Foreign Direct Investment and Domestic Investment in Selected Small States

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Introduction

Foreign direct investment is an investment made by a resident enterprise in one economy to create a long-lasting interest in a firm that is resident in another economy. Long-lasting interest implies the existence of a long-term association between the direct investor with at least 10% voting power in the direct investment firm and a substantial measure of influence on the management of the firm (United Nations, 2023). Like large states (Emako, Nuru and Menza, 2023; Park, Lee, and Lee, 2022; Saidi and Ochi, 2023; Shahzadi, Ali, Ghafoor, Rahman, 2023; Kusairi, Wong, Wahyuningtyas and Sukemi, 2023), small states have encouraged foreign direct investment into their economies. In 1990, foreign direct investment in the small states was 1.4% of gross domestic product. This rose to 4.9% in 2000 and 36% by 2007. Regardless of a drop since 2007, these levels have remained above 5% of the gross domestic product (Narteh-Yoe, Djokoto and Pomeyie, 2023). The pursuit of foreign direct investment into the small states has been motivated by several reasons (Djokoto, 2021a; Emako et al., 2023; Gam, Oanh and Dang, 2023; Kastratović, 2023; Okara, 2023; Rajab and Zouhier, 2023). Firstly, new job openings and improvement in technology transmission resulting from foreign direct investment to enhance overall growth. Secondly, foreign direct investment enhances export capability, instigating a rise in foreign currency receipts. Thirdly, foreign direct investment motivates local investment by increasing domestic investment when foreign businesses purchase domestically-produced raw materials or when foreign businesses provide intermediate resources to local businesses. Fourthly, but related to the third reason, foreign direct investment augments the availability of financial resources for investment, thereby stimulating capital accumulation.

Domestic investment, constitutes expenditure on land improvements, plant, machinery, and equipment purchases; and general infrastructure in an economy funded from the same economy (World Bank, 2023a). Small states posted the greatest domestic investment to the gross domestic product in 1991, 23.2%. This reduced to 0.91% in 2012. After recovering, the 2020 rate of 21.3% was still below the 1991 level. The trend over the period showed a weakening (Narteh-Yoe et al., 2023). Foreign direct investment does crowd in domestic investment (Rabaud, Diallo, and Jacolin, 2021; Pilbeam and Oboleviciute, 2012). This means that the inflow of foreign direct investment causes a rate of increases in domestic investment exceeding increases in foreign direct investment. This tends to be a realization of the expectations from the inflow of foreign direct investment. As domestic investment increases, this will ultimately lead to economic growth, a key macroeconomic

goal. However, the expectations of foreign direct investment crowding in domestic investment have not always been met. Instead of enhancing domestic investment, foreign direct investment may crowd out or displace domestic investment (Ahmed, Ghani, Mohamad, and Derus, 2015; Avci and Akin, 2020; Borensztein, De Gregorio and Lee, 1998; Mišun and Tomšík, 2002). This is possible through competition in the product market, financial market or via superior technology amongst other things (Ahmed et al., 2015; Budang and Hakim, 2019, 2020). In this case, foreign direct investment increases the rate of growth of domestic investment less than that of foreign direct investment. In extreme cases, there could be a reduction in domestic investment. This could hamper domestic investment and hinder economic growth, jeopardizing the growth goal. Notwithstanding the crowding-out and crowding-in effects, a neutral effect exists (Agosin and Macahdo, 2005; Wang, 2010). In this case, the inflow of foreign direct investment neither enhances nor discourages domestic investment as intended. In that case, the budgetary allocations to support foreign direct investment may have been wasted. Considering the inconclusive state of the effect of foreign direct investment on domestic investment and the implications for domestic investment and economic growth, what is the relationship between foreign direct investment and domestic investment in small states?

Several studies have addressed foreign direct investment in small states (Barrowclough, 2007; Djokoto, 2021b; Kavvadia, Adam, Clemons, Devenyi, Girotto, Lisova, Vojta, 2018; Kolstad and Villanger, 2004; Jetin and Chiasse, 2018; Madinga, 2015; Narteh-Yoe et al., 2023; Rakowski, 2021; Read, 2008; Yusheng, Atuahene Agyapong, Bentum-Micah, and Konadu Aboagye, 2019). Some studies have also reported on the effect of foreign direct investment on domestic investment (Ahmad et al., 2018; Josue, Magwiro, Klingelhofer, and Kaggwa, 2014; Oualy, 2019; Djokoto, 2014) and sectoral studies (Agriculture – Djokoto et al., 2014; Djokoto, 2021a. Manufacturing – Djokoto, 2022, 2023).

Avci and Akin (2020), and Budang and Hakim (2019, 2020), reported the crowding-out effect of inward foreign direct investment on domestic investment. Agosin and Machado (2005) made similar findings for Latin America. In explaining the outcome, Budang and Hakim (2020) acknowledged the inability of Asian developing countries to compete with foreign firms due to the difficulty in obtaining financial support, lack of advanced technology, or low power in global advertising and marketing. Also, many Asian firms were subject to acquisitions whilst some have merged with foreign firms where, in such relationships, Asian firms were the junior partners. Pilbeam and Oboleviciute (2012) found a crowding-in effect for the European Union – 12, just as Rabaud et al. (2021) found for Africa, and Wang (2010) for the least developed countries. Rabaud et al. (2021) explained that foreign direct investment targeted state-owned enterprises in public investment areas, such as airports, and harbours. These contribute to domestic investment. Notwithstanding the crowding-in and crowding-out effects, there is evidence of no effect for Africa and Asia (Agosin and Macahdo, 2005), the European Union – 14 (Pilbeam and Oboleviciute, 2012), and developing countries (Wang, 2010). Agosin and Machado (2005)

explained that not all foreign direct investment registered in the balance of payments becomes a real investment, in the sense of national accounts. This was attributed to some foreign capital being used to buy existing assets or to finance current expenditures by multinational firms.

Although some small states may be included in the country groups of Africa, Asia, and developing and developed countries, no study addressed small states as a collective. We fill this gap by assessing the crowding effect of inward foreign direct investment and its extent on domestic investment in the selected small states. Further, we included outward foreign direct investment for two reasons; first, outward foreign direct investment is a counterpart of inward foreign direct investment (United Nations, 2023) and secondly, a sectoral study found outward foreign direct investment influenced domestic investment (Djokoto, 2023). We used data on 28 small states (in the Appendix) from 1990 to 2021 obtained from the World Development Indicators (WDI) of the World Bank (2023b) and estimated a general method of moments (GMM) model.

In so doing, we first provide the setting of small states. In section three, we present and discuss the results of the estimation. The conclusions and recommendations are se out in the final section.

The setting of small states

Small states have populations barely exceeding 1.5 million (Baldacchino, 2020; Djokoto, 2021a; Narteh-Yoe et al., 2023; World Bank, 2022c). Their small population, small land area and situation mostly within the oceans, and their economic foundation, expose these countries to destruction from natural disasters and climate change over which they have little control. The capacity of small states is also limited by restrained economic opportunities and considerable migration (Baldacchino, 2020; Keane, Cadogan, and Enos-Edu, 2020; Sanches and Seibert, 2020; World Bank, 2022c). Long (2020), Sulg (2020), and World Bank (2022c) noted that despite these similarities, small states are different in geography, isolation, land area, fragmentation and spread, as well as debt burden. Whilst dispersed through all regions of the world, about 67% of small states are islands, some are along the coast of the mainland, and a third encompass five land-locked countries (Bhutan, Botswana, Eswatini, Lesotho, and San Marino). The islands, particularly those in the Pacific, are among the most difficult to reach in terms of distance to the nearest international markets. Regarding land area, Nauru, the smallest small state, has a land area of 20 square kilometres whilst non-island states such as Botswana and Namibia are 3.1 and 4.5 times larger than all small island states together. Considering fragmentation, Guinea-Bissau and Kiribati, are archipelagos. Whilst Guinea-Bissau is along the coast of the African continent, Kiribati is dispersed over a wide ocean space of 810 square kilometres (Narteh-Yoe et al., 2023; World Atlas, 2020a,b,c; World Bank, 2022c). A sixth dimension of difference is economics. Regarding population, whilst

Botswana, Gabon, Guinea Bissau, Namibia and Qatar exceed 1.5m, the populations of Bahrain, Belize, Cabo Verde, Cyprus, Estonia, Esawatini, Fiji, Iceland, Mauritius, Solomon Islands, Suriname, Timor-Letse and Vanuatu range between 200,000 and 1.5m. The populations of others, such as Antigua and Barbuda, Bahamas, Dominica, Kiribati, Samoa and Tonga, do not exceed 200,000. The population of Tuvalu is as low as 12,000. In the case of the size of the economy, the average GDP from 1990 to 2021 ranged from US$31m (Tuvalu), through US$ 140 – 902m (e.g. Kiribati, Dominica, Samoa Guinea-Bissau). Low growth, disparities in growth rates of the economy, and fragile fiscal management have created considerable debt enlargement in many small states. Alichi, Shibata, and Tanyeri (2019), IMF (2016), Tumbarello, Cabezon and Wu (2013) and World Bank (2022c) note that small states typically have a higher debt burden than in some developing countries, although there are some disparities.

Results and discussions

Results

The minimum and the maximum domestic investment (*DINV*) were recorded by the Solomon Islands in 1995 and Timor-Letse in 2011, respectively (Table 1). Also, the minimum and the maximum inward foreign direct investment (*IFDI*) were posted by Cyprus in 2021 and Malta in 2007, respectively. The means of *DINV* and one year lag of *DINV* (*L1_DINV*) are similar, just as the means of *IFDI* and one year lag of *IFDI* (*L1_IFDI*). However, the means of *DINV* and *L1_DINV* are about three times the means of *IFDI* and *L1_IFDI*. This is not surprising as *IFDI* augments *DINV* (De Mello, 1997; Djokoto and Wongnaa, 2023; Farla, De Crombrugghe, Verspagen, 2016; Gidiglo, Afrane, Henaku, Badu-Prah, Srofenyoh, and Djokoto, 2023; Narteh-Yoe et al., 2023). The mean of outward foreign direct investment (*OFDI*) is more than a third of *IFDI*. This suggests small states' receipt of foreign direct investment is more than a third of foreign direct investment sent out of small states.

The probability of the test of the second-order serial correlation is 10% and above across models 1-8 (Table 2). This implies there is no second-order serial correlation in the models. Also, the probability of the Sargan test exceeds 10% for models 1-8. This implies that assumptions of the over-identifying restrictions are valid. Model 1 is the complete model. To assess the robustness of the estimates of our key variables, we estimated models 2-8. The estimates of *L1_DINV* are similar in magnitude, sign, and statistical significance across models 1-8. Also, the estimates of *IFDI* and *L1_IFDI* in models 2-8 are similar in magnitude to that of model 1. Further, the estimates of *IFDI*, trade openness (*TO*), inflation (*INFLA*), growth rate (*GR*), savings rate (*SR*), and developed countries (*DVD*) in models 2-8 are similar in magnitude, sign, and statistical significance to the corresponding estimates in model 1. These similarities imply the estimates of our key variables in model 1 are robust to the control variables. Also, the estimates of the control variables in model

1 are not sensitive to the inclusion of the control variables in models 2-8. The robustness suggests the models have desirable estimates.

Discussion of the control variables

To avoid moving back and forth between Tables 2 and 3, we discuss the results of the control variables before those of the key variables. The coefficient of -0.0227 of outward foreign direct investment suggests that a US$ 1.00 increase in outward foreign direct investment will reduce domestic investment by 2 cents (Table 2). The outward foreign direct investment originated from the small states. Thus, the incidence of outward foreign direct investment implies investment that could otherwise have remained in small states has been invested outside the small states. The magnitude of the coefficient of outward foreign direct investment and inward foreign direct investment are similar. The opposite signs suggest these two almost cancel out, a zero-sum game. Discouraging multinationals in the small states from investing outside the small states and re-investing in the small states would increase domestic investment by the measure equal to the sum of the effects of inward foreign direct investment and outward foreign direct investment on domestic investment in the short run. This could have a multiplier effect in the long run.

The coefficient of trade openness is positive and statistically different from zero. Specifically, the value is 0.0483 implying that an increased trade index by 1 unit will raise domestic investment by about 5 cents. The positive sign is an indication that one of the indicators of globalization positively influences domestic investment in small states. Given their small land size and population, opening to the outside world would afford small states the opportunity for larger markets for their products. Also, there is an opportunity to acquire products that cannot be produced in the small states. It is interesting to note that the magnitude of the coefficient of trade openness is about twice the magnitude of outward foreign direct investment. Whilst this more than compensates for the discouraging effect of outward foreign direct investment on domestic investment, it re-enforces the effect of inward foreign direct investment on domestic investment in the short run. Together, the resultant effect of globalization on domestic investment in the small states is positive. Our finding is consistent with the positive effect of trade openness on domestic investment found by Tsaurai (2022) for BRICS countries but inconsistent with the neutral effect of trade openness on domestic investment in Africa found by Yiheyis and Cleeve (2018).

The coefficient of economic growth is positive and of a magnitude of 0.0739. This implies that increasing economic growth by 1% would raise domestic investment in the small states by 7 cents. This is in line with the a priori expectations and existing literature (Avci and Akin, 2020; Pilbeam and Oboleviciute, 2012; Tsaurai, 2022) but inconsistent with Budang and Hakim (2019). Whilst domestic investment is an ingredient of the GDP, the annual growth of which is economic growth, economic growth tends to influence domestic investment. Economic growth implies more income which can be saved for investment and partly spent on goods and services produced to reduce inventories. This would provide an opportunity for firms to replenish stocks. Economic growth also attracts inward foreign

direct investment (Djokoto, 2013a; Khanam and Shastri, 2022; Korsah, Amanamah and Gyimah, 2022; Osabuohien-Irabor, 2022), discourages divestment of inward foreign direct investment (Djokoto, 2021c; Lee and Kang, 2022; Nguyen 2022), and could encourage or discourage outward foreign direct investment (Banga, 2007; Sauvant, 2013; Kaushal, 2018; Wu, 2017).

Inflation does not influence domestic investment. This is informed by the statistically insignificant coefficient of *INFLA*. This is inconsistent with the a priori expectations and the findings of Rabaud et al. (2021). Similarly, the effect of the savings rate is statistically insignificant. Although our finding is consistent with Budang and Hakim (2020), it is inconsistent with the a priori expectations (Tsaurai, 2022) and investment theory (Jorgenson, 1963, 1971; Modigliani and Miller, 1958). Although firms continue to rely on savings for investment, the role of inward foreign direct investment, outward foreign direct investment and trade openness may have diminished the effect of savings on domestic investment. The coefficient of *DVD* is statistically indistinguishable from zero. This implies that the domestic investment of developing small states is not statistically different from those of developed small states considering other determinants of domestic investment. This must be appreciated in the sense that the expression is not the absolute investment amount, but the investment is expressed in terms of the GDP. The results, thus, suggest that the relativities or percentage ratios are indistinguishable between the developing and developed small states.

Discussion of the crowding effect of foreign direct investment on domestic investment
The estimated effect size for the short run of 0.0256 covers the standard error more than 2.7 times (Table 3). In terms of the chi-square test, the computed value of 10,766 exceeds the critical value of 6.635 at 1 degree of freedom. Thus, the computed chi-square value is statistically different from zero. The value of 0.0256 is less than 1, implying that the null hypothesis that the computed effect size is not different from 1 is rejected. The estimated effect size implies that an increase in foreign direct investment of US$1.00 in the small states increases domestic investment by 3 cents. Since the rise in foreign direct investment is higher than domestic investment, this is a crowding-out effect. Owing to the small land area and population size, foreign firms in small states, to a large extent, rely on the services of the same suppliers abroad. Also, foreign-owned firms appear to be stronger and more effectively functioning than those in the small states. From this disadvantaged position, domestic firms in small states appear to be vulnerable to acquisition. In the case of mergers, the firms in the small states are not able to merge with foreign partners on an equal footing.

In the long run, the computed effect size is 0.6897. The chi-square value of 8.21 is larger than the 6.635 value for the 1% level of statistical significance. Thus, we reject the null hypothesis that the computed value of the effect size is equal to unity. The effect size of 0.6897 implies that a US$ 1.00 increase in foreign direct investment in the small states would induce a 69 cents increase in domestic investment. As this value is less than 1, the effect is a crowding-out. It would be observed that the long-run effect size covers the short-

run effect size by more than 20 times. The importance of this result is that, in the long run, domestic firms in the small states seek to improve their capacity, hence the severalfold increase in the effect size in the long run. That is, notwithstanding the small size and population, domestic firms in the small states improve their capacity to provide services for foreign firms. Domestic firms in small states also build capacity in the long run to enhance their competitive advantages. People from foreign firms may leave and find employment in domestic firms that will benefit from the expertise of these new employees. Also, through interactions with foreign firms, local firms in the small states may acquire additional know-how and technology to improve capacity. Our finding of crowding-out is consistent with Avci and Akin (2020), Budang and Hakim (2019, 2020), and Agosin and Machado (2005) for Latin America. The results diverge with the crowding-in found by Pilbeam and Oboleviciute (2012), Rabaud et al. (2021), and Wang (2010) in the case of the least developed countries.

Conclusions and recommendations

We depart from existing studies by examining the crowding effect of foreign direct investment on domestic investment in the small states. We employed data from 1990 to 2021 for 28 small states estimated by GMM. We found that foreign direct investment crowds out domestic investment in the short and long runs.

The crowding-out effect of foreign direct investment on domestic investment requires that governments of small states facilitate technology and technology transfer through technology education and training, establishing investment agreements, and reviewing existing agreements to emphasize technology transfer. Apart from increasing training expenditure targeted at technology enhancement, local firms can employ expatriates or enter franchise agreements that involve technology transfer.

The negative and almost similar magnitudes of *OFDI* and *IFDI* require that small states must assess the costs and benefits of *IFDI* vis-à-vis *OFDI*. The outcome would inform on which attention must be focused. Managers of economies of small states must not relent on the economic growth goal as, apart from attaining that as a key macroeconomic goal, there is a collateral benefit of increasing domestic investment by close to the same rate of economic growth. Small states must also continue open trade policies as these enhance domestic investment and, ultimately, economic growth.

As we investigate the crowding effect of inward foreign direct investment in small states, further research can explore the crowding effect of outward foreign direct investment in small states.

Appendix and Tables

Appendix: List of small states in the data

Antigua and Barbuda	Cyprus[a]	Iceland[a]	Samoa
Bahamas, The	Dominica	Jamaica	Seychelles
Bahrain	Estonia[a]	Kiribati	Solomon Islands
Barbados	Eswatini	Malta[a]	Suriname
Belize	Fiji	Mauritius	Timor-Leste
Botswana	Gabon	Namibia	Tonga
Cabo Verde	Guinea-Bissau	Qatar	Vanuatu

Notes: 1. List of countries informed by World Bank (2023)
  2. [a] are developed countries based on United Nations (2022)

Table 1. Descriptive statistics

Variable	Observations	Mean	Standard deviation	Minimum	Maximum
DINV	724	23.9591	8.6663	5.2537	70.3314
L1_DINV	696	23.8856	8.5497	5.2537	70.3314
IFDI	724	8.7593	33.8877	-117.4203	449.0809
L1_IFDI	696	9.1035	34.1969	-104.0590	449.0809
OFDI	724	3.1993	29.4461	-138.5176	300.4061
TO	724	109.9253	45.3677	40.4492	322.6750
INFLA	724	4.7101	7.3054	-11.6861	77.2966
GR	724	3.0601	5.0224	-28.1000	31.9145
SR	724	16.5498	23.0684	-90.5043	75.5496
DVP	724	0.8398	0.36706	0	1
DVD	724	0.1588	0.36578	0	1

Table 2. Results of estimations of the effect of foreign direct investment on domestic investment in the small states

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
VARIABLES	DINV	DINV	DINV	DINV	DINV	DINV	DINV	DINV
L1_DINV	0.6666***	0.6980***	0.6997***	0.7847***	0.7521***	0.7186***	0.7519***	0.7246***
	(0.1115)	(0.0538)	(0.0570)	(0.0467)	(0.0514)	(0.0670)	(0.0671)	(0.0345)
IFDI	0.0256***	0.0106**	0.0317***	0.0124**	0.0102**	0.0024	0.0071	0.0073
	(0.0094)	(0.0053)	(0.0109)	(0.0060)	(0.0042)	(0.0060)	(0.0059)	(0.0062)
L1_IFDI	-0.0025	-0.0033	-0.0035	-0.0104**	-0.0070	0.0010	-0.0031	-0.0022
	(0.0052)	(0.0032)	(0.0025)	(0.0053)	(0.0047)	(0.0039)	(0.0032)	(0.0030)
OFDI	-0.0227***		-0.0258***					
	(0.0086)		(0.0090)					
TO	0.0483***			0.0430***				
	(0.0065)			(0.0044)				
INFLA	0.0279				0.0151			
	(0.0256)				(0.0202)			
GR	0.0739**					0.1123***		
	(0.0317)					(0.0249)		
SR	-0.0102						-0.0042	
	(0.0237)						(0.0068)	
DVD	9.1976							-4.0326
	(11.6582)							(4.2953)
CONSTANT	0.5375	7.1324***	7.0025***	0.1487	5.6495***	6.1455***	5.8523***	7.0504***
	(3.1746)	(1.2198)	(1.2835)	(1.5436)	(1.2202)	(1.5557)	(1.5685)	(0.9746)
Model diagnostics								
Observations	695	695	695	695	695	695	695	695
Countries	28	28	28	28	28	28	28	28
Probability of AR(2) test	0.1552	0.1647	0.1717	0.1965	0.1301	0.1000	0.1415	0.1368
Probability of the Sargan test	1.0000	0.9999	0.9999	1.0000	1.0000	1.0000	1.0000	1.0000

Note: 1. Robust standard errors in parentheses. 2. *** p<0.01, ** p<0.05, * p<0.1. 3. AR(2) – Second-order serial correlation

Table 3. Crowding effects of foreign direct investment on domestic investment in the small states

	Estimated effect size	Chi-square test	Effect
Short run	0.0256 (0.0094)	10766***	Crowding out
Long run	0.6897 (0.1083)	8.21***	Crowding out

*Notes: 1. Robust standard errors in parenthesis. 2. *** p<0.01*

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