Foreign divestment, economic growth and development in South Africa: an empirical analysis

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Abstract

Purpose – The purpose of this study is to investigate the effect of foreign direct divestments (FDD) on economic growth and development in South Africa for the period 1991–2019.

Design/methodology/approach – The non-linear autoregressive distributed lag technique is used for the empirical analysis. Two regression models are specified, one for economic growth and the other for development which is proxied by poverty.

Findings – The empirical results suggest that foreign divestments are detrimental to both economic growth and development. Furthermore, the results suggest that the negative effects of foreign divestments outweigh the positive effects of FDI inflows.

Practical implications – South African policymakers should thus use policies that promote the retention of FDI inflows together with those that attract inflows. Furthermore, policies that promote economic freedom such as transparency and reduction in the time frame for granting government permits for business operations are also of paramount importance.

Originality/value – Most of the available literature on FDD focuses on the firm perspective. Available studies on the effect of FDD on economic growth do not investigate the effect of divestment on economic development. Economic growth is a necessary but not a sufficient condition for the achievement of socioeconomic development.

Keywords FDI, Economic development, Poverty, Economic growth, NARDL, Foreign divestment

Paper type Research paper

1. Introduction and background

FDI has been an integral part of the South African economy. In the recent past, foreign investments have not only been channelled to resource extraction but also investors have diversified into services and manufacturing which has created more links with domestic firms and local entrepreneurs. In spite of their importance, FDI inflows into South Africa declined by 15% to US$4.6bn in 2019 (UNCTAD, 2020). Furthermore, because of the COVID-19 pandemic, FDI inflows declined by 39% to US$3.1bn (UNCTAD, 2021). A decline in FDI coupled with increased foreign direct divestments (FDD) could undermine economic growth

and development in the country. FDD refers to the liquidation or sale of foreign affiliates by multinational enterprises in a host economy. In addition, it can be a closure of a subsidiary in a host country or an exit from foreign markets (Boddewyn, 1983; Soule *et al.*, 2014).

According to Yeboua (2020), FDD has gained a lot of attention from both academics and policymakers recently. In 2018, foreign investment stocks declined by 15% in Africa because of divestment. Another indicator of FDD, cross-border mergers and acquisitions, decreased by 45% to US$3.2bn in African countries mostly because of the COVID-19 pandemic (UNCTAD, 2021). In spite of South Africa being traditionally regarded as one of the most attractive destinations for FDI in Africa, it has not been shielded from FDD. According to Business Insider SA (2019), a number of large investment banks such as Arqaam Capital, Credit Suisse, Macquarie, Deutsche Bank and Citigroup either pulled out of South Africa or reduced the size of their operations between 2018 and 2019. Reasons cited for the FDD included stringent regulation and the increased popularity of passive investing. The mining sector has also been plagued by divestments because of concerns around global warming as well as regulatory requirements such as the 51% Black Economic Empowerment status directive (Cunningham, 2019). In the recent past, Capital Partners, South 32 and Anglo American have scaled-down operations. The Johannesburg Stock Exchange also raised concerns regarding FDD from South Africa and recommended increased efforts by both the private and public sectors to attract and retain FDI (Bussinesstech, 2021).

In most cases, divestment is the opposite of FDI and is mostly a reaction to factors that affect the business environment such as economic, political and geopolitical uncertainties. Therefore, factors such as political instability and unfavourable legal and regulatory environments matter in attracting and retaining foreign direct investment (Benito, 1997). Boddewyn (1983) identified factors that cause FDD such as low finances of a subsidiary, lack of resources and poor pre-investment analysis. Economic and financial motives are the most common reasons for strategic divestments. These motives include factors like weak cash inflow, poor financial performance, low market demand and high costs (Duhaime and Grant, 1984; Benito and Larimo, 1995). FDD has an adverse effect on the performance of the divesting firms either on sales or employment. In addition, the impact of FDD has a greater effect on the domestic economy where it can further weaken the growth of the economy and increase unemployment.

The determinants of FDI inflows are well documented, however, not much is known about the effects of FDDs. There is limited availability of data or information which makes it difficult to determine the effect of FDD on host countries' economies, especially in developing countries (Yeboua, 2020; Borga *et al.*, 2020). Most of the available literature on FDD focuses on the firm perspective (Belderbos and Zou, 2006; Nguyen *et al.*, 2022; McDermott, 2010; Soule *et al.*, 2014; Benito, 1997). Available studies on the effect of FDD on economic growth include Khaing (2016) and Glomsrød and Wei (2018). However, these studies do not investigate the effect of divestment on economic development. Economic growth is a necessary but not a sufficient condition for the achievement of socioeconomic development. It is against this backdrop that this study examines the effect of FDD on both economic growth and development in South Africa. South Africa is an important case study because of the rise in FDD over the recent past. Furthermore, FDI contributes significantly to production, employment and exports in South Africa. Poverty levels have been on an upward trajectory since 2012 coinciding with the stagnant economic growth and FDI levels. Therefore, FDD would have serious consequences for the achievement of socioeconomic goals such as poverty. The non-linear autoregressive distributed lag (NARDL) proposed by Shin *et al.* (2014) is used for the empirical analysis. The technique decomposes inward FDI stocks into positive and negative components. Because FDD is the reverse of inward FDI, the negative component of inward FDI stocks will be used as a proxy for FDD in South Africa.

The study is structured as follows: Section 2 provides an overview of FDD, economic growth and development in South Africa. Section 3 discusses the theoretical and empirical literature underpinning the study. Section 4 outlines the data and methodology of the study, and Section 5 discusses the empirical results. Lastly, Section 6 concluded the study and provide recommendations.

2. Overview of foreign divestment in South Africa

FDD has been a major cause for concern globally in the past few years. A study by Ernst and Young (2019) revealed that 84% of companies surveyed worldwide intended to divest in the near future. Reasons for the divestment decisions include innovation caused by competition, technological advancements, geopolitical uncertainty and macroeconomic instability, which are expected to raise the costs of operations. A study by the World Bank (2019) showed that irregular government conduct, political risk, adverse regulatory changes, breach of contract and transfer and convertibility restrictions were the major causes of investor divestments. Borga *et al*. (2020) reported that multinational corporations divested one of every five foreign owned firms between 2007 and 2014.

FDD has coincided with a reduction in both the number and value of mergers and acquisitions, especially during the period 2018–2020 as shown in Figure 1. According to Yeboua (2020), African countries must be prepared for a rise in FDD intensified by the COVID-19 pandemic. Such divestment will be detrimental to the continent's growth prospects as well as job creation. FDDs will hinder the progress towards the achievement of South Africa's targets set in the National Development Plan (NDP) such as eradicating poverty and inequality, creating 11 million jobs and reducing the unemployment rate to 6% by 2030 (Republic of South Africa, 2012).

Figure 2 outlines trends in FDI stocks as a percentage of gross domestic product (GDP) in South Africa. Prior to the election of the democratic government in 1994, the value of FDI stocks was very low. However, an upward trend was recorded between the late 1990s and 2007. The global financial crisis caused a drastic but short-lived decline in FDI stocks. In
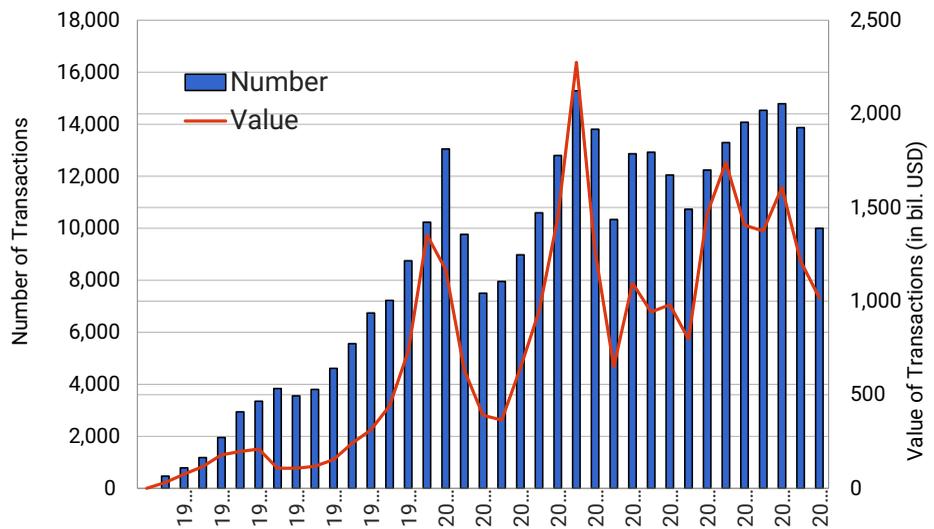

Figure 1.
Cross-border mergers and acquisitions

Source: Thompson Financial
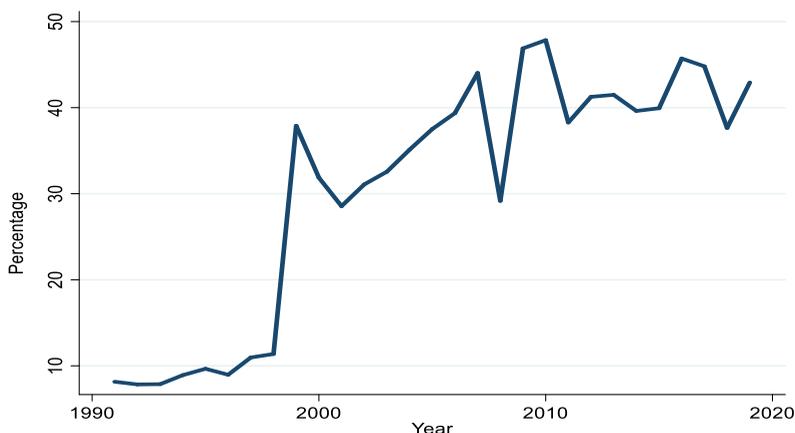
Source: United Nations Conference on Trade and Development

Figure 2.
FDI stock in South
Africa

2010, FDI stocks recorded a high of 47.84% of GDP. From 2011 onwards, FDI stocks fluctuated to a large extent and exhibited a downward trend. This downward trend in FDI stocks posts 2011 has coincided with a decline in economic growth and a slight increase in poverty levels as shown in Figures 3 and 4. Poverty levels declined drastically since the early 2000s; however, since 2011, poverty levels have been on an upward trajectory propelled by the slowdown in economic growth and persistently high unemployment rate.

The graphical analysis has shown that there is a link between FDI stocks, economic growth and poverty levels in South Africa. Furthermore, the expected FDDs which can be measured by a reduction in FDI stocks will be detrimental to economic growth and the achievement of socioeconomic goals such as poverty alleviation.

3. Literature review
The theoretical framework that underpins the study is drawn from the literature on the determinants of divestment and the neoclassical, endogenous and new growth theories. Theories
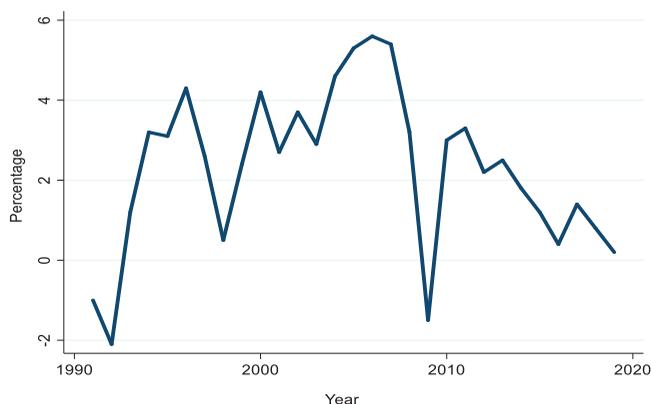
Source: World Bank

Figure 3.
GDP growth in South
Africa

on the determinants of divestment include Dunning's (1980) eclectic theory and Boddewyn's (1983) reverse theory. These theories are introduced to conceptualise the phenomenon of FDD. Dunning (1980) suggested that foreign direct investment is determined by three factors or conditions. Firstly, the ownership of intangible assets which is referred to as ownership advantages. Secondly, once the first condition is satisfied, the firm engaging in FDI should be able to internalise the ownership advantages rather than selling them to other firms. Thirdly, once the first and second conditions are met, the firm should be able to profit from the use of the ownership advantages rather than serving foreign markets through exports. Using Dunning's eclectic theory of international production, Boddewyn (1983) proposed the reverse theory which defines FDD as the reverse process of FDI which occurs when at least one of the three conditions proposed by Dunning (1980) is not satisfied. According to the reverse theory, FDD is undertaken when firms lose ownership advantages, operate in a particular market where it is unprofitable to exploit any possible competitive advantages or when a firm deems it profitable to serve a foreign country through exports (Bagozzi, 1980; Grosse, 1981).

As shown above, the theories explaining FDD are centred on the causes of the phenomenon and not the effects. The effects of FDD can be traced to neoclassical and endogenous growth theories. The neoclassical growth theories of Solow (1956) and Swan (1956) are of the view that labour, capital accumulation or technological progress are the major contributors to economic growth and development (Felipe, 1999). The neoclassical growth model can be specified as follows:

$$Y_t = F(K_t, \ A_t L_t) \tag{1}$$

where Y is output or production, K is capital, A is knowledge, L is the labour input and the t subscript represents time. AL is regarded as the effectiveness of labour which represents technological progress or knowledge.

The Solow–Swan model assumes that the growth in capital accumulation is not a significant determinant of output in the long term. FDI promotes economic growth by increasing the amount and/or the efficiency of investment in the host country in the short run. The effectiveness of labour is the most important determinant of output or economic
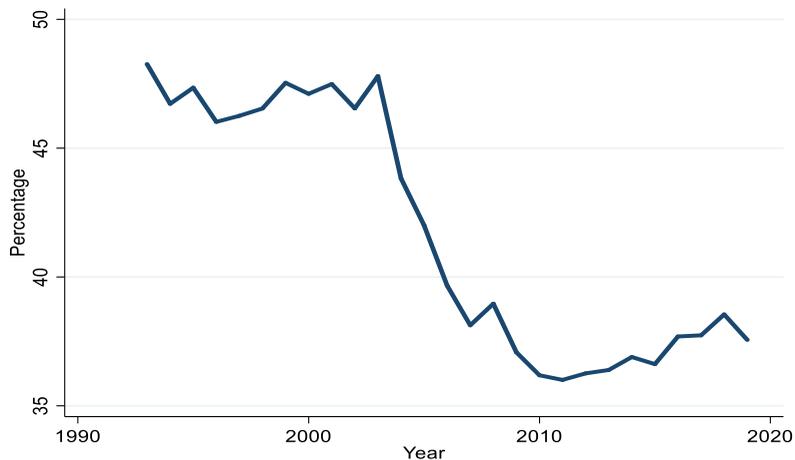
Source: Quantec

growth in the long run. However, the effectiveness of labour or technology is regarded as an exogenous component in the model. The endogenous growth models of Romer (1986) and Lucas (1988) modified the original neoclassical model and incorporated technological progress as an endogenous factor as follows:

$$Y_t = F(K_t, \ A_t, L_t) \tag{2}$$

Romer (1986) initially assumed that technological developments are unplanned activities attributed to firm investments in capital. However, Romer (1990) modified the theory to allow for technological progress to be driven by planned activities by firms responding to financial incentives. Furthermore, knowledge gained from technological developments was assumed to be non-rival but partially excludable. Endogenous growth theories expand the notion of capital to include investment in human capital, skills and research and development including other tangible capital (Romer, 2012). Though not stated explicitly, endogenous growth theories highlight the positive contribution of FDI to economic growth and development through technological diffusion, innovation and knowledge accumulation (Mankiw *et al.*, 1992; Snowdon and Vane, 2005; Todaro and Smith, 2015).

The new growth theory developed by Grossman and Helpman (1990, 1991) incorporated the effects of trade into the growth models/production functions as follows:

$$X_i = KF_i(T_i, \ L_i) \tag{3}$$

where K is knowledge, T and L are land and labour, respectively, and i represents a specific sector.

The stock of knowledge accumulation can be specified as follows:

$$K = aX_w \tag{4}$$

where X_w represents world output.

Equation (4) suggests that the stock of knowledge is determined by world output. Therefore, trade in goods and services may promote economic growth through technological spillovers. International capital markets provide a channel for the enhancement of capital and knowledge accumulation which in turn accelerates economic growth. Furthermore, Grossman and Helpman (1991) suggest that policies that hinder international trade impact negatively domestic innovation and in turn slow economic growth. The various growth theories imply that FDDs contribute to the slowdown of economic growth and development by hindering capital deepening, technological diffusion, labour productivity and increasing unemployment. Therefore, the study tests the hypotheses that FDD has a negative effect on economic growth and poverty alleviation (a measure of development) in South Africa.

There is scant evidence on the effect of FDD on economic growth and development as most studies focus on the FDI inflows to the growth nexus. Empirical literature highlights the positive impact of FDI on economic growth in developing countries through the development of labour skills, technological transfer, industrial re-organisation, influencing production, income and the whole economy (Owusu-Nantwi and Erickson, 2019; Dinh *et al.*, 2019). Furthermore, technological progress through capital transfer has a significant impact on economic growth, and national productivity increases the industry's role in achieving a GDP major growth rate. Studies performed in African countries (Onakoya, 2012; Awolusi and Adeyeye, 2016; Malikane and Chitambara, 2017; Sunde, 2017; Masipa, 2018) also found

a positive relationship between economic growth and FDI inflows. On the other hand, other studies report a negative or insignificant relationship between FDI inflows and economic growth (Alvarado *et al.*, 2017; Velonjara and Gondje-Dacka, 2019).

Most empirical studies on FDD focus on the firm perspective and investigate the effect of macroeconomic factors and firm-specific characteristics on divestment (Nguyen *et al.*, 2022; Schmid and Morschett, 2020; Soule *et al.*, 2014; Amankwah-Amoah *et al.*, 2013; Chung *et al.*, 2010; McDermott, 2010; Belderbos and Zou, 2006; Benito, 1997). The results show that divestment can be viewed as a strategic decision in response to changes in the external environment. For instance, Nguyen *et al.* (2022) showed that economic and political factors have a significant impact on FDD. Schmid and Morschett (2020) used meta-analysis to show that factors such as the international experience of the parent firm's host country as well as subsidiary product similarities influence subsidiary divestment. Soule *et al.* (2014) showed that firm specific factors and political stability are important determinants of FDD.

There is scant literature on the effect of FDD on economic growth and development. A study by Khaing (2016) reported a negative relationship between FDD and economic growth in both the long run and short run in Myanmar using the autoregressive distributed lag (ARDL) model. Glomsrød and Wei (2018) simulated the likely effect of fossil fuel divestment and green bonds on financial flows, economic growth and the energy market using a computable general equilibrium model. The authors found that fossil divestment would lead to a 1.6% increase in global GDP compared to the business-as-usual scenario by 2030. The findings of the study are of particular interest in this study given the FDD in the South African mining sector because of concerns about global warming.

The review of the available empirical literature shows that there is scant evidence of the effect of FDD on economic growth and development in particular. Most studies investigated the macroeconomic determinants of FDD from a firm perspective. Available studies on the effect of FDD on economic growth include Khaing (2016) and Glomsrød and Wei (2018). However, these studies neglected the effect of FDD on economic development. Therefore, this study's contribution to literature is as follows. Because of the view that economic growth is a necessary but not a sufficient condition for the achievement of socioeconomic development, the study goes a step further than the studies by Khaing (2016) and Glomsrød and Wei (2018) by investigating the effect of FDD on development in South Africa.

4. Data and methodology

This section presents the data and outlines the methodological approach of the study. Because of data limitations, the study used inward FDI stock as a percentage of GDP as a proxy for divestment. Inward FDI stock is defined by OECD as the total amount of direct investment in a country at a particular point in time. Therefore, a reduction in inward FDI stock was used as a proxy for FDD. The NARDL technique (discussed below) with the ability to decompose FDI stock into positive and negative changes was used for the empirical analysis. The negative change of FDI stock which represents the sale of foreign assets was thus used as an indicator of FDD. This approach is supported by the reverse theory proposed by Boddewyn (1983) which defines FDD as the reverse process of FDI. The percentage of the population living below the poverty datum line was selected as the proxy for development because of its links to other development indicators such as inequality and employment. The study uses time series analysis with data from 1991 to 2019. A description of the data and sources is provided in Table 1.

Variable	Description	Source
FDI	Inward FDI stock as a percentage of GDP	UNCTAD
GDP	Growth rate of GDP	World Bank
INF	Percentage change in consumer price index	World Bank
FREE	Economic freedom index measures the extent to which policies and institutions support freedom of choice, freedom to engage in voluntary exchange and freedom to market entry	Fraser Institute
TRA	Exports plus imports as a percentage of GDP	World Bank
GOV	Government consumption expenditure as a percentage of GDP	World Bank
CRED	Credit to the private sector as a percentage of GDP	World Bank
UNE	Unemployment rate	World Bank
POV	The percentage of the population earning an income below the poverty line	Quantec

Note: UNCTAD: United Nations Conference on Trade and Development

Table 1.
Data description

The empirical model for the GDP–divestment nexus is specified as follows:

$$GDP_t = \alpha_1 + \alpha_2 FDI_t + \alpha_3 INF_t + \alpha_4 FREE_t + \alpha_5 TRA_t + \alpha_6 GOV_t + \alpha_7 CRED_t + \varepsilon_t \quad (5)$$

where ε_t is the error term.

Inflation is used to capture the effect of macroeconomic stability on economic growth. High and volatile inflation is an indication of macroeconomic instability which retards economic growth. Economic freedom caters for institutional quality which incorporates the rule of law and an unbiased judiciary (Fraser Institute, 2020). Institutional quality encourages investment and promotes economic growth. Trade openness and government consumption expenditure are major macroeconomic determinants of economic growth based on the Keynesian growth framework (Snowdon and Vane, 2005). Credit to the private sector is a measure of financial development which enhances economic growth through the facilitation of savings and investments, minimising risk and promoting the exchange of goods and services (Levine, 1997).

The poverty–divestment nexus is represented by the following specification:

$$POV_t = \alpha_1 + \alpha_2 FDI_t + \alpha_3 FREE_t + \alpha_4 GOV_t + \alpha_5 CRED_t + \alpha_6 UNE_t + \varepsilon_t \quad (6)$$

According to World Bank (2018), unemployment is one of the major contributors to high poverty levels in South Africa. The mismatch between skills and job requirements prevents unskilled workers from participating in the economy. Economic freedom captures the effect of institutional quality and policies on poverty levels. Restrictive regulatory mechanisms and low institutional quality hinders the growth of businesses and contributes to high unemployment and poverty (World Bank, 2018). According to Gupta *et al.* (2014), access to financial services such as credit may be instrumental to poverty reduction, hence credit to the private sector is included as a control variable. Government expenditure on transfers and subsidies may promote poverty alleviation by enhancing the incomes of poor individuals (Anderson *et al.*, 2018).

The study uses the NARDL technique proposed by Shin *et al.* (2014) to test for the asymmetries in the relationship between FDI stocks and economic growth. The NARDL technique is an extension of the linear ARDL approach suggested by Pesaran *et al.* (2001). The NARDL is selected for this study to investigate the effect of declining inward FDI stock on economic growth and poverty in South Africa. Declining inward FDI stock is an indication of FDD as foreign firms dispose of their assets.

The NARDL specification of equation (5) is as follows:

$$\Delta GDP_t = \beta_1 + \rho GDP_{t-1} + \delta_1^+ FDI_{t-1}^+ + \delta_2^- FDI_{t-1}^- + \delta_3 INF_{t-1} + \delta_4 FREE_{t-1} + \delta_5 TRA_{t-1}$$
$$+ \delta_6 GOV_{t-1} + \delta_5 CRED_{t-1} + \sum_{i=1}^{p} \beta_1 \Delta GDP_{t-i} + \sum_{i=0}^{q} \beta_2^+ \Delta FDI_{t-i}^+$$
$$+ \sum_{i=0}^{q} \beta_3^- \Delta FDI_{t-i}^- + \sum_{i=0}^{q} \beta_4 \Delta INF_{t-i} + \sum_{i=0}^{q} \beta_5 \Delta FREE_{t-i}$$
$$+ \sum_{i=0}^{q} \beta_6 \Delta TRA_{t-i} + \sum_{i=0}^{q} \beta_7 \Delta GOV_{t-i} + \sum_{i=0}^{q} \beta_6 \Delta CRED_{t-i} + \mu_t$$

$$(7)$$

The NARDL specification of equation (6) is as follows:

$$\Delta POV_t = \beta_1 + \rho POV_{t-1} + \delta_1^+ FDI_{t-1}^+ + \delta_2^- FDI_{t-1}^- + \delta_3 FREE_{t-1} + \delta_4 UNE_{t-1}$$
$$+ \delta_5 GOV_{t-1} + \delta_6 CRED_{t-1} + \sum_{i=1}^{p} \beta_1 \Delta POV_{t-i} + \sum_{i=0}^{q} \beta_2^+ \Delta FDI_{t-i}^+$$
$$+ \sum_{i=0}^{q} \beta_3^- \Delta FDI_{t-i}^- + \sum_{i=0}^{q} \beta_4 \Delta FREE_{t-i} + \sum_{i=0}^{q} \beta_5 \Delta UNE_{t-i}$$
$$+ \sum_{i=0}^{q} \beta_6 \Delta GOV_{t-i} + \sum_{i=0}^{q} \beta_7 \Delta CRED_{t-i} + \mu_t$$

$$(8)$$

The symbols p indicate the adjustment coefficient, whereas Δ is the difference operator. The long- and short-run coefficients are represented by the symbols δ_1^+, δ_2^- and β_2^+, β_3^-, respectively.

FDI is thus decomposed into the positive and negative components as follows:

$$FDI_t^+ = \sum_{j=1}^{t} \Delta FDI_j^+ = \sum_{j=1}^{t} \max \left(\Delta FDI_j, 0 \right)$$

$$(9)$$

$$FDI_t^- = \sum_{j=1}^{t} \Delta FDI_j^- = \sum_{j=1}^{t} \min \left(\Delta FDI_j, 0 \right)$$

$$(10)$$

Prior to the estimation of the long- and short-run coefficients, the presence of cointegration is tested using the Pesaran et al.'s (2001) bounds test. The null hypothesis of the bounds test is that of no cointegration. The Wald test is used to test for long- and short-run asymmetries. This is equivalent to testing the following null hypotheses: $(\delta_1^+ = \delta_2^-)$ and $(\beta_2^+ = \beta_3^-)$ which indicate long- and short-run symmetries, against the alternative of asymmetry.

5. Empirical results
Table 2 shows the descriptive statistics. The average GDP growth over the selected study period is just over 2.3% which is an indication of the challenge of low economic growth in South Africa. The minimum value of 2.1% was recorded in 1992 before the election of the

democratic government, whereas the largest value of 5.6% was recorded in 2006. In spite of the decline in poverty levels, on average between 1991 and 2019 over 41% of the population earned incomes below the poverty datum line. The stock of inward FDI averaged just over 30% of GDP over the chosen period.

Unit root tests are conducted to determine the order of integration of the different variables. The ARDL technique may be used in the presence of variables of different orders of integrations; however, variables integrated of order two should not be incorporated. The study used the conventional unit root tests such as the augmented Dickey–Fuller proposed by Dickey and Fuller (1981), the Phillips and Perron (1988) test and the DF-GLS unit root test developed by Elliott *et al.* (1996). However, these conventional unit root tests do not cater to non-linearities in the data (Otero and Smith, 2017). As such, the study also uses the Kapetanios, Shin and Shell (KSS) unit root test based on a model that is non-linear in nature (Kapetanios *et al.* (2003). The stationarity results are presented in Table 3 (conventional tests) and Table 4 (KSS test). The variables are either stationary or integrated of order one. The KSS test which is the most preferred indicates that GDP, trade, inflation and unemployment are stationary in level while the rest of the variables are stationary at first difference.

The approach to the empirical analysis is as follows. Firstly, linear ARDL models have estimated both the GDP–FDI nexus as well as the poverty–FDI relationship. Secondly, non-linear ARDL models are estimated and tests for asymmetry are performed. The bounds test results presented in Table 5 show that cointegration is detected in both models. Diagnostic

Variable	Mean	SD	Min.	Max.
GDP	2.314	1.986	−2.1	5.6
FDI	30.595	14.285	7.842	47.84
INF	6.952	3.553	2.9	17
TRA	54.027	8.941	37.487	72.865
CRED	133.007	16.958	99.376	160.125
UNE	28.111	2.839	22.433	33.473
POV	41.747	4.801	36.005	48.261
FREE	6.593	0.397	5.626	6.95
GOV	19.495	0.993	17.814	21.296

Table 2.
Descriptive statistics

	ADF		PP		GF-GLS	
Variable	Level	1st diff.	Level	1st diff.	Level	1st diff.
FDI	−1.597	−5.699*	−1.550	−7.992*	−2.122	−5.879*
GDP	−3.517*	−4.936*	−2.833***	−5.791*	−3.039**	−5.281*
POV	−2.114	−4.580*	−4.703*	−11.319*	−2.230	−3.911*
TRA	−2.093	−4.219*	−1.927	−6.066*	−2.604	−4.492*
CRED	−2.144	−4.028*	−2.247	−5.324*	−2.670	−4.295*
INF	−4.313*	−4.653*	−3.748*	−6.289*	−3.157***	−4.799*
UNE	−1.548	−3.754*	−1.388	−3.847*	−1.903	−3.883*
GOV	−1.126	−5.127*	−1.001	−5.387*	−2.508	−5.306*
FREE	−3.719*	−2.918**	−3.252**	−2.916**	−1.035	−3.943*

Note: *, ** and ***indicate significance at the 1, 5 and 10% levels, respectively

Table 3.
Unit root tests

		KSS	
Variable	Level		1st diff.
FDI	−1.594		−4.753*
GDP	3.572**		−5.672*
FREE	−2.494		−2.756**
TRA	−3.556**		−3.387**
CRED	−2.246		−3.828*
INF	−3.103**		−5.230*
UNE	−3.271**		−5.953*
POV	0.470		−4.303*
GOV	−1.055		−4.647*
Note: * and **indicate significance at the 1 and 5% levels, respectively			

Table 4.
KSS unit root rest

Model	*F*-statistic	Conclusion
FDI and GDP	9.090*	Cointegration
FDI and POV	9.994*	Cointegration
Note: *Indicates significance at the 1% level		

Table 5.
Linear ARDL bounds
test

tests were performed on the estimated models such as the Breusch (1978), Godfrey (1978) LM test for autocorrelation, Breusch and Pagan (1979) test for heteroscedasticity, Jarque and Bera (1980) normality test and the Ramsey (1969) RESET test for model specification. The diagnostic results suggest that there is autocorrelation in both models (although weakly significant in the GDP–FDI nexus). As shown in Table 7, the coefficients of FDI in both specifications are in line with theoretical expectations. The coefficients of most of the control variables in both models are not in line with a priori expectations which is an indication of model instability and modelling issues. The NARDL model is thus estimated to take into account non-linearities or asymmetries in the data (Table 6).

The NARDL bound tests both specifications confirm the presence of cointegration as outlined in Table 8. The diagnostic tests performed on the NARDL model are largely similar to those used in the linear ARDL model with the exception of the autocorrelation test. The Portmanteau test developed by Ljung and Box (1978) is used in this instance. Both models pass the diagnostic tests as shown in Table 9, and therefore, the analysis proceeds to the testing of asymmetry and interpretation of the coefficients.

Table 10 presents the long- and short-run slope coefficients of the NARDL model as well as the asymmetry tests. Long-run asymmetry is detected in both models as the null of no

Test	FDI and GDP	FDI and poverty
Autocorrelation	3.512 [0.061]	15.735 [0.001]
Heteroscedasticity	2.92 [0.088]	0.01 [0.9731]
Normality	2.123 [0.346]	0.614 [0.736]
RESET test	3.97 [0.071]	0.73 [0.598]
Note: The figure in parenthesis are *p*-values		

Table 6.
Diagnostic tests

Variable	FDI and GDP	FDI and poverty
Long run		
FDI	0.330 (2.07)***	−0.500 (−3.12)**
FREE	−16.354 (−2.85)**	12.705 (2.55)**
GOV	−2.612 (−4.80)*	3.714 (4.74)*
CRED	−0.197 (−2.68)**	0.547 (3.30)**
INF	−1.94 (−3.49)*	
TRA	0.219 (1.53)	
UNE		1.201 (2.75)**
Short run		
ECM	−0.625 (−3.22)**	−0.911 (−3.44)**
GDP (−1)	0.234 (1.31)	
POV (−1)		−0.191 (−0.90)
ΔFDI	0.121 (2.22)***	0.453 (3.75)*
ΔFREE	−7.301 (−2.66)**	3.096 (0.51)
ΔGOV	2.281 (5.33)*	−0.181 (−0.17)
ΔTRA	0.469 (7.44)*	
CRED		−0.494 (−5.22)*
UNE		−1.309 (−2.90)**
Constant	110.628 (6.58)*	−228.597 (−3.27)**

Note: *, ** and ***indicate significance at the 1, 5 and 10% levels, respectively

Table 7.
Long run and short
run

Model	*F*-statistic	Conclusion
FDI and GDP	10.25*	Cointegration
FDI and POV	6.516*	Cointegration

Note: *Indicates significance at the 1% level

Table 8.
NARDL bound test

Test	FDI and GDP	FDI and POV
Autocorrelation	5.958 [0.8188]	9.314 [0.409]
Heteroscedasticity	0.7085 [0.3999]	0.306 [0.580]
Normality	0.7613 [0.6834]	0.091 [0.956]
RESET test	0.1068 [0.9525]	0.590 [0.641]

Note: The figure in parenthesis are *p*-values

Table 9.
NARDL diagnostic
tests

asymmetry is rejected at the 5% level. However, there is no evidence of short-run asymmetry and hence the analysis of the results will centre on the long-run coefficients. An increase in FDI stock has a positive but weakly significant effect on economic growth in South Africa. Awolusi and Adeyeye (2016) also found that FDI had a positive but weakly significant effect on economic growth in South Africa.

The coefficient of interest in the study is the negative component of inward FDI stock, which is negative and significant. This suggests that FDD is detrimental to economic

Variable	FDI and GDP	FDI and POV
Long run		
FDI$^+$	0.165 [4.439]***	−0.602 [6.133]**
FDI$^-$	−0.488 [8.006]**	1.456 [6.472]**
FREE	−7.833 (3.969)***	2.923 (0.56)
GOV	1.788 (2.31)**	−5.654 (−2.78)**
CRED	−0.089 (−1.47)	−0.030 (−0.39)
INF	−0.884 (−2.50)**	
TRA	0.626 (2.34)**	
UNE		0.447 (1.09)
CONSTANT	4.546 (0.23)	79.491 (1.23)
Short run		
ECM	−1.195 (−3.44)*	−0.997 (−2.49)**
FDI$^+$	0.198 (3.20)**	−0.060 (−3.43)*
FDI$^-$	0.583 (4.46)*	−1.451 (−4.16)*
Asymmetry test		
Long-run asymmetry	9.875**	5.961**
Short-run asymmetry	0.010	7.688***

Note: *, ** and ***indicate significance at the 1, 5 and 10% levels, respectively

Table 10.
NARDL long- and
short-run results

growth in South Africa. The findings support the proposition from the various growth theories as a reduction in FDI stock will slow the pace of technological diffusion, innovation and knowledge accumulation which in turn impacts negatively on economic growth. The study fails to reject the hypothesis that FDD is detrimental to economic growth. The result of the study is in line with those of Khaing (2016) who found that divestment has a negative and significant effect on economic growth in Myanmar. Furthermore, the coefficient of the negative component of FDI stock is significantly larger than that of the positive component (as indicated by the asymmetry test), suggesting that FDD has a larger effect on economic growth than an increase in FDI stock. The findings contradict those of Glomsrød and Wei (2018) (albeit using different methodologies) who found that divestment in fossil fuels will increase economic growth by 2030. It should be noted that because of South Africa's reliance on FDI especially in the mining sector, divestment will hinder economic growth if done prematurely.

Economic freedom has a negative but insignificant effect on economic growth. This is indicative of the low levels of economic freedom in South Africa as the country was ranked 90th out of 162 countries in 2018. Government consumption expenditure and trade openness have a positive and significant effect on economic growth which confirms a priori expectations. Inflation as a measure of macroeconomic instability is negatively signed which supports theoretical expectations. Credit to the private sector has an insignificant effect on economic growth.

The effect of FDI stock on poverty mirrors that of economic growth to a large extent. The positive change in FDI stock reduces poverty levels and the result is significant at the 5% level. The finding contradicts that of Magombeyi and Odhiambo (2018) who reported that the effect of FDI on poverty in South Africa is inconclusive. The coefficient of the negative change in FDI stock is positively signed suggesting that an increase in FDD increases poverty. In line with the finding in the GDP–divestment nexus, the effect of FDD outweighs that of an increase in FDI stock. Therefore, FDD is detrimental to the goal of poverty alleviation possibly because of the reduction in economic growth, employment and incomes

associated with closures of businesses or a scale down of operations. Government consumption expenditure reduces poverty as indicated by the negative and significant coefficient. Credit to the private sector has an insignificant effect on poverty which is an indication of the history of financial exclusion of a significant portion of the population including SMME owners (Schmidt *et al.*, 2017). However, access to financial services has improved over the years. As expected, unemployment has a positive effect on poverty, however, the coefficient is insignificant.

The results imply that FDDs are detrimental to economic growth and development in South Africa. The country relies on foreign direct investments to a large extent, and this is emphasised by the government's attempt to attract US$100bn in FDI by 2023. The socio-economic challenges of poverty, unemployment and inequality have been well documented by the World Bank (2018). Furthermore, as shown in this study, economic growth has been on a downward trend since 2011 and this has contributed to a slowdown in the progress towards the achievement of the socio-economic goals such as poverty alleviation. The COVID-19 pandemic has impacted negatively on the economic performance of the country and increased the unemployment rate and poverty levels. Therefore, the expected FDDs from investment banking firms and those in the mining sector will be detrimental to the achievement of socio-economic goals and further slow the recovery process from the COVID-19 pandemic. Furthermore, divestment might lead to a reversal of prior gains that the country has made in achieving some of the socio-economic goals. The targets set in the NDP of eradicating poverty and inequality, creating 11 million jobs and reducing the unemployment rate to 6% by 2030 will not be achieved without significant interventions in attracting and retaining inward FDI. The effect of the negative change of FDI stock outweighed that of the positive change for both the GDP and poverty specifications, suggesting that the impact of FDD is larger than the effect of an increase in FDI stock. The findings have profound implications for policymakers, especially in the implementation and adoption of FDI retention policies.

6. Conclusion and recommendations

The purpose of the study was to investigate the effect of FDD on economic growth and development in South Africa. Because of data limitations, the study used inward FDI stock as a percentage of GDP as a proxy for divestment. The NARDL technique with the ability to decompose inward FDI stock into positive and negative changes was used for the empirical analysis. The negative change of inward FDI stock which represents the sale of foreign assets was thus used as an indicator of FDD. The percentage of the population living below the poverty datum line was selected as the proxy for development. Two equation specifications were used for the empirical analysis, one where GDP growth was dependent on inward FDI stock and control variables and the other where poverty was dependent on FDI stock and a list of control variables.

The empirical results highlight that FDD is detrimental to economic growth and poverty alleviation. A negative association between GDP growth and the negative change of FDI stock was observed, whereas the relationship between poverty and the negative change of FDI stock was positive. In both equation specifications, the effect of the negative change of FDI stock outweighed that of the positive change, suggesting that the impact of FDD is larger than the effect of an increase in FDI stock. This has profound implications that must be considered by policymakers.

Several recommendations emanate from the study. South African policymakers should use policies that promote the retention of FDI inflows together with those that attract inflows. The major focus of policymakers has been attracting FDI inflows with less

attention given to the retention of foreign investments. World Bank (2019) showed that policymakers need to promote retention of FDI inflows by eradicating irregular behaviour involving adverse regulator changes as well as transfer and convertibility restrictions. Enhancing economic freedom which involves political stability, regulatory framework, tax policies and business freedom is of paramount importance in South Africa. As stated earlier, the country ranked 90th out of 162 countries with regard to the economic freedom index from the Fraser Institute. Other economic freedom factors that need attention include transparency when dealing with multinational corporations as well as the time frame for granting government permits for business operations (World Bank, 2019).

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