countries is almost higher than middle-income countries. The government expenditure for high-income countries is around 40.78% to 55.35% of the total GDP. At the same time, the trade openness for middle-income countries is around 36.48% to 46.63% of their total GDP.

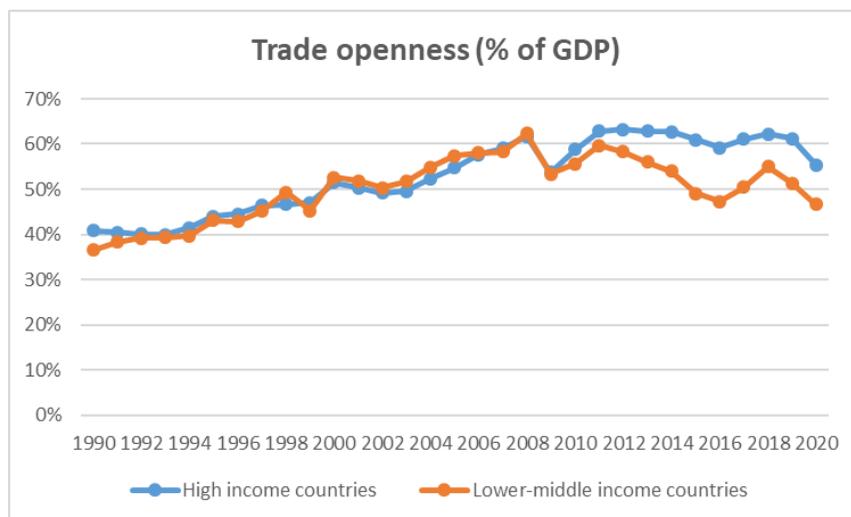


Figure 2. Trade openness (% of GDP) of high-income countries and middle-income countries in the period from 1990-2020

Source: *data.worldbank.org*

The two groups' FDI is also different from 1990-2020. Specifically, FDI in this period ranged from 1,17% to 1.56% for high-income

countries and 0.39% to 1.95% for middle-income countries (Figure 3).

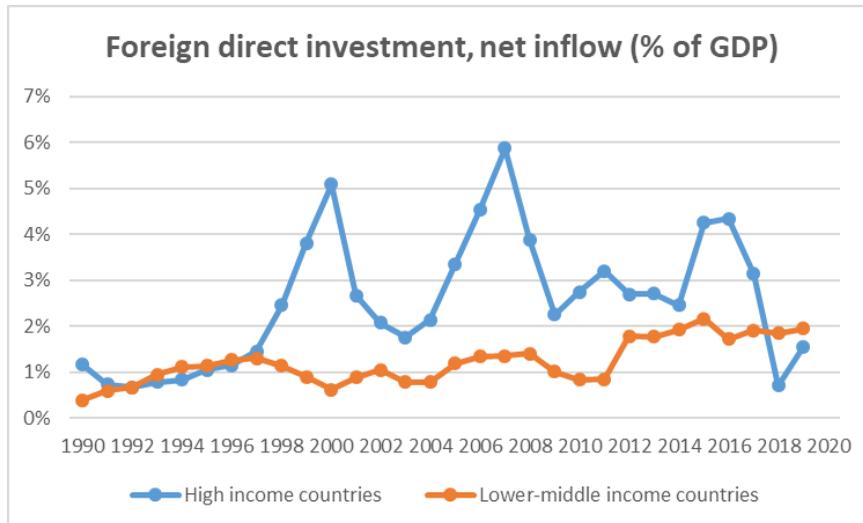


Figure 3. Foreign direct investment of high-income countries and middle-income countries in the period from 1990-2020

Source: *data.worldbank.org*

We employ the dynamic system Generalized Method of Moments (GMM) to analyze an unbalanced panel with 32 high and middle-income countries from 1990 to 2020. Our finding reports that government spending and trade openness positively attract FDI inflow in high and middle-income countries. The research result supports the Hypothesis that controls of government expenditure will create opportunities to promote FDI inflows, while opportunities in a country's economy benefit more from the effects of growth FDI. Trade openness is an opportunity to attract FDI flows. Trade openness helps expand broad market access by eliminating trade barriers that can increase a country's export relationships with other countries and increase imports; Moreover, the results indicate that telecommunication infrastructure, inflation, wages, private credit, domestic investment, and financial development significantly affect FDI inflow. Infrastructure, wage, domestic investment, and

financial development positively increase FDI inflow. However, inflation and private credit have a negative relationship with FDI inflows.

The rest of our paper is organized as follows: Section 2 describes the review of relevant literature; Section 3 describes the data collection process and selected methods; Section 4 discusses the empirical results. Section 5 is the conclusion.

2. Literature review

2.1. Foreign Direct Investment (FDI)

For previous studies, dependent variables were used, such as FDI inflow (Rogmans & Ebbers, 2013), net FDI inflows (Jadhav, 2012, Duong et al., 2022; Le et al., 2023), the ratio of FDI inflows to GDP (Lehnert et al., 2013), and the ratio of net FDI inflows to GDP (Asiedu, 2002). The explanatory variables used such as government expenditure (Oke et al., 2012), trade openness (Djulius, 2017), telecom

infrastructure (Pradhan et al., 2017), inflation (Mugableh, 2015), financial development (Aristyانيا & Wibowob, 2020), wage (Lawson et al., 2019), domestic investment (Ranjan & Agrawa, 2011), and private credit (Erdogan & Unver, 2015).

2.2. The nexus between government expenditure and FDI

Our study is based on the Investment Development Path (IDP) framework developed by Narula and Dunning (2010). The IDP comprises five stages representing different development levels in both developing and developed countries (Othman et al., 2018; Ibrahim & Alagidede, 2018). In the IDP initial stages (stages one and two), FDI flows are typically low as the economy is still in its early development phase. At this point, government spending plays a crucial role. Productive investments in infrastructure such as transport networks, information and communication technology, energy infrastructure, education, health, and human capital development can significantly contribute to economic progress (Groh & Wich, 2012). As the domestic economy becomes more productive and competitive due to government facilitation, it attracts cross-border investments, leading to increased FDI flows in stages three and four. Eventually, in stage five of the IDP, the economy's national income further increases, and firms become self-sufficient to the extent that they can increase FDI with less government intervention. Therefore, during the rapid development phases of the first three stages, productive government expenditures can attract significant FDI inflows.

Moreover, according to Dunning's eclectic paradigm (Dunning, 1991), firms in the home economy engage in FDI outflows due to 'location' advantages in the host economy. This suggests that location advantages act as pull factors in attracting FDI inflows. One such advantage could be a better institutional environment,

including improved monitoring of business transactions and ease of doing business. Thus, higher government expenditures directed toward strengthening institutional quality can also act as pull factors behind FDI inflows.

In addition, promoting FDI in a country depends largely on the activities and control of the public sector. Human resource training geared towards practical orientation contributes to financial integration with international locations worldwide. Oke et al. (2012) using GMM estimation show that government expenditure and other independent variables are positive and essential predictors of increased FDI in Nigeria. Similarly, findings from Ordinary Least Square analysis for 2001-2016 in six ASEAN countries by Abdul Hadi et al. (2018) demonstrate that government expenditure has a practical impact on FDI.

However, in the short term, apart from raising interest rates, government spending in areas where the crowding-out effect is not incentivizing to increase foreign investment, as well as domestic investment, negatively affects FDI in Indonesia (Saimul, 2020). Iwegbunam and Robinson (2019) used the ADF method and found that a negative relationship exists between overall government expenditure and net FDI inflows, as well as total fixed capital formation in South Africa. Research results by Benedicta (2017) indicated that FDI has no significant impact on government expenditure. A high budget deficit indicates increased government spending and financing, which reduces government savings and redirects investment funds, thus failing to create opportunities for foreign investors and having no significant impact on FDI. To foster business activities and financial management, the government should create an excellent environment to attract foreign investment and encourage more private investments.

Building on the eclectic paradigm theory, the IDP theory, and Abdul Hadi et al. (2018), we propose hypothesis follow:

Hypothesis H1: There is a positive relationship between government expenditure and FDI.

2.3. The nexus between trade openness and FDI

Some prior studies argue that trade openness enhances competition, leading to increased efficiencies, technical advancements, product improvements, reduced production costs, economic growth, and improved resource allocation, ultimately reducing corruption (Asiedu & Lien, 2004; Liargovas & Skandalis, 2012; Meidayati, 2017; Kumari & Sharma, 2017; Djulius, 2017; Hashmi et al., 2020; Duong et al., 2022). Investing in another country is influenced by various factors. Dunning and Lundan (2008) identified four main reasons for FDI inflows from industrialized countries into developing economies: market-seeking, efficiency-seeking, rent-seeking, and strategic asset-seeking. Trade openness encourages export-oriented FDI, while trade restrictions attract “tariff-jumping” FDI, primarily aimed at capitalizing on existing domestic markets. The effect of variations in openness on FDI inflows diverges depending on the incentive for engaging in FDI activities. Foreign firms aiming to expand their market may choose export over FDI when faced with high openness, low restrictions, and low trade costs. Thus, a high degree of openness can be associated with a low level of FDI inflow. However, market-seeking FDI can also serve nearby markets, turning the host country into an export platform, leading to a positive effect of openness on FDI inflows. Foreign investors seeking skilled or semi-skilled labor or new technology at lower costs than in their home country engage in efficiency-seeking investments. Higher openness positively affects the investments of such investors. Empirical studies consistently show a positive association between trade openness and FDI inflows. Djulius

(2017) and Duong et al. (2022) found that trade openness significantly impacts FDI in the short term, indicating that an open economy attracts higher FDI inflows. Liargovas and Skandalis (2012) demonstrated a positive relationship between trade openness and FDI inflows in developing countries. Meidayati (2017), Kumari and Sharma (2017), and Hashmi et al. (2020) showed that trade liberalization has both short and long-term positive effects on FDI inflows into Pakistan. Free trade agreements and flexible trade policies attracted FDI, especially after the 1990s. However, Khan and Adnan Hye (2014) and Tahmad and Adow (2018) reported that trade openness discourages FDI inflows in Pakistan due to higher energy prices and taxes. The negative effect of trade openness on FDI can also be attributed to the influence of risk and uncertainty on investor decisions. Wickramarachchi (2019) found an insignificant relationship between trade openness and FDI in Sri Lanka. Similarly, Vijayakumar et al. (2010) and Shah and Khan (2016) found an insignificant effect of trade openness on FDI inflows in BRICS countries. Based on the above analysis, we propose the hypothesis as follow:

Hypothesis H2: There is a positive relationship between trade openness and FDI.

2.4. Other determinants of FDI inflows

Pradhan et al. (2017) found that telecommunications infrastructure positively influenced FDI inflows. Denser telecommunications infrastructure contributes to delivering information and communication technologies, products, and services that spawn new sources of growth to attract FDI. Similarly, Meidayati (2017) shows that telecommunication development positively affects FDI inflows due to higher productivity. Mugableh (2015), Kumari and Sharma (2017) indicate that reducing the inflation rate increases FDI inflows. Multinational corporations will invest in a country with a falling inflation rate.

Lawson et al. (2019) assert that labor costs negatively affect FDI. Vijaya and Kaltani (2007) suggest that a less expensive labor force is a decisive factor in attracting FDI inflows into a country, as some foreign companies want to invest in a country with low salaries. However, Bedi and Cielik (2002) argue that the higher wages in foreign-invested companies attract higher FDI projects in Poland.

The ratio of domestic credit to the private sector to GDP indicates financial development. Anyanwu and Yameogo (2015) found a negative impact of domestic credit on the private sector on FDI in West Africa. Erdogan and Unver (2015) argue that private-sector credit is an essential element that affects the growth in FDI inflows.

Gross fixed capital formation is a country's domestic investment climate proxy. Ullah and Khan (2017) show that domestic investment is the determinant that positively impacts FDI inflows in SAARC, Central Asia, and ASEAN. Similarly, Khan and Adnan Hye (2014) find that gross fixed capital formation positively affects FDI. Hashmi et al. (2020) show that the Short-

run Relation of gross fixed capital formation hurts FDI in Pakistan.

Mugableh (2015) found that the broadest money supply has a high-quality courting with FDI inflows. Aristyana and Wibowob (2020) indicated that the money supply has a positive relationship with FDI inflows and that growth in the money supply will attract further FDI inflows due to an increase, which improves a country's national economic position. However, Boateng et al. (2015) show that a broad money supply negatively impacts FDI inflows.

3. Data and methodology

3.1. Data

Our sample consisted of 32 high and middle-income countries at the time of the study. This paper uses panel data for the period 1990 - 2020. We collect data from Wordbank. We follow Duong et al. (2022) and Le et al. (2023) to remove observations that do not have enough data to estimate the required variables. Our final data sample is an unbalanced panel with 992 annual observations.

Appendix 1

Upper-income countries	Middle-income countries
Australia, Canada, Chile, Denmark, Singapore, France, Germany, Italy, Japan, Korea Rep. Oman, Qatar, Brunei Darussalam, Uruguay. United Arab Emirates	Cambodia, Vietnam, Ecuador, Egypt, Malaysia, India, Jordan, Indonesia, Nigeria, Pakistan, Peru, Philippines, Ukraine, Uzbekistan, Bangladesh, Bhutan, Myanmar, Lao PDR

Our study uses several financial indicators. The definitions of these variables are explicitly

described in Appendix 2.

Appendix 2.

Variables	Notation	Variables description	Data sources
Dependent variable			
Foreign direct investment	FDI	FDI net inflow (% of GDP)	World Bank

Variables	Notation	Variables description	Data sources
Independent variables			
Government expenditure	GOV	General government final consumption expenditure (% of GDP)	World Bank
Trade openness	TRA	(Total imports + Exports)/ GDP (% of GDP)	World Bank
Control variables			
Telecommunication Infrastructure	TELE	Number of telephone lines per 100 people	World Bank
Inflation	INF	Inflation, consumer prices (annual %)	World Bank
Wage	WAG	Waged & Salaried workers, total (% total employment)	World Bank
Private credit	PC	Domestic credit to the private sector (% of GDP)	World Bank
Domestic investment	DI	Gross fixed capital formation (annual % growth)	World Bank
Financial development	MS	Broad money growth (annual %)	World Bank

3.2. Estimate methodology

We first used Ordinary Least Square (OLS), Fixed Effects (FEM), and Random Effects (REM) methods. We also apply the Redundant Fixed Effects, Hausman, and Breusch-Pagan tests to select the most suitable analytical estimator. However, Van Bon (2015) shows bias in the estimated results because the error term is correlated with the explanatory variables. Therefore, we perform the Wald tests to check for possible heteroskedasticity issues. Therefore, to mitigate the heterogeneity and endogeneity issues, we follow Duong et al. 2022, Le et al. 2023, Van Bon (2015), and Saini and Singhania (2018) to implement the dynamic system GMM to mitigate the above issues. The GMM estimator shows higher efficiency than standard panel models of fixed and random effects or synthetic OLS estimators (Duong et al., 2022; Le et al., 2023).

3.3. Empirical Model Construction

This paper examines FDI inflows by combining government expenditure, trade

openness, and control variables. We follow Othman et al. (2018) to build a model (1) to consider the influence of GOV and control variables on FDI. Moreover, we follow Hashmi et al. (2020) to build a model (2) to examine the influence of TRA and control variables on FDI. We then combine TRA and GOV with control variables (3) to see if the influence of these two variables on FDI changes.

$$FDI_{it} = \beta_0 + \beta_1 GOV_{it} + \beta \Sigma X_{it} + \alpha_i + \alpha_t + \varepsilon_{it} \quad (1)$$

$$FDI_{it} = \beta_0 + \beta_3 TRA_{it} + \beta \Sigma X_{it} + \alpha_i + \alpha_t + \varepsilon_{it} \quad (2)$$

$$FDI_{it} = \beta_0 + \beta_1 GOV_{it} + \beta_2 TRA_{it} + \beta \Sigma X_{it} + \alpha_i + \alpha_t + \varepsilon_{it} \quad (3)$$

Where: α_i is the unit of the cross-section representing the countries in the sample and α_t denotes the time dimension, FDI denotes the net inflows Foreign direct investment as a percentage of Gross Domestic Product (GDP) of country i in year t (Anyanwu & Yameogo, 2015). The independent variables are government expenditure (GOV_{it}) and trade openness (TRA_{it}) of country i at year t .

Government expenditure is proxied by general government final consumption expenditure (Othman et al., 2018). We use trade openness as a policy variable, the total value of exports and imports per GDP (Makoni, 2018; Meidayati, 2017). X is a matrix of control variables. $TELE_{it}$ shows the number of telephones per 100 people, a proxy for infrastructure (Pradhan et al., 2017). INF_{it} denotes the rate of inflation measured by the annual percentage change in consumer prices (Mugableh, 2015). WAG_{it} is the total wage and salaried workers (Lawson

et al., 2019). PC_{it} is an indicator of financial development proxied by domestic credit to the private sector (Anyanwu & Yameogo, 2015). DI_{it} is the domestic investment proxied by gross fixed capital formation (Ullah & Khan, 2017). MS_{it} is financial development proxied by the broad money supply (Hashmi et al., 2020). All variable definitions are reported in the appendix B.

4. Empirical results

4.1. Descriptive statistics

Table 1. Descriptive statistics of variables

	Mean	Median	95%	5%	Std. Dev.	N
FDI	2.833	1.903	10.91	0.044	2.851	992
GOV	14.67	13.70	25.06	5.176	5.976	992
TRA	71.67	61.19	179.2	22.98	39.24	992
TELE	20.01	12.26	59.04	0.318	19.71	992
INF	5.840	3.469	25.55	-0.110	6.431	992
WAG	60.87	69.88	94.62	13.98	26.76	992
PC	58.37	43.45	154.03	6.537	43.34	992
DI	4.888	4.382	23.03	-12.2	8.834	992
MS	15.37	13.05	42.38	0.528	11.35	992

Table 1 shows that the average foreign direct investment (FDI) is 2.833%, with a standard deviation of 2.851% and a maximum of 10.91%. Besides, government expenditure (GOV), trade openness (TRA), telecommunication infrastructure (TELE), inflation (INF), waged and salary (WAG), private credit (PC), domestic investment (DI), and financial development

(MS) have a mean value of 14.67%, 71.67%, 20.01%, 5.840%, 60.87%, 58.37%, 4.888%, and 15.37%. The lowest standard deviation is observed for FDI and the highest for PC among all the variables. Except for INF and DI, all the variables are positive minimum.

4.2. Pearson correlation matrix

Table 2. Pearson correlation matrix

	FDI	GOV	TRA	TELE	INF	WAG	PC	DI	MS	VIF
FDI	1									
GOV	-0.16	1								1.95
TRA	0.54	0.04	1							1.37
TELE	0.01	0.50	0.05	1						2.69
INF	-0.09	-0.31	-0.23	-0.39	1					1.50
WAG	0.06	0.66	0.28	0.69	-0.38	1				3.25
PC	0.12	0.31	0.32	0.66	-0.38	0.61	1			2.35
DI	0.14	-0.21	0.11	-0.19	0.01	-0.20	-0.21	1		1.13
MS	0.09	-0.31	-0.09	-0.36	0.47	-0.43	-0.38	0.17	1	1.47

This table shows the Correlation Matrix of the factors affecting FDI inflows. Table 2 uses the Pearson correlation coefficient to quantify the linear relationship between two variables. Each cell in the table shows the correlation between two specific variables. The results show that most of the pairs of variables have a correlation coefficient greater than 0, which indicates that most of these variables have a

positive linear relationship. We examine the variance inflation factors (VIF) to test the collinearity. The maximum value of VIF is 3.25 (less than 5). Therefore, collinearity is not a significant issue in our results (Le et al., 2023; Tran et al., 2023).

4.3. The Impact of government expenditure and trade openness on FDI

Table 3. Regression results using FEM

Variable	Model 1		Model 2		Model 3	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
GOV	-0.040	0.171			-0.04***	0.145
TRA			0.020***	<0.001	0.020***	<0.001
TELE	0.080***	<0.001	0.070***	<0.001	0.070***	<0.001
INF	-0.020	0.129	-0.020	0.122	-0.020*	0.079
WAG	0.090***	<0.001	0.070***	<0.001	0.070***	<0.001
PC	0.010***	0.074	0.0003	0.913	0.004	0.904
DI	0.030***	<0.001	0.020***	0.001	0.020***	0.002
MS	0.020***	<0.001	0.030***	<0.001	0.020***	<0.001
C	-4.160***	<0.001	-4.980***	<0.001	-4.400***	<0.001
R-squared	0.59		0.60		0.60	
Adjusted R-squared	0.57		0.58		0.58	
F-statistic	36.21		37.44		36.58	
Prob(F-statistic)	<0.001		<0.001		<0.001	
Wald test (prob)	<0.001		<0.001		<0.001	
Hausman test (prob)	<0.001		<0.001		<0.001	
Redundant Fixed Effect test (prob)	<0.001		<0.001		<0.001	
N	992		992		992	

Note: Table 3 shows the regression of factors affecting FDI inflows, calculated using data listed in Appendix B. The ***, **, and * symbols represent the 1%, 5%, and 10% importance levels, respectively.

Table 3 reports the estimation results of determining FDI inflows of the model. The Hausman test has a p-value of 0.000, less than 0.05, so we get the best method to be used is the Fixed Effect Model (FEM). The Redundant Fixed Effect test results also indicate that the FEM is more suitable than OLS. After

employing the required test, we report the Fixed Effect Model (FEM) in Table 3. However, the Wald test suggests that FEM estimations violate the heteroskedasticity assumption, leading to the bias estimations. Therefore, we re-estimate the results by GMM and report the findings in Table 4.

4.4. The estimations from the GMM method

Table 4. Regression results using the two-stage system GMM estimation

Variable	Model (1)		Model (2)		Model (3)	
	Coefficient	Prob.	Coefficient	Prob.	Coefficient	Prob.
FDI(-1)	0.510***	<0.001	0.500***	<0.001	0.5***	<0.001
GOV	0.080**	0.015			0.080***	0.002
TRA			0.010**	0.010	0.010***	<0.001
TELE	0.030**	0.011	0.040**	0.032	0.030**	0.039
INF	0.001	0.815	-0.010	0.157	0.003	0.737
WAG	0.100***	<0.001	0.100***	<0.001	0.100***	<0.001
PC	-0.01***	0.001	-0.010**	0.012	-0.010**	0.011
DI	0.030***	<0.001	0.030***	<0.001	0.030***	<0.001
MS	0.050***	<0.001	0.040***	<0.001	0.040***	<0.001
J-statistic	25.83		24.57		25.24	
Prob(J-statistic)	0.36		0.43		0.34	
Instrument rank	32		32		32	
N	928		928		928	

This table shows the regression of factors affecting FDI inflows, calculated using data listed in Appendix B. The data sample covers 32 countries from 1990 to 2020. The ***, **, and * symbols represent the 1%, 5%, and 10% importance levels, respectively.

Table 4 uses the two-stage system GMM estimation. The model (4) result in the table indicates that the correlation coefficient between Government expenditure and Foreign Investment is positive at 0.079787, showing a positive and highly significant relationship at the 1% level. When the GOV variable increases by 1%, FDI increases by 0.079787%, and vice versa. This result supports Hypothesis 1, which states that controls of government expenditure will create opportunities to promote FDI inflows, while opportunities in a country's economy benefit more from the effects of growth FDI (Oke et al., 2012). However, this result contradicts Saimul (2020) and Benedicta (2017).

As expected, the correlation between trade openness and FDI is positive and significant at the 1% significance level. One percent increase in trade openness increases FDI by 0.013%. This result accepts Hypothesis 2, which states that trade openness is an opportunity to attract FDI flows. Trade openness helps expand broad market access by eliminating trade barriers. Greater openness in exchange presents new funding possibilities and strengthens the hyperlink between local and global markets. This result is consistent with the results of Djulius (2017), Liargovas and Skandalis (2012), Lindelwa Makoni (2018), Meidayati (2017), Kumari and Sharma (2017), and Hashmi et al. (2020). However, this result is not the same as Khan and Hye (2014); Tahmad and Adow (2018) determined a negative relationship between trade openness and FDI inflows, and Wickramarachchi (2019) discovered that trade openness had no significant effect on FDI inflows.

Telecommunication infrastructure is significant at a 5% significance level and positively impacts FDI flow. When telecommunication infrastructure increases by 1%, FDI increases by 0.035%. Extensive and efficient telecommunication infrastructure is essential to conveying information or expertise to all economic agents, delivering statistics and communicate technology services and products in a digital economy, spurring studies, and improving activities. It also helps the company operate more efficiently, globalize the business, and allow transactions without meeting directly. Telecommunication infrastructure is improved to increase the use of modern ICT to enhance FDI inflows. The result aligns with Pradhan et al. (2017) and Meidayati (2017), who show that telecommunication infrastructure significantly and positively correlates with FDI inflows.

The correlation coefficient of inflation is negative, with a correlation of -0.002592. When the variable INF increases by 1%, FDI decreases by 0.002592% and vice versa. The macroeconomic policy will negatively affect FDI in a country with high inflation due to price volatility. This result is consistent with Mugableh (2015) and Kumari and Sharma (2017).

Salary and wages have a statistical significance of 1%, and the correlation coefficient is at a positive level of 0.105536, showing a positive relationship between the variable government expenditure and FDI. When the GOV variable increases by 1%, FDI increases by 0.079787%, and vice versa. Bedi and Cielik (2002) report that increased employee wages contribute to increased FDI.

The domestic credit to the private sector as a ratio of financial development is negative and significant at a 5% significance level. The result represents that when private credit increases by 1%, FDI decreases by 0.011%. This result is consistent with Anyanwu and Yameogo (2015). On the other hand, the low level of domestic

credit to the private sector is a sign that strongly attracts FDI inflows.

A correlation coefficient of 0.029054 and a statistical significance level of 1% indicate a fantastic relationship between domestic investment and FDI. When the variable DI increases by 1%, FDI increases by 0.029054%, and vice versa. When the domestic investment environment can develop in terms of infrastructure, technology, and policies, it will create a driving force to promote foreign investment. The definition of context is the economic conditions of a complex country. Change in the domestic head will reduce FDI inflows. This positive correlation is consistent with the results of Ullah and Khan (2017).

Financial development is positive and significant at the 1% significance level. Financial development here is measured by broad money growth. That means when broad money increases by 1%, FDI inflow increases by 0.045%. An increase in money supply will enhance the economic status of the country as well as increase national liquidity, which ultimately attracts more FDI inflows. As national liquidity increases, financing costs in these countries are expected to be cheaper. This result aligns with Mugableh (2015), Aristyana, and Wibowob (2020). However, the result does not align with Boateng et al. (2015), showing that broad money supply has a negative and insignificant effect on FDI inflows.

5. Conclusion

The main goal of this study is to study the effects of government expenditure and trade openness on FDI using a sample of 32 high and middle-income countries from 1990 to 2020. We employ the GMM regression method to increase estimation efficiency. Our finding indicated that trade openness, government expenditures, telecommunications infrastructure, domestic investment, and financial development

significantly and positively influence FDI. However, the increasing inflation rate has been unfavorable to FDI inflows. This study shows that the macroeconomic policy will negatively affect FDI in a country with high inflation due to price fluctuations. The results also show that rising inflation discourages FDI inflows. Furthermore, the development of private credit means abundant domestic capital, so there may be no need for FDI. The results additionally indicated that domestic credit to the private sector has an extensive and adverse effect on FDI.

Our findings support policymakers in developing plans to attract the net FDI inflow sustainably. When trade becomes more liberalized, government expenditure may be critical to mitigate external risks and defend the nascent domestic industry, supplying a possibility to promote FDI inflows. Conversely, if trade openness is constrained, growth

could be volatile. Therefore, to promote economic growth and increase FDI inflows, openness to trade could be essential alongside numerous government interventions that play a role in stabilizing the economy. The study recommends that implementing a reasonable macroeconomic policy and planning the country's investment strategy will improve the efficiency of receiving foreign investment flows.

Finally, this study has the following limitations. Firstly, the data consists of 992 observations, so a small range of observations could reduce the study's accuracy. Moreover, the GMM estimation may not differentiate the short-term, long-term or response impulses between government spending, trade openness and net FDI inflow. Therefore, future studies may consider implementing time series methodologies to generate valuable insights about this topic.

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