

# **The Nexus between Foreign Direct Investment, Trade Openness, and Economic Growth in Fiji**

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## **Abstract**

**Purpose:** The paper attempts to explore the relationship between foreign direct investment, trade openness, and economic growth in Fiji between 1981 and 2020 both in the short run and long run. More importantly, policies were recommended to promote economic growth and achieve sustainable development for Fiji.

**Methodology:** A panel dataset was gathered from the World Development Indicators to evaluate the association between foreign direct investment, trade openness, and economic growth in Fiji from 1981 to 2020. Further, the Vector Error Correction Model was employed to assess the nexus between foreign direct investment, trade openness, and economic growth of Fiji both in the short run and long run. Lastly, the long-term relationship among these variables was examined by the Johansen cointegration test.

**Findings:** It has been empirically found that GDP per capita and trade openness had significant and positive relationships with foreign direct investment of Fiji in the short run. In the long run, results stated that foreign direct investment had a negative influence on GDP per capita, while trade openness accelerates economic growth of Fiji. The Johansen co-integration test demonstrated that there is a long-term association among foreign direct investment, trade openness, and economic growth in Fiji.

**Expected policy implications:** The article contributes to recommend policies to foster economic growth and achieve sustainable development for Fiji. First, FDI inflows to Fiji should be efficiently used for social and economic development, rather than only focusing on trading and tourism sectors. Positive impacts of FDI inflows on the economy should be encouraged through labor and capital productivity improvement, technology transfer, human capital development, provision of inputs to local industries at a lower cost and strengthening the recipient country's ability to deal with external shocks. Second, trade openness should be promoted since it facilitates economic growth of Fiji in the long term. Trade policies should be considered by the Government of Fiji to reduce dependence on imported commodities such as plant, machinery, and consumables. This may assist this country in terms of narrow down trade deficit as well as enhancing competitive advantages with trading partner countries. Finally, the nexus between FDI, trade openness, and economic growth should be re-examined to efficiently exploit both domestic and external resources for sustainable development in Fiji.

**Keywords:** foreign direct investment, trade openness, economic growth, Fiji

**JEL Codes:** E60, O11, O24

## **1. Introduction**

Trade integration has been known as an essential factor for facilitating economic growth in Pacific Island countries (PICs). Domestic markets in PICs are too small and therefore it is very difficult to exploit economies of scale due to remoted geography of PICs from major global

economic centres. PICs have problems to establish a feasible trade strategy to accelerate growth for the last decade (IMF, 2014).

Prior the Covid-19 pandemic, the Fijian economy presented a remarkable growth between 2010 and 2018 and consequently, income per capita increased up to more than FJ\$13,000 and the unemployment dropped to 4.5 percent. However, its economy, jobs, public finance, and socio-economic conditions was strongly influenced by the Covid-19 pandemic and natural disasters. Therefore, economic growth of Fiji decreased by 17.2 percent in 2020 and 4.1 percent in 2021 (Ministry of Economy, 2022). Foreign direct investment (FDI) of Fiji has a close relationship with the UK, Australia, and New Zealand where investors from these countries play a crucial role in plantation agriculture and services. However, investors from Japan, the Republic of Korea, Singapore, and Malaysia are increasing their importance in mineral exploration, processing of primary products, development of infrastructure, manufacturing, and service industries, but the majority of FDI has been directed towards development of the tourism industry in Fiji for recent years (Gani, 1999).

In Fiji, FDI, especially in the tourism sector presented an impressive growth since 1980s, but shortage of manufacturing-related investment occurs because of political instability, the small domestic economy, and the disruption of the world economy (Makun, 2018). Trade deficit of Fiji accounted for 32 percent in 2020 and 17.5 percent in 2021, respectively due to differences between export growth (5.2 percent) and import growth (11.7 percent). The growth of import value implies the increase of commodity prices and inflation. The export growth was determined by mineral water and crude materials (Ministry of Economy, 2021).

**Table 1. GDP per capita, FDI inflows, and trade openness in Fiji**

<b>Year</b>	<b>GDP per capita (constant 2015 US\$)</b>	<b>FDI inflows (current US\$)</b>	<b>Trade openness (% of GDP)</b>
1981	3,708.10	36,249,750.06	100.47
2020	4,703.58	239,380,737.90	71.74

*Source: World Bank, 2023*

As seen in Table 1, GDP per capita of Fiji increased by about US\$1,000 from about US\$3,700 in 1981 to about US\$4,700 in 2020. FDI inflows to Fiji accelerated 6.6 times for the last four decades (1981-2020), however trade openness of this country dropped about 28 percent for the same period (Table 1).

FDI and trade have been seen as the essential drivers for accelerating economic growth in PICs. Previous studies investigated the nexus between FDI, trade openness, and economic growth in PICs. Gani (1999) assessed FDI in Fiji, while Feeny *et al.* (2014) found that FDI supports growth of PICs. Makun (2018) concluded that imports have an adverse relationship with economic growth in Fiji between 1980 and 2015, but remittances and FDI foster economic growth both in the long run and the short run. Likewise, Makun (2021) argued that external debt discourages economic growth of Fiji over the period 1980-2018. Maiti & Prasad (2012) found that trade openness had a positive and weak influence on economic growth of Fiji between 1970 and 2009. However, none of previous studies examined the association between FDI, trade openness, and economic growth of Fiji. Therefore, the aim of this study is to explore the relationship between FDI, trade openness, and economic growth of Fiji between 1981 and 2020 using the Vector Error Correction Model (VECM). Further, the fundamental contribution of this article is to recommend appropriate policies to boost economic growth and achieve sustainable development for Fiji.

The rest of this paper is structured as follows. The literature review is presented in section 2. Section 3 illustrated the methodology. Results and discussion are discussed in section 4. Finally, section 5 presented the conclusion and policy implications.

## **2. Review of literature**

### **2.1 The relationship between FDI and economic growth**

Asafo-Agyei & Kodongo (2022) examined the nexus between FDI and economic growth of 25 Sub-Saharan Africa countries between 1993 and 2015. They argued that the relationship between FDI and economic growth is nonlinear and FDI supports economic growth in these countries. Demir & Lee (2022) investigated the relationship between FDI and economic growth in the North, the Emerging South, and the South countries for the period 1990-2012. They found that there are no long run effects of FDI on GDP per capita of the host country, but FDI has significant and positive influences on GDP per capita of the sub-country groups of North-North, Emerging-North, and South-Emerging. Feeny *et al.* (2014) evaluated the association between growth and FDI in seven Pacific countries. Results demonstrated that FDI facilitates economic growth in these countries.

Further, Makun (2018) examined the impact of imports, remittances, and FDI on economic growth in the Republic of the Fiji Islands from 1980 to 2015. He concluded that imports have a negative relationship with economic growth, however remittances and FDI have positive influences on economic growth both in the long run and the short run in this country. Likewise, Matsumoto (2022) investigated the nexus between foreign reserve accumulation, FDI, and economic growth in 20 developing countries. He claimed that FDI as an important driver to foster growth and welfare, while the increase of reserve accumulation generates lower consumption in the short run. Saidi *et al.* (2020) assessed the relationship between transport, logistics, FDI, and economic growth in 46 developing countries between 2000 and 2016. Results stated that transport and logistics infrastructure contribute to FDI encouragement and economic growth. Szkorupova (2014) investigated the nexus between FDI, economic growth, and export in Slovakia over the period 2001-2010. Results confirmed the long-term relationship among these variables. Both FDI and exports have positive impacts on GDP of this country.

### **2.2 The relationship between trade openness and economic growth**

According to Keho (2017), trade openness has positive influences on economic growth in Cote d'Ivoire between 1965 and 2014. Hye & Lau (2015) found that both human capital and physical capital support economic growth of India, but trade openness has a negative effect on economic growth of this country in the long run. Oloyede *et al.* (2021) argued that there is a positive and insignificant relationship between trade openness and economic growth in the Economic Community of West African States and Southern African Development Community over the period 2006-2017.

Majumder *et al.* (2020) examined the nexus between oil curse, economic growth, and trade openness in 95 countries between 1980 and 2017 and they found that trade openness contributes to decrease resource curse since it allows these countries gain competitive prices for their resources in the international market and access advanced technologies to extract resources. Musila & Yiheyis (2015) evaluated the influence of trade openness on the growth of Kenya from 1982 to 2009 and they concluded that trade openness positively affects investment and economic growth in Kenya. A study by Kong *et al.* (2021) claimed that trade openness may facilitate economic growth of China both in the short term and long term. Maiti & Prasad (2012) found that trade openness had a positive and weak impact on economic growth of Fiji between 1970 and 2009.

### **2.3 The relationship between FDI, trade openness, and economic growth**

Belloumi (2014) evaluated the association between trade, FDI, and economic growth in Tunisia between 1970 and 2008. Results addressed that there is no significant Granger causality from FDI to economic growth, from economic growth to FDI, from trade to economic growth and from economic growth to trade in the short run. Moreover, there was no evidence has been found to show that FDI positively influenced economic growth in this country. Likewise, Dutta *et al.* (2017) investigated the relationship between FDI, domestic investment, trade openness and economic growth in Bangladesh from 1976 to 2014. Results of the Granger causality test indicated that there is a unidirectional causality running from FDI to growth, domestic investment to trade openness, growth to trade openness and bidirectional causality between domestic investment and growth and FDI and domestic investment. Kumari *et al.* (2021) examined the nexus between FDI, trade openness and economic growth of India over the period 1985-2018. They found that there was no long-term relationship among three variables. Further, there was the bi-directional causality between FDI and economic growth. Nepal *et al.* (2021) explored the relationship between energy security, economic growth, and environmental sustainability in India for the period 1978-2016. Results stated that FDI may reduce energy consumption and carbon emissions in India.

In addition, Omisakin *et al.* (2009) evaluated the nexus between FDI, trade openness and growth in Nigeria between 1970 and 2006 and they concluded that both FDI and trade openness have significant and positive effects on economic growth in Nigeria. A study by Yusoff & Nuh (2015) examined the causality between FDI, trade openness and economic growth in Thailand over the period 1970-2008 and they found that both FDI and trade openness are important determinants contributing to economic growth in Thailand. Finally, Zaman *et al.* (2021) explored the linkage between information technology (IT) exports, capital formation, FDI, trade openness, and economic growth of 64 BRI countries between 2013 and 2018. Results showed that FDI and gross capital formation have positive effects on economic growth, while IT exports and trade openness discourage economic growth in these countries.

### 3. Methodology

#### 3.1 Data and sources

Data from the World Development Indicators (WDI) was gathered to explore the association between FDI, trade openness, and economic growth of Fiji from 1981 to 2020. Therefore, a total of 40 observations was used for the study. The panel data was employed for the study because of a large sample, more degree of freedom, as well as avoiding multicollinearity among variables, and time heterogeneity (Hsiao, 2014).

#### 3.2 The Vector Error Correction Model (VECM)

The model for this study was constructed according to work of Yusoff & Nuh (2015).

$$GDP_t = f(FDI_t, TR_t) \quad (1)$$

Where:  $GDP_t$  denotes GDP per capita (constant 2015US\$);  $FDI_t$  means net inflows foreign direct investment (current US\$); and  $TR_t$  denotes trade openness (% of GDP).

**Table 2. Variables of the VECM**

Variable definition	Unit	Source	Previous references
GDP per capita	constant 2015US\$	WDI	Omisakin <i>et al.</i> (2009); Belloumi (2014); Yusoff & Nuh (2015); Dutta <i>et</i>

FDI net inflows	current US\$	WDI	<i>al. (2017); Kumari et al. (2021); Nepal et al. (2021); Zaman et al. (2021)</i> <i>Omisakin et al. (2009); Belloumi (2014); Yusoff &amp; Nuh (2015); Dutta et al. (2017); Kumari et al. (2021); Zaman et al. (2021)</i>
Trade openness	%	WDI	<i>Omisakin et al. (2009); Belloumi (2014); Yusoff &amp; Nuh (2015); Dutta et al. (2017); Kumari et al. (2021); Zaman et al. (2021)</i>

The Equation 1 can be transformed into the natural logarithm form as follows:

$$\ln GDP_t = \beta_0 + \beta_1 \ln FDI_t + \beta_2 \ln TR_t + \varepsilon_t \quad (2)$$

Where:  $\ln GDP_t$ ,  $\ln FDI_t$ , and  $\ln TR_t$  denote the natural logarithms of GDP per capita, FDI net inflows, and trade openness;  $\beta_0$  is the intercept; ( $\beta_1$ ,  $\beta_2$ ) are parameters to be estimated; and  $\varepsilon_t$  presents the error term.

There are three steps to run the VECM as follows. First, the stability of the series or their order of integration in all variables will be checked. In this article, the Augmented Dickey Fuller (ADF) test and Phillips-Perron (PP) test were employed to examine the stability of the series. Next, the Johansen co-integration test was used to investigate a long run relationship among all covariates. Finally, the VECM was estimated both in the short and long run (Azlina & Mustapha, 2012).

## 4. Results and discussion

### 4.1 Overview on economic growth, FDI, and trade openness in Fiji

**Table 3. Characteristics of economic growth, FDI, and trade openness in Fiji**

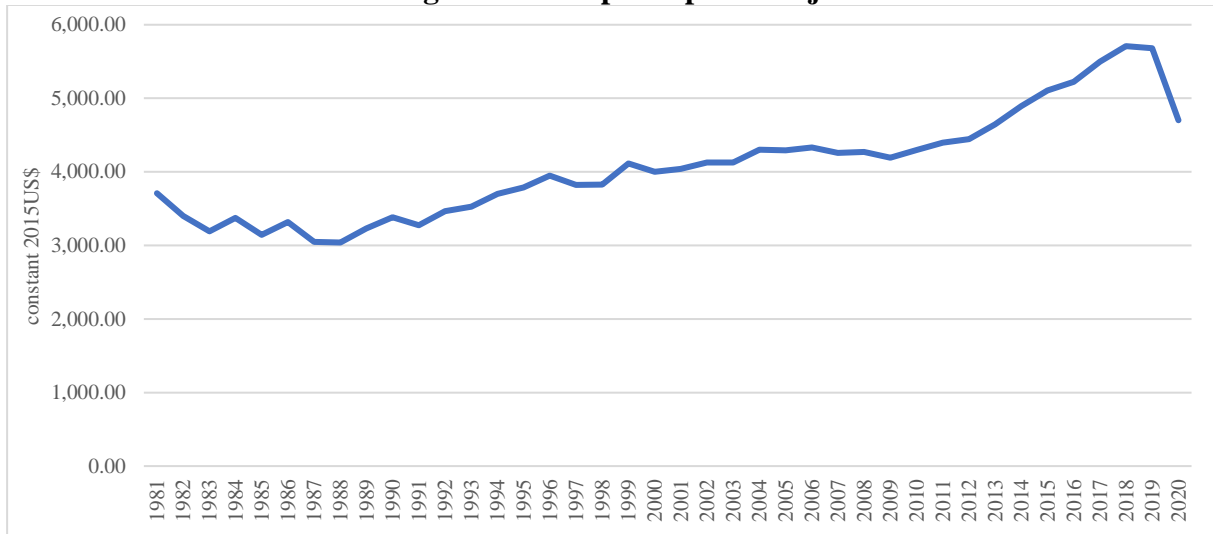
Variable	Mean	SD	Min	Max
GDP per capita	4070.96	714.24	3039.47	5708.99
FDI net inflows	1.44e+08	1.97e+08	-1.47e+08	6.79e+08
Trade openness	111.44	15.48	71.74	135.9

*Source: Author's calculation, 2023*

*Note: SD denotes standard deviation*

As seen in Table 3, the average GDP per capita of Fiji accounts for about US\$4,070. FDI net inflows and trade openness of this country reach US\$14.4 billion and 111.4 percent, respectively, on average (Table 3).

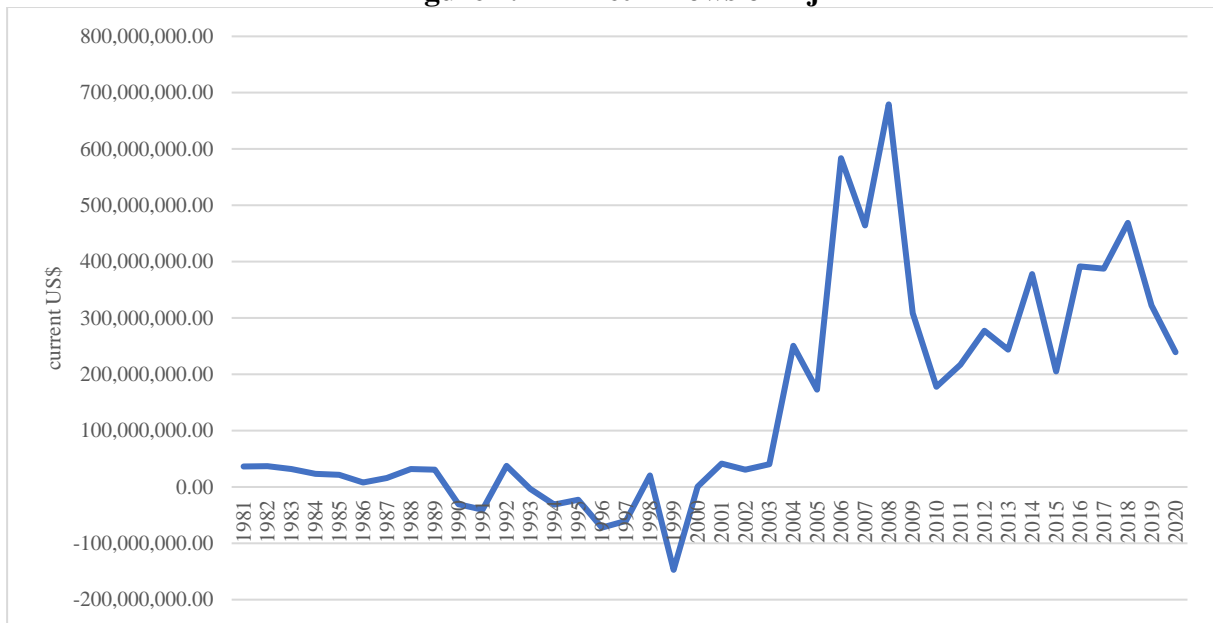
**Figure 1. GDP per capita of Fiji**



Source: World Bank, 2023

GDP per capita of Fiji increased between 1981 and 2020. Starting with about US\$3,700 in 1981, GDP per capita of this country rose by US\$1,000 to reach about US\$4,700 in 2020 (Figure 1).

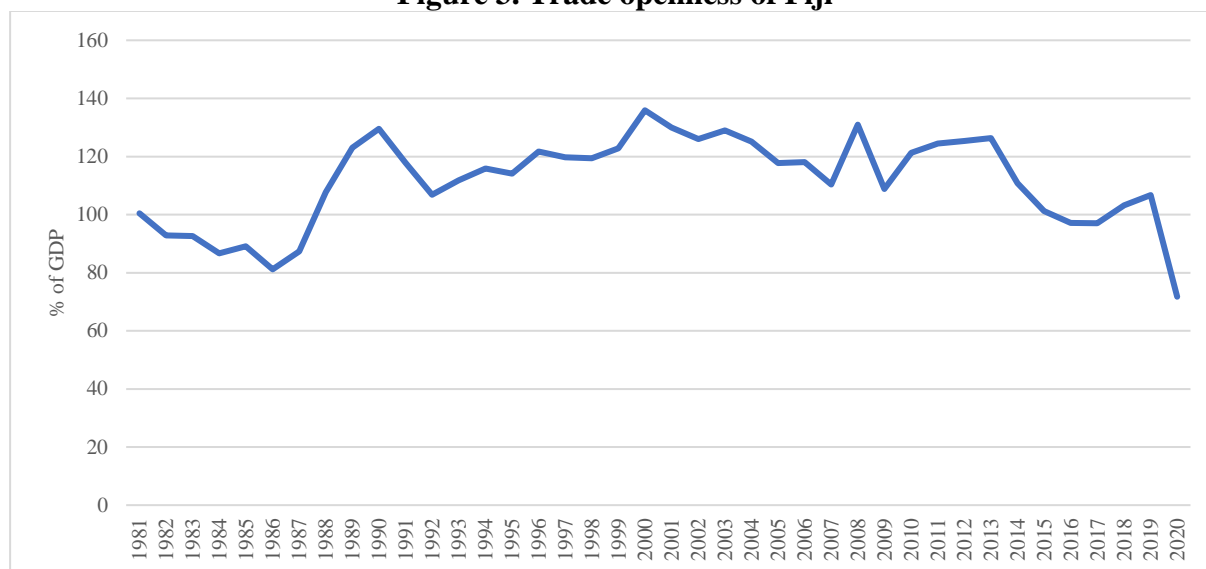
**Figure 2. FDI net inflows of Fiji**



Source: World Bank, 2023

As seen in Figure 2, FDI net inflows in Fiji strongly fluctuated for the last four decades (1981-2020). FDI inflows of this country were negative between 1990 and 1999 and then it tended to increase. By 2020, FDI inflows of Fiji accounted for about US\$239 million.

**Figure 3. Trade openness of Fiji**



Source: World Bank, 2023

Trade openness of Fiji varied between 1981 and 2020. Starting with about 100 percent in 1981, trade openness of this country dropped nearly 30 percent to about 71 percent in 2020 (Figure 3).

## 4.2 The nexus between FDI, trade openness, and economic growth of Fiji

### 4.2.1 The unit root test

The Augmented Dickey-Fuller (ADF) test and the Phillips-Peron (PP) test were used to examine the stationarity of all variables with the hypothesis as follows:

Null hypothesis ( $H_0$ ): The variables contain a unit root

Alternative hypothesis ( $H_a$ ): The variables do not contain a unit root

If a variable contains a unit root, then this implies that the time series of this variable is not stationary.

**Table 4. Results of the unit root test**

Variables		ADF Test		PP Test		Conclusion
		Level	1 <sup>st</sup> difference	Level	1 <sup>st</sup> difference	
LnGDP per capita	Constant	-0.80	-3.85***	-0.75	-5.34***	I(1)
	Constant & trend	-3.24*	-3.30*	-3.99***	-4.98***	I(1)
LnFDI	Constant	-1.81	-7.38***	-2.84*	-11.08***	I(1)
	Constant & trend	-2.30	-7.39***	-3.30*	-11.13***	I(1)
LnTrade openness	Constant	-1.34	-3.55***	-1.29	-5.05***	I(1)
	Constant & trend	-0.77	-3.94***	-0.58	-5.24***	I(1)

Source: Author's calculation, 2023

Note: \*\*\* and \* denote statistical significance at 1% and 10%, respectively

As seen in Table 4, the time series of all variables were not stationary at the level. Therefore, the first difference was implemented to examine the stationary of these variables.

Results address that the absolute values of test statistics are greater than critical values at the 1% and 10%, respectively and therefore we can conclude that the time series of GDP per capita, FDI, and trade openness do not contain unit roots.

#### 4.2.2 Examination of the relationship among variables in the long run

The aim of this step is to determine the optimal lag for the VECM.

**Table 5. Selection of the lag length**

Lag	LL	LR	df	P	FPE	AIC	HQIC	SBIC
0	-87.78				0.031	5.043	5.089	5.175
1	-17.48	140.61	9	0.000	0.001	1.637	1.822*	2.165*
2	-7.65	19.65	9	0.020	0.001	1.591	1.914	2.515
3	2.88	21.08*	9	0.012	0.000*	1.506*	1.966	2.825
4	6.73	7.68	9	0.566	0.001	1.792	2.391	3.508

Endogenous: LnGDP per capita LnFDI LnTrade openness

Exogenous: Constant

Number of observations = 36

Source: Author's calculation, 2023

Notes: \*denotes lag order selected by the criterion; LL means log likelihood values; LR represents sequential modified LR test statistics; FPE denotes final prediction error; AIC means Akaike information criterion; HQIC represents Hannan-Quinn information criterion, and SBIC means Schwarz's Bayesian information criterion

As seen in Table 5, HQIC and SBIC indicators recommend that the optimal lag is one lag, while AIC indicator recommends three lags. The optimal number of lags should be chosen based on the lowest value. Therefore, three lags (the number of lags is equal to 3) was chosen to run the VECM in the third step.

The long-run relationship among variables was checked by the Johansen co-integration test with the following hypothesis:

Null hypothesis ( $H_0$ ): There is no co-integration among variables

The alternative hypothesis ( $H_a$ ): There is co-integration among variables

**Table 6. Results of Trace statistic in the Johansen co-integration test**

Maximum rank	LL	Eigenvalue	Trace statistic	5% critical value	1% critical value
0	-15.35		30.55 <sup>*1</sup>	29.68	35.65
1	-4.71	0.437	9.26 <sup>*5</sup>	15.41	20.04
2	-1.63	0.153	3.10	3.76	6.65
3	-0.07	0.080			

Source: Author's calculation, 2023

Note: <sup>\*1</sup> and <sup>\*5</sup> denote the number of co-integration (ranks) chosen to accept the null hypothesis at 1% and 5% critical values

As seen in Table 6, Trace statistics are smaller than the 1% critical value ( $30.55 < 35.65$ ) and the 5% critical value ( $9.26 < 15.41$ ) and reflecting that there is one co-integration at the 5% critical values among variables.

#### 4.2.3 Estimation of the VECM



**Table 7. Estimation of the VECM in the short run**

<b>Variables</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>z</b>	<b>P-value</b>
<b>DlnGDP per capita</b>				
LnGDP per capita				
LD	-0.10	0.27	-0.39	0.699
L2D	0.14	0.29	0.48	0.631
LnFDI				
LD	0.00	0.00	0.89	0.374
L2D	0.00	0.00	0.24	0.808
LnTrade openness				
LD	0.01	0.10	0.17	0.865
L2D	-0.05	0.10	-0.47	0.641
Constant	0.01	0.01	1.24	0.215
<b>DlnFDI</b>				
LnGDP per capita				
LD	-99.45***	24.78	-4.01	0.000
L2D	-54.01**	26.23	-2.06	0.039
LnFDI				
LD	-0.71***	0.14	-4.96	0.000
L2D	-0.38***	0.14	-2.73	0.006
LnTrade openness				
LD	-20.07**	9.79	-2.05	0.040
L2D	-8.45	9.74	-0.87	0.386
Constant	0.00	0.91	0.00	1.00
<b>DlnTrade openness</b>				
LnGDP per capita				
LD	0.48	0.56	0.87	0.387
L2D	0.35	0.59	0.59	0.556
LnFDI				
LD	0.00	0.00	0.23	0.819
L2D	0.00	0.00	1.00	0.317
LnTrade openness				
LD	-0.05	0.22	-0.24	0.813
L2D	0.03	0.22	0.17	0.863
Constant	0.00	0.02	0.46	0.642

Source: Author's calculation, 2023

Notes: LD and L2D mean lag 1 and lag 2, respectively; \*\*\* and \*\* denote statistical significance at 1% and 5%, respectively

As seen in Table 7, GDP per capita and trade openness have significant and negative effects on FDI in Fiji. These imply that economic growth and the increase of trade openness may discourage FDI inflows to Fiji in the short run.

**Table 8. Estimation of the VECM in the long run**

<b>Variables</b>	<b>Coefficient</b>	<b>Std. Error</b>	<b>z</b>	<b>P-value</b>
LnGDP per capita	1			
LnFDI	-0.015***	0.00	-3.17	0.002
LnTrade openness	0.609**	0.29	2.09	0.036
Constant	-10.83			

Source: Author's calculation, 2023

*Note: \*\*\* and \*\* denote statistical significance at 1% and 5%, respectively*

It has been empirically found that FDI decelerates economic growth of Fiji in the long run. By contrast, trade openness supports economic growth of Fiji in the long run. Results reflect that trade openness should be encouraged since it accelerates economic growth in Fiji. However, FDI inflows to Fiji should be carefully controlled because it reduces economic growth for the long term.

#### **4.2.4 Discussion**

Our findings revealed that both GDP per capita and trade openness have significant and negative influences on FDI of Fiji in the short run. These reflect that economic growth and the development of trade openness decelerate FDI inflows to Fiji. Further, we found that FDI discourages GDP per capita, but trade openness may facilitate economic growth of Fiji in the long run. Our results are contrast to conclusions of Gani (1999), Feeny *et al.* (2014), and Makun (2018) who found that FDI promotes economic growth in Fiji. The Johansen co-integration test confirmed the long-term relationship among FDI, trade openness, and economic growth in Fiji and this consistent to argument of Makun (2018).

Our results can be explained by the following reasons. First, in Fiji, although FDI plays an important role in mineral exploration, primary product processing, infrastructure development, manufacturing and service industries, but the majority of FDI concentrated on development of the tourism sector (Gani, 1999). In addition, FDI has been found as a factor generating crowds-out domestic investment in the Pacific and consequently, FDI has a little contribution to economic growth in the region (Feeny *et al.*, 2014). Second, the Fiji economy grew with the low rate for the long run and therefore it was very difficult to attract FDI inflows. For instance, GDP grow rate of Fiji gradually declined from 4 percent in 1976-1980 to 0.9 percent in 1980-1985, and then increasing to 4 percent in 1986-1990 and decreasing to 2.4 percent in 1991-1995 (Gani, 1999). Third, Fiji has been known as the imports-dependent country which greatly depends on imports of capital goods, plant, machinery, and consumables. For example, imported commodities to Fiji accounted for 35 percent of Fiji imports in 2013, including mineral fuels (23 percent) and other manufactured goods and capital goods (11 percent). Therefore, FDI inflows to Fiji should focus more on social and economic development, especially in reducing imports dependence rather than concentrating only on the tourism industry. Lastly, although trade openness enhances economic growth of Fiji, but it has a weak influence on economic growth because only the trading and tourism sectors benefit from the development of trade openness, while the industrial and construction sectors have little growth, and the agriculture sector declines (Maiti & Prasad, 2012).

### **5. Conclusion and policy implications**

The aim of this article is to evaluate the relationship between FDI inflows, trade openness, and economic growth in Fiji between 1981 and 2020 using the VECM. It has been empirically found that both economic growth and trade openness decelerate FDI inflows to Fiji in the short run. In the long run, results stated that FDI has a significant and negative effect on economic growth, but trade openness supports economic growth of Fiji. The Johansen co-integration test confirmed the long run association among FDI, trade openness, and economic growth in Fiji.

Policies were recommended to foster economic growth and achieve sustainable development for Fiji. First, FDI inflows to Fiji should be efficiently used for social and economic development, rather than only focusing on trading and tourism sectors. Positive

impacts of FDI inflows on the economy should be encouraged through labor and capital productivity improvement, technology transfer, human capital development, provision of inputs to local industries at a lower cost and strengthening the recipient country's ability to deal with external shocks. Second, trade openness should be promoted since it facilitates economic growth of Fiji in the long term. Trade policies should be considered by the Government of Fiji to reduce dependence on imported commodities such as plant, machinery, and consumables. This may assist this country in terms of narrow downing trade deficit as well as enhancing competitive advantages with trading partner countries. Finally, the nexus between FDI, trade openness, and economic growth should be re-examined to efficiently exploit both domestic and external resources for sustainable development in Fiji.

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