Does the Long-Term Developmental Effect of Mergers and Acquisitions and Greenfield Investment Differ in Host African Economies?

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Abstract

The choice between greenfield investment (GFIELDI) and mergers and acquisitions (M&As) is rarely straightforward for host developing countries (DCs), as this subject has not been thoroughly researched. Thus, this study fills this gap in the literature. It compares the overall long-term dynamic effect of GFIELDI and M&As on host African countries (ACs) from 1990 to 2020. The study, in particular, adopted a rigorous analytical framework that optimizes the welfare-decreasing and welfare-increasing effects of these two main FDI entry modes in the countries under study. The study used panel data from 15 African countries and adopted the PMG/ARDL approach. Therefore, the empirical findings of this study surprisingly contradict not only the preferred GFIELDI entry option of governments and development partners but also nearly all of the existing empirical literature in other developing regions. The results specifically demonstrate that while M&As outperform the GFIELDI in terms of their size effects, they both have net positive long-term dynamic effects on real GDP per capita in the studied countries. In practical terms, a 1% increase in GFIELDI has, on average, a weaker positive long-term dynamic effect on real GDP per capita than an equivalent investment in M&As. Except for Malawi and Botswana, evidence shows that the speed of adjustment parameter is consistently negative and statistically significant. South Africa (SA) has the lowest adjustment speed rate (=-0.157), while Morocco has the highest (=-1.554). Our findings have important policy implications, which are outlined in the conclusion of this study.

Keywords: Greenfield investment, mergers & acquisitions, long-term development, real GDP per capita, and speed of adjustment

1. Introduction

Foreign direct investment (FDI) has increasingly captured the interest of policymakers and researchers, especially when it comes to long-term effects as opposed to short-term ones. The reason is the growing overreliance of developing countries' (DCs') on FDI as their primary source of foreign capital for long-term growth (Ayenew, 2022). More importantly, in the context of global economic integration, multinational corporations (MNCs) are becoming more and more prominent (Isaac et al., 2020). According to the dominant theory, FDI inflows into DCs serve to bridge gaps in foreign exchange, skills, technology, and savings-investment, ultimately promoting structural transformation. DCs from one pole to the other, notably in Africa, are keen to encourage FDI inflows.

It goes without saying that these nations' attempts to increase the amount of FDI inflows into their economies. In fact, over the last thirty years, FDI inflows have been essential to these countries' long-term development. One of the things that makes FDI appealing is that it can increase host DCs' multifactor productivity (MP) through knowledge and technology transfer, thereby extending and strengthening these nations' production capacity and export base. In an effort to attract FDI, African nations have liberalised dividend and capital transfer regulations, lowered taxes for MNCs, and provided subsidies, among other things. This is done as a response to the commonly held view that MNCs will rush to relocate in response to policy changes, as the conventional neoclassical model suggests.

It is interesting to note that the aforementioned initiatives and strategies have yielded reasonable outcomes. According to Chen et al. (2015), FDI in Africa is on the rise. It reached \$83 billion in 2021, up from \$2 billion in the late 1980s (UNCTAD, 1995, 2022). It is also becoming more diverse (Chen et al., 2015). However, in terms of FDI inflows, the continent continues to lag behind other regions of the world (Chakrabarti & Ghosh, 2014; Chen et al., 2015; Isaac et al., 2020). Moreover, as total FDI increased in importance over the last three decades, so did its entry modalities. Usually, FDI enters foreign markets via two main entry modes: Mergers and Acquisitions (M&As) and Greenfield Investment (GFIELDI). These entry modes of FDI are distinct from one another. While M&As comprise the transfer of an existing production facility from a local to a foreign firm, GFIELDI entails the establishment of a new plant/production facility by a foreign firm in a particular nation (Bayar, 2017; Harms & Méon, 2014; Harms & Méon, 2018).

Thus, GFIELDI directly impacts the productive capacity (PC) of the host country (Nguyen et al., 2021). As a result, many governments favour the GFIELDI option, expecting that it will lead to more positive externalities, and show a degree of concern regarding M&As. In particular, policymakers are concerned that foreign ownership of acquired companies may result in lower efficiency, investment, and employment in domestic markets compared to domestic ownership (Bertrand et al., 2012). One could also look at M&As from another perspective, namely by considering that even in the absence of a direct increase in PC, they may exert an indirect impact on the host country's PC by directing investible funds to the previous owners of the acquired firm. Thus, some insights can be gained by comparing the long-term effects of the two types of FDI entry modes of the same size on PC (Ashraf et al., 2016; Lall, 2002).

Another advantage of M&As for DCs is the provision of finance to struggling businesses as well as specific skills to those with noticeably inadequate management. According to Marinescu (2017), M&As may eventually beat GFIELDI in terms of welfare effect since they provide the acquired firms with much-needed R&D activities, superior technology and management skills, a shift in mentality through labor discipline, not to mention financial credibility. For instance, M&As may transfer more knowledge spillovers to local corporations (LCs) more rapidly and easily because these firms already have links (Narula & Driffield, 2012; Nguyen et al., 2021). According to Lall (2002), M&As foster corporate and international restructuring in the Global South. Thus, aggressive M&As with high levels of technology and expertise may boost the value of tiny LCs, making them more appealing to international investors.

Conversely, GFIELDI finds it challenging to form new links with local players, and success is not guaranteed. Even more concerning is the fact that, in contrast to M&As, GFIELDI typically exposes LCs from non-competitive environments, like those in Africa, to global competition without compensating for their disadvantages. LCs are often forced out of business by MNCs as they outmaneuver their domestic rivals and take market share (Ro, 2022). Above all, while it has been shown that GFIELDI offers exclusively economic benefits, it also has a number of major drawbacks, both economic and non-economic. As per (Ashraf et al. 2021; Doytch & Ashraf 2022), GFIELD has been observed to exacerbate environmental disasters, sustain economic inequality, and erode national sovereignty in host DCs (Bezuidenhout & Kleynhans, 2015; Carbaugh, 2004; Kaur, 2014; Lewis, 2003). Thus, in DCs, social, environmental, and political costs may outweigh the economic benefits of GFIELDI (Karangwa & Su, 2023).

Given the foregoing distinctions, we hypothesize that the long-term developmental effects of M&As and GFIELDIs on the development of host ACs differ and that their implications are worth discussing. Since African countries are becoming increasingly reliant on these two entry modes of FDI, we feel that it is crucial to examine their long-term developmental impact and determine policy implications. Previous research has helped advance our understanding in this regard by examining the costs and benefits of both FDI entry modes. They did so independently (Ly-My et al., 2023), because the standard paradigms do not provide a framework for considering both in a combined scenario. However, the findings of these research initiatives on the effects of FDI entry modes in host DCs leave one critical question unanswered: Do both FDI entry modes exert a net positive and equal long-term dynamic effect on host DCs? To our knowledge, no extensive empirical research has attempted to address this fundamental question.

This work contributes to the literature in the following six ways: (1) we address the fundamental question raised above in DCs, particularly in Africa. Rather than focusing solely on benefits (as suggested by liberal theories) or costs (as stated by dependency theories), (2) this study proposes and tests an optimisation model that unifies disparate empirical evidence on the effect of FDI entry modalities. Without such comprehensive research, policymakers in DCs would not be able to maximise the potential benefits of FDI through a targeted entry mode strategy (Ito et al., 2023). (3) This study clearly lays out strong arguments for why, in comparison to other DCs, M&As might outperform GFIELDI in terms of long-term developmental impact on host ACs' development.

(4) The present study improves upon past research methods. Because it has been well documented in the economic literature that FDI is strongly endogenous with development, the Panel Auto-Regressive Distributed Lag (P-ARDL) modelling approach selected for this study seeks to control for endogeneity bias (Ekholm, 2017), a precaution that was surprisingly overlooked in most past studies on the relationship between FDI and development (Luu, 2016). (5) By capturing both benefits and costs in a single model and generating an overall effect, our findings offer new insights beyond the general notion that FDI entry modes involve both costs and benefits. (6) Finally, unlike previous empirical research that looked at both rich and developing countries, whereby conclusions could have been influenced by data comparability biases (Luu, 2016), this study is only based on a sample with comparable levels of political and economic systems.

Africa, the world's poorest continent, is convinced that the long-term developmental effects of the two FDI entry types are critical to ending its predicament and achieving development (Luu, 2016). It is crucial, in our opinion, to establish whether the FDI entry mode matters in achieving these aspirational goals. Using a methodology that has significant advantages over previous co-integration methodologies as well as panel data from 15 African countries with comparable levels of political and economic systems, the study arrives at the conclusion that a 1% increase in GFIELDI has a weaker long-term developmental effect on real GDP per capita than an equivalent investment in M&As. As a result, host ACs should be keenly interested in FDI entry modes.

The following are the remaining study sections: Section 2 reviews pertinent literature; Section 3 describes data and estimation techniques; Section 4 presents and discusses empirical findings; and Section 5 concludes and provides policy advice.

2. Review of the Literature

2.1 Theoretical Review

Various theoretical literatures offer different predictions regarding the impact of FDI on host DCs. To predict these effects, endogenous growth, dependency, and neo-classical economic models are widely used in the literature. To begin, the Neo-Classical Growth Model developed by Solow (1956) and Swan (1956) maintains that FDI can direct capital investment to the productive sectors of a capital-scarce country, thereby boosting growth, but only if the decline in capital's marginal productivity (MP) eventually converges to a long-run equilibrium state over time.

According to the preceding, MNCs, in the short-run, shift from countries with low MP and abundant capital to those with high MP and a scarcity of capital. In the long run, however, the rate of output growth in the receiving country is exclusively dictated by technical progress. The latter is regarded as exogenously determined. Therefore, technological improvement occurs independently of growth in the long-run. Hence, the theory assumes that inward FDI can only have a short-term impact, not a long-run one. This position is predicated on the premise that a fully competitive market exists, that manufacturing processes are universal, and that FDI migration is a reaction to fluctuations in interest rates.

Endogenous growth theorists, on the other hand, argue that technical change through investment in research and development (R&D) and knowledge-intensive skills acquisition through schooling, training, or learning by doing remain vital to long-term development (Adams, 2009; Romer, 1986). Weak technological capabilities, combined with the increasing complexity of emerging technologies, are the primary causes of the widening gap between the Global South (GS) and the Global North (GN) (Romer, 1993). FDI flows from the GN are expected to bridge the said gaps by bringing various development ingredients to host DCs, such as capital, technology, and expertise (Adams, 2009), all of which are in short supply in these countries. Romer (1986) referred to these gaps as "idea and object gaps." As a result, DCs feel obliged to host FDI in a bid to acquire capital as well as new technologies and ideas from the GN (Tiits, 2007). For instance, FDI is expected to enable host DCs to accomplish their development goals by relieving them of the constraints of mandated national savings, transferring technology, promoting cutting-edge management approaches, and facilitating access to international markets. However, African countries have yet to achieve these goals, which has prompted policymakers to concentrate more on the composition of FDI inflows.

The two theories discussed above, both commonly labelled as liberal, fail to consider the side effects (costs) of FDI on other developmental dimensions, such as the ecological, social, and political aspects. These side effects can severely impact the long-term development of host DCs. To address this shortcoming in the literature, we propose and test a multidimensional model that also encompasses the negative effects of FDI entry modalities on other dimensions of development. We believe that this approach provides an in-depth conceptual framework for rigorously assessing the long-term impact of FDI in host DCs. In other words, the present study draws on both dependency and liberal theories. Indeed, long-term development requires a balanced growth strategy that considers social, economic, environmental, and institutional factors.

According to dependency theory, an outsider-controlled economy cannot evolve naturally. That is, foreign capital controls could prevent natural linkages from forming. Such an economy would thus develop in a fragmented fashion. Gains would be shifted to the ruling class, whose interests would coincide with those of foreign money holders, and the result would be worsening inequality and economic stagnation. This perspective shows FDI as a new form of economic colonialism, whereby MNCs take advantage of the host country's comparative advantages. Dependency theorists claim that the demand for markets and low-cost inputs in northern industries has fueled the rise of FDI. In this regard, FDI can have unanticipated consequences such as widening wealth disparities, environmental deterioration, and a severe loss of national sovereignty. Subscribers to this approach frequently see foreign investors as ruthless exploiters.

Overall, existing theoretical explanations of the manner in which FDI affects growth in DCs are skewed and unreconciled, which deprives them of any meaningful application. Lack of a comprehensive framework for analysing the overall welfare effect of each FDI entry mode on host DCs may be the reason for this. For the purposes of the present study, we chose to address this issue by taking a middle-of-the-road approach. Indeed, FDI has both costs and benefits in any host country. Therefore, concentrating on one side, liberal or dependency, will produce misleading conclusions. In real-world contexts, the essential tenets of both liberal and dependency theories are equally important. It follows that, due to the overall impact of FDI on host DCs, a multidimensional model that accurately captures its dual character is eventually required.

2.2 Empirical Review

The effect of the two major FDI entry modes on numerous dimensions or sub-dimensions of development in host DCs has been extensively debated. The debates aimed at developing hypotheses about how each of the two modes affects these dimensions. The outcome of these debates is mostly inconclusive. The empirical literature that was reviewed in the course of this study fully supports this conclusion. The empirical literature in question is organized as follows:

Ashraf et al. (2016) used LSDV and GMM to examine the impact of M&As and GFIELDI on total factor productivity (TFP) in 123 developed and developing countries between 2003 and 2011. The study found that M&As exert a positive and significant impact on TFP, whereas GFIELDI had an insignificant impact. Ashraf et al. (2021) used the same methodology and a sample of 108 industrialised and developing countries to study the impact of GFIELDI on the environment from 2003 to 2011. They discovered that GFIELDI has a negative environmental impact, which supports the pollution heaven theory. M&As, on the other hand, were found to have a positive environmental impact. The two studies support the fundamental assumptions of both liberal and dependency theories.

By contrast, when Harms & Méon (2018) used FE, 2SLS, and system-GMM approaches to examine the economic impact of two FDI entry components in 127 developed, emerging, and developing nations between 1990 and 2010, they found that GFIELDI had a higher impact on GDP than M&As. And the results were consistent across several estimating approaches. While contradicting our hypothesis, these findings support the liberal theoretical premise that FDI in a host country is free of charge, which is not the case. Similarly, Nguyen (2023) examines the effects of GFIELDI and M&As on domestic entrepreneurship (DE) using a panel data set of 104 countries from 2006 to 2015 and a variety of econometric approaches. Their research findings revealed that M&As and GFIELDI have a beneficial effect on DE. Evidence suggests that GFIELDI has a bigger impact on entrepreneurship in countries with stronger market capacity and institutional support. Human capital (HC) was also found to significantly enhance the benefits of both FDI entry options. Thus, this study defies dependency theory's tenets.

Other studies found no impact from M&As but a negative impact from GFIELDI. One such study is that of Damioli and Marin (2024), who used pooled OLS to assess the impact of innovative FDIs on patent performance in recipient economies. They found that GFIELDI had a detrimental influence on patenting for new innovators, which supports dependency claims (Damioli & Marin, 2024). The authors propose combining policies that encourage CPs to engage with local actors with those that attract GFIELDI. Yet, evidence indicates that M&As do not significantly impact local patent activity. Zhuang and Griffith, (2013) conducted another study, using a number of estimation methods to investigate the influence of M&As and GFIELDI on income inequality in 93 countries between 1990 and 2009. They found that GFIELDI had a significant influence on inequality, while M&As did not. These findings corroborate all of the dependency theory's main tenets. These findings are not surprising, considering that research on the benefits of FDI has indicated the need for complementary factors that boost host countries' ability to absorb potential benefits from FDI.

Harms & Méon, (2014) conducted a similar analysis and used a methodology similar to that of Harms & Méon, (2018) on a panel of 78 countries from emerging and developing economies (1987–2005). They found that

GFIELDI, rather than M&As, had a beneficial growth impact. The M&As results validated the core assumption of the dependency theory. Scholars used different approaches to perform similar research, and their findings were compatible with those of (Harms & Méon, 2014; Nguyen et al., 2021; Ouyang, 2020; Wang & Wong, 2009). The authors suggest that governments in the research areas can offset the negative effects of M&As by implementing measures such as investing sufficiently in human capital.

In contrast, Ly-My, Le, and Park (2023) used the ARDL technique and data from 91 countries from 2005 to 2020 to examine the environmental impact of each of the two entry modes of FDI and discovered that GFIELDI is more harmful to the environment in host countries than M&A. The authors believe that nations should not support any single type of FDI entry mode but rather focus on improving the quality of FDI entry and raising environmental standards (Ly-My et al., 2023). Finally, Ojewumi and Akinlo (2017) employed VAR and VEC models to investigate the link between FDI, growth, and environmental friendliness in 33 SSA countries. The evidence supported the dependency hypothesis by revealing interactions between these series. The paper advises that SSA countries strike a balance between environmental regulations and FDI-friendly policies (Ojewumi & Akinlo, 2017). All of these findings corroborate the essential assumptions of dependency theories.

To summarise, empirical evidence on the impact of FDI entry modes on different dimensions of development in host DCs is mixed and in line with theoretical predictions. In other words, the evidence supports either the liberal claims or the basic premises of dependency theories, or neither (Ha et al., 2021; Harms & Méon, 2018; Luu, 2016). While these studies have helped us understand the various perspectives (costs and benefits) of FDI entry modalities, they do not address the central question in the debate about the effect of FDI entry modes in host DCs: whether either of these two FDI entry modes exerts a net positive long-term dynamic effect on host DCs. The goal of this study is to fill this knowledge gap. We propose and test a rigorous framework that departs from conventional paradigms in that it includes costs as hypothesised by dependency theorists and benefits as hypothesised by liberal theorists into a single framework.

2.3 Hypothesis Development

Despite the fact that both FDI entry modalities have the potential to increase welfare in host DCs under certain conditions, policymakers in these nations believe that GFIELDI is the more productive FDI entry mode, resulting in more spillovers. According to UNCTAD (2000) and Kalsie (2014), M&As typically do not increase the host country's production capacity in the early phases. Thus, most investment promotion agencies favor GFIELDIs as opposed to M&As (Kalsie, 2014; UNCTAD, 2003). In fact, host governments frequently oppose M&As, claiming that they inhibit local ingenuity (Ashraf et al., 2016). We believe that the inconsistencies in the previous empirical research make it impossible to anticipate the overall impact of either of the two FDI modes of entry on host DCs.

Nonetheless, it may be realistic to conclude that GFIELDI has a greater short-term growth impact than M&As. The latter may not directly increase productive capacity, but they may indirectly contribute more to long-term development by increasing productivity through skills and technological transfer, which are often in short supply in host DCs. Bertrand and Zuniga (2006) argue that M&As are crucial for global business and economic restructuring. In particular, according to them, M&A deals hinge on mutual accommodation of the parties' interests. Thus, M&As may have a higher impact than expected due to strong spillover effects from pre-existing links between acquired firms and LCs. Bertrand et al. (2012) discovered that acquired affiliates spend more on R&D than greenfield affiliates, resulting in higher knowledge spillover. This conclusion supports the assumption that post-acquisition R&D investments are required to boost the profitability of acquired enterprises (Damioli & Marin, 2024).

Ro (2022) reveals that LCs prefer M&As deals since they often involve no new entrants and result in significant technology and knowledge spillovers. This is due to the acquired firm's stronger integration into the local supply chain following the purchase. As a result, M&As may push local suppliers to satisfy higher quality standards and faster delivery times, forcing them to modernise their production facilities and create economies of scale (Patel, 2023; Ro, 2022). Meeting overseas affiliates' requests for high-quality products could considerably benefit LCs. This implies that the more M&As rely on local inputs, the greater the motivation for LCs to upgrade their manufacturing facilities. Productivity, innovation, and exports may increase, resulting in long-term development (Patel, 2023). Moreover, M&As are thought to be a magic bullet for possibly insolvent companies (Ferraz & Hamaguchi, 2002).

In the context of GFIELDI, foreign affiliates are less likely to produce greater knowledge externalities for LCs due to the competition for market dominance in the host nation. Yet, they do transfer more sophisticated technology than M&As (Blonigen & Slaughter, 2001). Müller (2007) stated that GFIELDI should be chosen when the MNE has noticeably superior technology. In that regard, keeping up the company's technology infrastructure is essential

to the competitiveness of the overseas affiliate. According to Javorcik & Spatareanu, (2008) foreign affiliates in the form of GFIELDI are more likely to prevent knowledge leaks that could help local competitors, thereby weakening the long-term development of the host DCs. Alarmingly, earlier studies have shown that although GFIELDI brings some economic gains, it also has a negative impact on national sovereignty, the environment, and socioeconomic development. The economic gain of GFIELDI in the host DCs may therefore be outweighed by its drawbacks. Considering the previous debate, the following hypothesis is put forth:

The overall long-term dynamic beneficial effect of GFIELDI is relatively weak compared to that of M&As in African countries.

On the other hand, if foreign affiliates in the form of GFIELDI successfully establish linkages with local businesses and share knowledge with local enterprises, including competitors, the host DCs' long-term development will be strengthened instead. Then, we formulate the following hypothesis:

The overall long-term dynamic beneficial effect of GFIELDI is not necessarily weak compared to that of M&As in African countries.

3. Data and Methodology

This study attempts to empirically ascertain if the effects of GFIELDI and M&As differ in terms of their effects on long-term development of host ACs. We adapt and adjust Harms and Méon's (2018) generic model to align it with our study's goals. Harms and Méon (2018) examined the growth effects of the two FDI entry types. According to the authors, new project investments may have a greater impact on growth than M&As. The argument is supported by the fact that new plants not only increase host countries' capital stock, but also outperform current plants in terms of innovation and technological abilities (Marin & Sasidharan, 2010). Harms and Méon's (2018) generic model for the two forms of FDI entry is as follows:

$$g_{y,t} = \frac{1}{n}\left(\sum_{i=1}^{m} g_{i,t}^{GFIELD} + \sum_{i=m+1}^{m} g_{i,t}^{M\&As}\right) \tag{1}$$

Where $g_{y,t}$ stands for growth rate, $g_{i,t}^{GFIELD}$ entails sectors that opt for GFIELDI while $g_{i,t}^{M\&As}$ stands for sectors opting for M&As. The framework (i) hypothesises that $m \leq n$ sectors are those opting for GFIELDI regime, while $n - m$ corresponds to the sectors opting for M&As regime. Denoting $i's$ growth rate between period t and $t + 1$ by $g_{i,t}^{k} = Y_{i,t+1}^{k}/Y_{i,t}$.

Amalgamating this framework with the fact that $g_{i,t}^{k} = \beta \frac{FDI_{i,t}^{k}}{Y_{i,t}}$ generates the following, given the appropriate deterministic model components:

$$g_{y,t} = \frac{1}{n}\left[\sum_{i=1}^{m} \beta^{GRF \frac{FDI_{i,t}^{GFIELD}}{Y_{i,t}}} + \sum_{i=m+1}^{n} \beta^{M\&A \frac{FDI_{i,t}^{M\&A}}{Y_{i,t}}}\right], \dots\dots\dots\dots\dots\dots\dots\dots \tag{2}$$

Summing up and averaging growth across sectors results in:

$$g_{y,t} = \delta^{GRF \frac{FDI_{t}^{GFIELD}}{Y_{t}}} + \delta^{M\&A \frac{FDI_{t}^{M\&A}}{Y_{t}}}, \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\dots \tag{3}$$

The framework (iii) represents the growth effect of FDI on host nations, in which FDI is divided into its two principal modes of entry.

To avoid omitted variable bias, we begin by considering important control variables. The growth effect of the two FDI entry modes is then exposed to variables that represent their welfare-reducing effects (costs), such as the environmental, political, and social dimensions, in addition to the control variable hypothesised by classical economic theory. As a result, we may discuss the long-term developmental/overall impact of the two types of FDI entry on host African nations' welfare indicators. We assume that the entry modes of FDI variables and the variables that capture their negative effects on welfare indicators are linear. By incorporating both types of control variables in the model (iii), we obtain the following long-run theoretical model:

$$y_{i,t} = \rho_t + \delta GFIELD_t + \delta M\&As_t + \sum_{i=1}^{N} \theta_k X_t' + \sum_{i=1}^{N} \theta_k C_t' \dots\dots\dots\dots\dots \tag{4}$$

Where, $\frac{FDI_t^{GRF}}{Y_t} = GFIELDGR$, $\frac{FDI_t^{M\&A}}{Y_t} = M\&AsGR$, X_{it}' stands for $LFPR$, $PGDFCF$, $PGFCF$, TO, and C_{it}'

stands for $CO_2, GOV,$ and $GINI$. The left side represents the country i's real GDP per capita, GFIELDGR represents GFIELDI as a ratio of GDP, M&AsGR represents M&As as a ratio of GDP, and X'_{it} represents control variables used in the model to rigorously examine the influence of the two entry modes of FDI in host African countries.

In particular, LFPR denotes labor force participation rate, PGDFCF denotes private gross domestic fixed capital formation, PGFCF denotes public gross fixed capital formation, and TO denotes trade openness. C'_{it} indicates the variable that captures the negative impact (costs) of FDI entry modalities on other aspects of development indicators, such as carbon emissions (CO_2) per capita, government effectiveness (GOV), and finally income inequality (GINI). These variables were selected not only because they had previously been employed in empirical research but also because they were found to be consistently and statistically significant.

3.1 Empirical Model

By expanding equation (4) and rewriting it into a dynamic panel model framework we obtain the following long-run dynamic empirical models (va and vb respectively):

$$y_{i,t} = \rho_{it} + \delta_{it}M\&A_{it} + \beta_{it}LFPR_{it} + \beta_{it}PGDFCF_{it} + \beta_{it}PGFCF_{it} + \beta_{it}TO_{it} + \beta_{it}CO_{2it} + \beta_{it}GOV_{it} + \beta_{it}GINI_{it} + \varepsilon_{it}, \dots \dots \dots \dots \dots \dots \dots \quad \dots \dots \dots \dots \dots \quad (5a)$$

$$y_{i,t} = \rho_{it} + \delta_{it}GFIELD_{it} + \beta_{it}LFPR_{it} + \beta_{it}PGDFCF_{it} + \beta_{it}PGFCF_{it} + \beta_{it}TO_{it} + \beta_{it}CO_{2it} + \beta_{it}GOV_{it} + \beta_{it}GINI_{it} + \varepsilon_{it}, \dots \dots \dots \dots \quad \dots \quad (5b)$$

Where $i = 1, 2, 3 \dots, N = 15$ and $t = 1, 2, 3 \dots, T = 31$, and ε_{it} stands for normal error term for a country i in time t.

3.2 Data Sources and Measurements

This study's data is based on a panel of fifteen African countries (Egypt, Morocco, Tunisia, Malawi, Nigeria, Zambia, Mauritius, South Africa, Tanzania, Kenya, Cote d'Ivoire, Botswana, Namibia, Ghana, and Mozambique) and spans the years 1990 to 2020. These countries were selected based on the availability of credible data for the majority of the series of interests. M&As data were derived from the UNCTAD database (2020), and they measure net cross-border M&As in millions of USD. The observations on M&As were expressed as a percentage of GDP. Because GFIELDI data were unavailable before 2003, we used the standard procedure to build observations on the latter. This involves deducting M&As from FDI net inflows. Private gross domestic fixed capital formation ($PGDFCF_{it}$) and public gross fixed capital formation ($PGFCF_{it}$) were obtained from IMF database; real GDP per capita (Y_{it}), Foreign direct investment net inflows (FDI_{it}), trade openness (TO_{it}) and Income inequality ($GINI_{it}$) were all sourced from the World Development Indicators (WDI) 2022 online database published by the WB; fossil carbon dioxide (CO_{2it}) observations were sourced from the European Union Report (EUR) 2020 published by EU; while government effectiveness (GOV_{it}) observations were sourced from the World Governance Indicators (WGI). Table 1 summarises the description of the variables used in this study.

Table 1. Description of the variables and their measurements

Variables	Descriptions	Expected signs	Sources
Y	GDP per capita growth rate (real per capita output growth) in 2010$US		WB
FDI	Foreign direct investment net inflows relative to GDP	+	WB
M&As	Mergers and acquisition sales net as a percentage of GDP	+	UNCTAD
LFPR	Labor force participation rate as a percentage of total population ages of total working age population	+	WB
GFIELD	Greenfield investment refers to the difference between FDI net inflows and M&As a percent of GDP	+	WB — UNCTAD
PGDFCF	Private gross domestic fixed capital formation as a per centage of GDP.	+	IMF
PGFCF	Public gross fixed capital formation as a percentage of GDP.	+	IMF
CO₂	Fossil carbon dioxide as a percentage of GDP	−	EU
TO	Trade openness which refers to the sum of exports and imports of goods and services relative to GDP.	+	WB
GOV	Government effectiveness which measures the quality of public services, degree of its independence, quality of policy formulation and implementation etc.	+	WGI
GINI	Income inequality measures the area between the Lorenz curve and a hypothetical line of absolute equality.	−	WB

3.3 Estimation Techniques

In order to estimate the coefficients of models $(5a)$ and $(5b)$, the dynamic P-ARDL approach elaborated by Pesaran et al., (1999) was used. This approach is built on two alternative estimators, namely, mean group (MG) and pooled mean group (PMG) estimators. PMG estimator begins by assuming the following: (i) long-run homogeneity of coefficients across countries or at least a subset of them; (ii) speed adjustment, short run coefficients, error variances, and intercepts are assumed to be heterogeneous country by country; (iii) residuals are assumed to be independently distributed across i and t, with zero mean and variances, and independently of regressors; and finally (iv) existence of a long-run association between series of interest. On the other hand, the MG estimator primarily assumes that parameters are freely independent across the group. The hypothesis put forth by both estimators is that the series of interest should be mutually co-integrated, I(0) or I(1). Furthermore, T should have a relatively large size. This approach was employed in this study at the expense of other co-integration test techniques such as fixed and random effects estimators and GMM, as it allows for heterogeneity in the speed adjustment of the variable of interest towards the long-run equilibrium relationship. As P-ARDL accounts for the appropriate lag of independent and dependent variables, endogeneity is not a problem (Esmaeili et al., 2023). Like in the study by Pesaran et al. (1999), in this study the maximum lag value of one (1) was selected using Akaike Information Criteria (AIC). By considering one as the maximum lag length value, the dynamic panel ARDL (1, 1, 1, 1, 1, 1, 1, 1, 1) specification from equation (3) was first reparametrized as follows:

$$y_{i,t} = \rho_{it} + \beta_{10i}M\&A_{it} + \beta_{11i}M\&A_{i,t-1} + \beta_{20i}LFPR_{it} + \beta_{2ii}LFPR_{i,t-1} + \beta_{30i}PGDFCF_{it} +$$
$$\beta_{31i}PGDFCF_{i,t-1} + \beta_{40i}PGFCF_{it} + \beta_{41i}PGFCF_{i,t-1} + \beta_{50i}TO_{it} + \beta_{51i}TO_{i,t-1} + \beta_{60i}CO_{2it} + \beta_{61i}CO_{i,t-1} +$$
$$\beta_{70i}GOV_{it} + \beta_{71i}GOV_{i,t-1} + \beta_{80i}GINI_{it} + \beta_{81i}GINI_{i,t-1} + \varepsilon_{it}, \ldots \ldots \ldots \ldots \ldots \text{ (6a)}$$

$$y_{i,t} = \rho_{it} + \beta_{10i}GFIELD_{it} + \beta_{11i}GFIELD_{i,t-1} + \beta_{20i}LFPR_{it} + \beta_{2ii}LFPR_{i,t-1} + \beta_{30i}PGDFCF_{it} +$$
$$\beta_{31i}PGDFCF_{i,t-1} + \beta_{40i}PGFCF_{it} + \beta_{41i}PGFCF_{i,t-1} + \beta_{50i}TO_{it} + \beta_{51i}TO_{i,t-1} + \beta_{60i}CO_{2it} + \beta_{61i}CO_{i,t-1} +$$
$$\beta_{70i}GOV_{it} + \beta_{71i}GOV_{i,t-1} + \beta_{80i}GINI_{it} + \beta_{81i}GINI_{i,t-1} + \varepsilon_{it}, \ldots \ldots \qquad \text{(6b)}$$

Second, following Pesaran, Shin, and Smith (1999), the ECM corresponding to equation via and $viab$ can be written as follows:

$$\Delta y_{it} = \varphi_i'(y_{i,t-1} - \gamma_{0i}' - \gamma_{1i}'M\&A_{it} - \gamma_{2i}' LFPR_{it} - \gamma_{3i}'PGDFCF_{it} + \gamma_{4i}'PGFCF_{it} + \gamma_{5i}'TO_{it} - \gamma_{6i}'CO_{it} -$$
$$\gamma_{7i}'GOV_{it} - \gamma_{8i}'GINI_{it}) - \rho_{11i}\Delta M\&A_{it} - \rho_{21i}\Delta LFPR_{it} - \rho_{31i}\Delta PGDFCF_{it} - \rho_{41i}\Delta PGFCF_{it} - \rho_{51i}\Delta TO_{2it} -$$
$$\rho_{61i}\Delta CO_{it} - \rho_{71i}\Delta GOV_{it} - \rho_{81i}\Delta GINI_{it} + \varepsilon_{it} \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots . \ldots \text{(7a)}$$

$$\Delta y_{it} = \varphi_i'(y_{i,t-1} - \gamma_{0i}' - \gamma_{1i}'GFIELD_{it} - \gamma_{2i}' LFPR_{it} - \gamma_{3i}'PGDFCF_{it} + \gamma_{4i}'PGFCF_{it} + \gamma_{5i}'TO_{it} - \gamma_{6i}'CO_{it} -$$
$$\gamma_{7i}'GOV_{it} - \gamma_{8i}'GINI_{it}) - \rho_{11i}\Delta GFIELD_{it} - \rho_{21i}\Delta LFPR_{it} - \rho_{31i}\Delta PGDFCF_{it} - \rho_{41i}\Delta PGFCF_{it} - \rho_{51i}\Delta TO_{2it} -$$
$$\rho_{61i}\Delta CO_{it} - \rho_{71i}\Delta GOV_{it} - \rho_{81i}\Delta GINI_{it} + \varepsilon_{it} \ldots \ldots \qquad \ldots \ldots \ldots \text{(7b)}$$

Where, $\gamma_{0i}' = \frac{\rho_{it}}{1-\lambda_i}$, $\gamma_{1i}' = \frac{\beta_{10i}+\beta_{11i}}{1-\lambda_i}$, $\gamma_{2i}' = \frac{\beta_{20i}+\beta_{21i}}{1-\lambda_i}$, $\gamma_{3i}' = \frac{\beta_{30i}+\beta_{31i}}{1-\lambda_i}$, $\gamma_{4i}' = \frac{\beta_{40i}+\beta_{41i}}{1-\lambda_i}$, $\gamma_{5i}' = \frac{\beta_{50i}+\beta_{51i}}{1-\lambda_i}$, $\gamma_{6i}' = \frac{\beta_{60i}+\beta_{61i}}{1-\lambda_i}$, $\gamma_{7i}' = \frac{\beta_{70i}+\beta_{71i}}{1-\lambda_i}$, $\gamma_{8i}' = \frac{\beta_{80i}+\beta_{81i}}{1-\lambda_i}$, $\varphi_i' = \lambda_i - 1$

3.4 Estimation Procedure

Given that the independent variables in our baseline specifications (iii) are highly linked as a result of potential measurement errors, each of the two fundamental forms of FDI entry was regressed on real GDP per capita one at a time. We then estimate our targeted specifications (equations viia and viib) that capture the long-run developmental effects of the two-entry FDI modalities.

We further follow the standard procedure for regressing both forms of entry modes of FDI on the dependent variables without and with control variables. The following seven steps were critical in estimating models viia and viib: (i) test for multicollinearity, (ii) test for cross-sectional dependence, (iii) perform the first and second generation panel unit roots of the variables of interest, (iv) perform panel co-integration using the Kao panel co-integration test, (v) select the appropriate lag length for the individual variable by the use of AIC, (vi) perform the Hausman test to decide between the PMG and MG estimator and finally (vii) estimate the parameters of the selected model using the selected estimator, which finally leads to interpretation and discussions of the results.

4. Results

4.1 Preliminary Results

Table 2 presents summary statistics for the variables considered in the regression. The summary statistics reveal the basic characteristics of the data under investigation. The statistical evidence from this table shows that GFIELDI accounts for a greater proportion of FDI in the area studied. This may reflect the preference of policymakers for M&As versus GFIELDI in the study area. The range of variance between the highest and lowest values is reasonable. The results from the said table also show that the majority of the series (Y, PGDFCF, PGFCF, CO_2, TO, GOV, GINI) have skewness lower than 3, which indicates that they are normally distributed. To show that the regressors do not have perfect linear representations of each other, a multicollinearity test was performed and the results are presented in Table 3. This table briefly displays the correlation analysis for the variables used in this study. These findings provide strong evidence against the null hypothesis—that there is a perfectly linear relationship between regressor pairs. Specifically, as predicted, GFIELDI has a negative connection with CO_2 and government efficacy. Furthermore, a slight inverse relationship between GINI and M&As is evidenced (Table 3).

Table 2. Descriptive statistics results

Variable	Observations	Mean	Standard Dev	Minimum	Maximum	Skewness
Y	435	2.102	3.263	-10.822	15.558	-0.392
GFFILDI	384	2.765	4.302	-15.593	39.445	3.845
M&As	384	0.481	1.669	-0.887	18.933	7.221
PGDFCF	435	16.145	7.495	-0.194	44.009	0.409
PGFCF	435	6.264	3.278	0.000	23.853	1.231
CO_2	420	1.457	2.050	0.039	9.638	2.459
TO	435	70.345	25.195	20.722	13.112	0.413
GOV	435	45.070	20.973	-7.240	105.297	-0.052
GINI	435	46.539	11.375	26.860	91.70	0.697

Table 3. Correlations matrix

Variables	GFIELDI	M&As	LFPR	PGDFCF	PGFCF	CO_2	TO	GOV	GINI
GFIELDI	1.00								
M&As	-0.21*	1.00							
LFPR	0.26*	-0.08*	1.00						
PGDFCF	0.15*	0.05*	0.04*	1.00					
PGFCF	0.28*	0.01*	0.10*	-0.21*	1.00				
CO_2	-0.24*	0.17*	-0.47*	-0.04*	-0.18	1.00			
TO	0.20*	0.07*	-0.12*	0.31	0.12*	0.02*	1.00		
GOV	-0.16*	0.10*	-0.34	0.12*	-0.07*	0.60*	0.41*	1.00	
GINI	0.11*	-0.01*	-0.06*	0.01*	-0.08*	0.32*	0.10*	0.30*	1.000

Note. * indicates p < 0.1.

The cross-sectional dependency on each panel, as well as the model residuals, were then analyzed to ensure that there was no spatial dependence (Pesaran, 2004). The results are shown in Table 4 below. The series are cross-sectionally dependent, according to the table's overall evidence. Tests on second-generation panel unit roots are therefore necessary.

Table 4. Cross-sectional dependence test results

Series	Statistics	P-value
Y	7.540585**	0.0000
GFIELDI	4.817150**	0.0000
M&As	2.645863**	0.0081
PGDFCF	10.31379**	0.0000
PGFCF	1.995300**	0.0460
CO_2	17.92887**	0.0000

TO	4.405394**	0.0000
GOV	2.860428**	0.0042
GINI	-2.380709*	0.0173
Residual	3.143**	0.0017
Redidual	0.03126	0.9747

Note. ** denotes the rejection of the of cross-sectional independence test by the means of CD at 5 per cent level of significance.

Having an unbalanced panel dataset, both I am, Pesaran and Shin (IPS), and PP-Fisher panel unit roots tests (Im et al., 2003) were performed to ascertain that none of them is integrated with an order that is greater than 1 (I(1)) and and the results are reported in Table 5. The evidence from this table rejects the unit root hypothesis for most of the series (**Y,** GFIELD, M&As, PGDFCF, PGFCF, and GOV) exclusively at their level with constants and trends. Non-stationary series such as GINI, TO, and CO_2 became stationary after the first difference, as shown in Table 5, under variables at first difference. Thus, all variables were found to be either I(0) or I(1). Due to the series' cross-sectional dependence (Table 4), a two-generation unit root panel test based on Pesaran's CADF was undertaken was carried out to take care of cross-sectional dependency. According to the results (Table 6), each and every series follows the I(1) order.

Table 5. Unit root test results

Variable at level	PP-Fisher		Im, Pesaran and Shin (2003):		Integration Order
	No Trend	With Trend	No Trend	With Trend	
Y	213.1***	242.7***	-6.172***	-4.593***	I(0)
GFIELDI	125.0***	99.58***	-3.483***	-2.0648***	I(0)
M&As	202.1***	165.2***	-5.364***	-2.513***	I(0)
PGDFCF	55.30**	56.64***	-1.706**	-1.359	I(0)
PGFCF	88.00***	102.63***	-2.328***	-1.276	I(0)
CO_2	27.78	50.54**	3.061	0.827	Unit root
TO	37.69	36.16	-1.462	-1.295	Unit root
GOV	105.5***	28.04	-2.956***	-0.433	I(0)
GINI	53.76***	33.71	-0.788	-0.277	Unit root
Variables at first difference					
D(CO_2)	271.3***	403.53***	-10.11***	-8.655***	I(1)
D(TO)	273.3***	341.4***	-10.09***	-8.187***	I(1)
D(GINI)	263.6***	239.5***	-9.639***	-7.418***	I(1)

Table 6. Pesaran's Cross-Sectional Augmented Dicky-Fuller (CADF) test results

		Constant	Constant and trend		
Series	T bar	P-value	T bar		P-value
Y	-5.466	0.000***	-5.224		0.000***
GFIELDI	-5.527	0.000***	-1.633		0.051*
M&As	-4.787	0.000***	-1.114		0.133
PGDFCF	-2.701	0.003***	-1.993		0.023**
PGFCF	-2.450	0.004***	-2.105		0.018**
CO_2	-1.149	0.125	-4.159		0.000***
TO	-2.113	0.017**	-1.096		0.136
GOV	-3.759	0.000***	0.185		0.573
GINI	-0.589	0.278	-0.930		0.031**

Note. The *** , ** and * respectively stand for 10 per cent, 5 per cent and 1 per cent level of significance.

Using the P-ARDL approach in this scenario becomes a viable choice. The study then performed the Hausman test to choose between MG and PMG estimators, and the findings concluded that PMG is more effective (Prob > chi2 = 0.9935 > 0.5). This is why PMG is used in this study to estimate the models of interest.

4.2 Estimated Long-Term Coefficients.

We began by examining the overall growth effect of FDI on real GDP per capita before examining the long-term developmental effects of each of the two main FDI entry modes. The results, which were not reported but are available upon request, show that FDI inflows exert a statistically and economically significant positive growth effect on real GDP per capita in the study area. These findings support those of Mowlaei (2018), who established

that FDI inflows have a positive and significant growth effect on recipient DCs (Mowlaei, 2018). Baseline models were then estimated, whereby each of the FDI entry modes replaced, at a time the total volume of FDI inflows. The results are reported in Tables 7. The evidence in these two tables reveals that both GFIELDI and M&A exert a positive and statistically significant effect on real GDP per capita in all sampled countries. The scale effect of M&As, however, appears to be substantially larger than that of GFIELDI.

Table 7. Baseline results for M&As and FFIELDI

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
	Long Run Equation			
M&As	1.798890	0.322335***	5.580800	0.0000
	Short Run Equation			
ECT	-0.438482	0.091740***	-4.779643	0.0000
D(M&As)	-0.530857	0.244198*	-2.173881	0.0304
	Long Run Equation			
GFIELDI	0.676609	0.064075***	10.55968	0.0000
	Short Run Equation			
ECT	-0.547010	0.083795***	-6.527975	0.0000
D(GFIELDI)	0.129313	0.228795	0.565193	0.5723

The long-run developmental impact of each entry mode of FDI on real GDP per capita was then estimated, and the results are reported in Table 8. First, the signs of the estimated coefficients perfectly match the expectations in the literature. It is worth noting that incorporating both control variables, especially those that capture the negative effect of FDI entry modes on other dimensions of development, into the baseline models reduced the magnitude of the effect obtained from the reference models significantly (Tables 7). According to the findings in Table 8, M&A and GFIELDI have statistically significant and positive long-term developmental effects on real GDP per capita in all countries in the study.

These findings support the results of earlier research (Bayar, 2017; Luu, 2016; Mockevicius, 2014; Moid, 2018), which indicate that both forms of FDI entry modes have a generally positive, statistically, and economically significant impact on the development of host DCs. The study's conclusions do, however, show that the marginal impact of M&A is statistically and economically substantially stronger than that of GFIELDI. That is, a 1% increase in GFIELDI has, on average, a very weaker long-term developmental effect on real GDP per capita than an equivalent investment in M&As, regardless of whether control variables were included or not. This research implies that what happens in practice is that MNCs exploit and expand existing networks locally through takeovers, rather than having foreign affiliates attempt to build new ones through GFIELDI. These results support Ro (2022), who argues that domestic economies are conducive to M&A deals since these deals frequently involve significant technology and information spillovers.

We believe that the way the parties mutually accommodate one another's needs is what sets M&As apart from GFIELDI in terms of influence on host DCs. The findings of this investigation run counter to those of Harms & Méon (2014) and Harms & Méon (2018), whose data points in a different direction. Once more, the study's findings contradict (UNCTAD, 2000) assertion that FDI inflow regimes that build up new production capacity from scratch are more beneficial to the host nation's economic development than transferring existing assets to foreigners.

Our empirical data show that the research area is experiencing M&A restructuring. To put it another way, M&As signify more than merely a transfer of ownership. They make significant contributions to economic restructuring, skill advancements, and technological advancements. Consequently, our results support this perspective. In light of the necessity for more profound economic restructuring in African nations, governments ought to prioritize their support for M&As while making sure that all involved parties take mutual care of one another's needs. M&As may outperform GFIELDI in the way they affect the development of the host DCs because, in addition to the benefit provided by the acquired firm, the previous owners of the acquired enterprises may choose to invest the financial resources received in a new sector of a rapidly expanding economy. This is consistent with Wes and Lankes (2001), who argue that there is a greater incentive to invest in existing assets rather than new ones in a country that is less developed on the transition path. Moreover, Ro (2022) contends that LCs support M&A deals because they typically result in significant technology and knowledge spillover and exclude the entry of new players. To bridge the productivity gap between MNCs and LCs, African governments should actively pursue M&As that bring superior technology and knowledge to the table.

The weak long term developmental effect of GFIELDI in the study area, on the other hand, shows an inadequate level of market capability in channelling GFIELDI's beneficial spillovers on the development of host DCs. In particular, the weak long-term developmental effect of GFIELDI could be explained by the fact that most of these investments flow into resource-seeking. According to Luu (2016), if FDI draws away a country's scarce-resources, while labour skill and technological level are not sufficient to absorb advancements and other benefits from FDI, then such investments could discourage the positive spillovers. According to Ekholm (2017), the latter are not a natural phenomenon but rather the outcome of host countries' efficient economic policies and supportive institutional structures. Government action is necessary in these countries to adopt proper economic policies and institutional structures that result in beneficial market mechanisms.

In terms of control variables, the estimated long-term effect of LFPR (0.014) on real GDP per capita is miniscule and statistically inconsequential. This may be explained by the fact that Africa has the lowest Human Development Index (HDI) in the world (Zarsky, 2005), and our findings may reflect poor workforce quality in terms of education and health status. These findings are consistent with those of Benhabib and Spiegel (1994). They found that, in their geographical research, labor did not add to GDP per capita. Their study found that countries in the sample should actively support initiatives to improve educational quality and HC in order to increase real GDP per capita (Benhabib & Spiegel, 1994). This is because low total factor productivity (FP) makes it hard for the modern economy, which is based mostly on information, to function properly. The research countries can maximize returns on both domestic and international capital by increasing FP. It is thus fair to say that long-term development, like other economic development projects, can only be achieved when sufficient capital is invested in the people of the country under consideration.

It is crucial to remember that CO_2 has no long-term, statistically significant effect on real GDP per capita. This indicates that in order to maintain CO_2 emissions at levels that are socially acceptable, the countries that are the subject of this analysis imposed stringent environmental regulations on investments. Governments in the sample countries must thus continue to work to make sure that rapid growth does not obstruct long-term development.

Public and private investment, as expected, have a long-term impact on real GDP per capita in all sample nations. Prior studies have demonstrated that domestic investment has a favorable and statistically significant impact on economic development (Bayar, 2017; Lobanova et al., 2016; Mockevicius, 2014). Domestic private and public investments have a weaker long-term developmental effect on real GDP per capita than FDI inflows. Therefore, the study advises governments in the assessed nations to relax their control over local investors. While pursuing GFIELDI investment and M&As to support domestic objectives, a greater emphasis should be placed on human-centered growth. In this regard, FDI should be viewed as a valuable supplement to local initiatives rather than the primary source of development.

Trade openness (OT) was found to have a negative long-run effect (-0.01) on real GDP per capita in every country studied. This shows that trade liberalization is detrimental to Africa's long term development. As a result, the concept that TO improves the standing of all stakeholders is problematic in African economies, which is consistent with the idea that DCs, particularly those in Africa, benefit trade partners with large economies through "unequal exchanges." This viewpoint holds that DCs are pushed to produce low-end products, such as raw materials, and the same are then shipped to affluent countries for their own further industrialization. High-value-added consumer items must eventually be returned to DCs, except that they are at that point exceedingly expensive. This is confirmed by the findings. A more balanced collaboration between wealthy and poor countries is required. It would not only raise real GDP per capita, but it would also increase the magnitude of the effect of FDI entry modes in the studied areas.

Similarly, income inequality has been demonstrated to have a negative impact on the real GDP per capita prospects of the sample countries. Thus, this analysis demonstrates that government efforts to minimize wealth disparities increase not only real GDP per capita but also the effect of FDI entry methods in the investigated area. Finally, in Table 10, the overall speed adjustment (φ') is -0.75, which is quite significant at the 10% level. A score of -0.75 shows that nearly 75% of wind freezes induced by departures from steady-state equilibrium in the previous year are remedied in the current year.

Table 8. Overall long run estimated coefficients for both specifications $(7a \ and \ 7b)$

	Specification $7a$			
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
M&As	0.303960	0.075541	4.023769	0.0001
LFPR	0.014114	0.008399	1.680512	0.0942
PGDFCF	0.080657	0.022136	3.643670	0.0003
PGFCF	0.091773	0.035321	2.598289	0.0100
CO_2	0.078322	0.135584	0.577668	0.5641
TO	-0.009115	0.005388	-1.691674	0.0921
GOV	0.049439	0.007826	6.317193	0.0000
GINI	-0.067625	0.017327	-3.902937	0.0001
$\varphi^{\wedge\prime}$	-0.754210	0.104177	-7.239707	0.0000
	Specification $7b$			
GFIELDI	0.190854	0.061631	3.096724	0.0022
LFPR	0.008205	0.007989	1.026991	0.3055
PGDFCF	0.060475	0.022856	2.645879	0.0087
PGFCF	0.083809	0.037780	2.218338	0.0275
CO_2	0.064306	0.129394	0.496982	0.6197
TO	-0.010376	0.005095	-2.036225	0.0429
GOV	0.050535	0.007935	6.368534	0.0000
GINI	-0.053307	0.016455	-3.239482	0.0014
$\varphi^{\wedge\prime}$	-0.749817	0.107468	-6.977096	0.0000

For thorough verification, GFIELDI and M&As have been included in the same specification as surrogate estimates. Results from Table 9 lend credence to previous findings that M&As enhance real GDP per capita more than GFIELDI in the long-term. However, due to the possibility of measurement errors, this should be interpreted with caution.

Table 9. Results for robust check

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
GFIELDI	0.326780	0.050074	6.525964	0.0000
M&As	0.423005	0.068362	6.187736	0.0000
PGDFCF	0.039478	0.018684	2.112896	0.0357
PGFCF	0.122872	0.027685	4.438126	0.0000
CO_2	-0.166593	0.111359	-1.496003	0.1360
TO	-0.009097	0.004721	-1.927016	0.0552
GOV	0.062108	0.006941	8.948027	0.0000
GINI	-0.055492	0.011843	-4.685762	0.0000
ECT	-0.744870	0.122070	-6.101981	0.0000

4.3 Countries Specific Estimates

The estimated statistical evidence for each individual country is shown in Table 10, including the estimated coefficients for ECTs ($\hat{\varphi}$) and the short-run relationships between the variables of interest. Except for Malawi and Malawi, the overall estimated coefficients for ECT for both specifications are negative and statistically significant. This implies that there is statistically significant evidence of a long-term association between variables of interest in the study area. The estimated ECT coefficients range from -0.157 to -1.554. Morocco and Mauritius have the fastest ECT ($\hat{\varphi}$)= -1.554 and -1.341, respectively, whilst SA and Malawi have the slowest ECTs ($\hat{\varphi}$) = -0.157 and -0.184, respectively, for both parameters.

Surprisingly, as shown in Table 10 (columns 2 and 3), the alleged long and short-term effects of GFIELDI in Malawi are non-existent, indicating that putting GFIELDI at the core of long-term development and growth activities is a major mistake. Therefore, the current research recommends that Malawi renegotiate higher benefits with GFIELDI owners while improving factor markets at the same time.

Furthermore, as shown in Table 10 column 3, GFIELDI investment exerts a negative and significant growth effect

on countries such as Egypt, Nigeria, Mauritius, Tanzania, Botswana, and Ghana. These findings challenge the concept of GFIELDI-led growth in host countries through capital accumulation in the neoclassical growth model. The lesson to be drawn is that putting GFIELDI at the heart of these countries' growth could be an enormous mistake. Conversely, GFIELDI appears to have benefited both short and long-term development of countries such as Morocco, Tunisia, Mozambique, Zambia, and Namibia.   These findings suggest that increasing FDI via GFIELDI will enhance these countries' growth and development. Finally, the growth effects of GFILDI were shown to be insignificant in countries like Kenya, Côte d'Ivoire, and SA.

In contrast, with the exception of Kenya, Malawi, and Ghana, where M&As had a positive and significant effect on real GDP per capita, the statistical data in Table 10, column 3, show that the other nations saw either a short-term neutral or negative impact from M&As.

Table 10. Country specific estimates

Eq. 7a								
Country	ECT	M&AS	LFPR	PGDFCF	PGFCF	CO_2	TO	GOV	GINI
Egypt	-0.996***	-0.009	-0.055	0.234	0.03	6.19	-0.08	0.09	0.24
Marocco	-1.554***	-0448***	-0.151	0.803	-3.14	29.6	-0.23	-0.14	-3.69
Tunisia	-0.986***	-0.277***	0.076	0.902	0.83	8.69	-0.01	-0.06	1.27
Côte d'Ivoire	-0.766***	-2.901**	-0.555	0.279	2.31	-82.3	-0.07	0.09	1.86
Nigeria	-0.261***	-0.155	-0.150	0.491	-0.05	17.2	-0.05	-0.26	-0.66
Kenya	-0.734***	0.650**	-0.379	0.265	0.99	17.1	-0.06	0.19	-1.37
Mauritius	-1.341***	-0.268***	-0.431	-0.275	-0.47	-3.84	-0.04	0.22	1.29
Tanzania	-0.798***	0.830	-0.064	-0.093	0.71	25.6	-0.02	-0.11	0.83
Botswana	-1.011***	-1.534	-0.199	-0.818	-0.65	2.22	0.37	-0.09	-1.02
Malawi	-0.184***	3.064***	-0.195	0.655	1.197	-756	-0.32	0.51	-0.77
Mozambique	-0.850***	-0.150**	-16.01	-0.443	0.041	-167	0.04	-0.04	-0.05
Namibia	-0.741***	-0.503	-0.101	0.210	0.455	-13.3	-0.10	0.17	-3.84
South Africa	-0.157***	-0.079***	-0.108	-0.563	-2.01	2.14	0.19	0.20	0.02
Zambia	-0.380***	-0.511***	-0.183	-0.120	-1.78	18.5	0.06	0.20	-0.44
Ghana	-0.553***	0.878**	-0.243	-0.106	-0.27	5.89	0.05	0.12	-0.91
Eq. 7b								
Country	ECT	GFIELDI	LFPR	PGDFCF	PGFCF	CO_2	TO	GOV	GINI
Egypt	-0.814***	-0.187***	-0.054	0.189	0.12	6.09	-0.08	0.07	0.18
Morocco	-1.496***	0.308***	-0.166	0.895	-3.71	41.6	-0.29	-0.22	-3.91
Tunisia	-0.921***	0.261**	0.014	0.704	0.59	8.36	-0.02	-0.10	1.55
Côte d'Ivoire	-0.895***	0.058	-0.748	0.366	2.09	-57.8	-0.13	0.10	-0.35
Nigeria	-0.274***	-0.659*	-0.145	0.509	-0.00	17.1	-0.08	-0.21	-0.64
Kenya	-0.842***	0.095	-0.399	0.330	1.35	14.5	-0.07	0.30	-1.24
Mauritius	-1.261***	-0.337***	-0.443	-0.073	-0.56	-3.29	-0.05	0.28	1.79
Tanzania	-0.992***	-0.278***	-0.031	-0.060	0.58	21.2	-0.01	-0.11	0.81
Botswana	-1.155	-0.157**	-0.085	-0.964	-0.71	2.78	0.36	0.18	-0.41
Malawi	0.094	0.247	0.372	0.819	0.93	-551	-0.24	-0.02	0.27
Mozambique	-0.716***	0.023**	-8.496	-0.466	0.14	-136	-0.01	-0.18	-0.89
Namibia	-0.730***	0.122**	-0.165	0.209	0.53	-17.5	-0.11	0.11	-2.26
South Africa	-0.284***	-0.016	-0.136	-0.486	-1.35	-1.92	0.19	0.25	0.11
Zambia	-0.386***	0.405***	-0.124	-0.155	-1.51	17.6	-0.02	0.07	-0.61
Ghana	-0.573***	-0.484***	-0.071	-0.106	-0.51	-9.08	0.05	0.19	-0.55

5. Conclusions, Policy Implications, and Study Limitations

5.1 Conclusions

The present study compared the long-term developmental effects of M&As and GFIELDI on host ACs. Most officials prefer GFIELDI because it instantly increases the host DCs' physical capital pool. M&As do not necessarily increase productive capacity in the host country, which makes them look less attractive. Although M&As may not directly increase productive capacity, they can indirectly boost long-term development by transferring skills and superior technology, both of which are usually in short supply in host ACs. However, it has

been unclear whether this can be empirically supported. While the long-term effects of FDI entry modes are critical for policy purposes, past research in Africa has primarily focused on costs or benefits. It yields inconsistent and fragmented findings. For that reason, the goal of this study is to address this gap in the literature by consolidating scattered empirical evidence on the effect of FDI entry modes in Africa. It is our belief that, in order to create successful FDI policies that serve their domestic interests, African governments should comprehend how different forms of FDI entry impact their long-term development. In view of the above, the intent of this study was to answer the following research question: Do the two FDI entry types exert a net positive long-term developmental impact on host ACs? To answer this question, the PMG/ARDL approach and panel data from 15 African countries between 1990 and 2020 were used.

Surprisingly, not only do the empirical findings of this study contradict the preference for the GFIELDI entry option on the part of governments and development partners, but also the majority of earlier empirical literature related to other DCs. Therefore, this study contributes to the current literature on FDI entry modes by producing scholarly results showing that, in comparison to M&As, GFIELDI has a comparatively weak long-term developmental effect on host ACs. Our findings suggest that policymakers could have underestimated the long-term impact of M&As resulting from pre-existing links between acquired firms and LCs.

The above analysis supports the hypothesis of Bertrand et al.'s (2012), that pre-merger relationships between a firm and its suppliers, clients, and other local stakeholders make it easier to transfer knowledge spillovers from M&As to local players rather than GFIELDI. The latter, instead, faces challenges in forging new relationships with local players, and success is not assured. Therefore, this study may contribute to the moderation of unfavorable perceptions about M&As as a form of FDI entry while also contributing to the formation of local consensus over the entry mode that should be promoted.

Several key lines of evidence from the sampled nations demonstrate that both FDI entry modes have an overall positive, statistically, and economically significant long-term effect on host ACs. However, M&As exert a greater long-term developmental effect on real GDP per capita than GFIELDI across all specifications. More specifically, whether control variables were included or not, a 1% increase in GFIELDI has a substantially weaker long-term developmental effect on real GDP per capita than a comparable investment in M&As. The possible explanation is that foreign acquirers with superior technology and knowledge may increase industry competitiveness, forcing LCs to upgrade their production capacity, thereby reshaping the market. Conversely, GFIELDI's desire to capture markets and displace local businesses, particularly in non-competitive economies, as is common in Africa, may restrict its long-term development impact in host DCs.

Furthermore, at the 10% level, the overall estimated speed of adjustment parameter (-0.75) is both negative and statistically significant. This confirms previous findings that the variables of interest in the research area exhibit a steady-state relationship. Specifically, the ECT ($\hat{\varphi}$) is consistently negative and statistically significant for both ECM specifications for each of the countries under investigation, except for Botswana and Malawi. Morocco has the fastest speed of adjustment rate, or ECT, with ($\hat{\varphi}$) = -1.554, while South Africa has the slowest rate of speed of adjustment, with ($\hat{\varphi}$) = -0.157.

5.2 Policy Implications

First, the empirical findings of the present study reveal that M&A surpasses GFIELDI in terms of their long-term development scale effect on real GDP per capita in Africa. This may indicate a lack of market and institutional capabilities in channelling GFIELDI's potential spillovers into the development of sampled host African countries. Thus, the study's findings suggest that African policymakers should simultaneously consider both FDI volumes and entry modes, as the latter have significantly distinct long-term developmental effects. To achieve quick, long-term development, African governments should prioritize attracting M&As with superior technology and knowledge. Accordingly, African governments must provide legal incentives to encourage more M&As involving advanced technology and knowledge, while simultaneously negotiating additional benefits with incoming GFIELDI. Furthermore, because long-term development may be unevenly distributed within and between these countries, governments in these countries should reinforce the joint mechanisms driving this development. More broadly, officials in these countries should reconsider their preference for FDI entry options and base their decision on evidence.

Finally, the finding shows that the marginal effects of GFIELDI and M&As on real GDP per capita are significantly larger than those of domestic investments (private and public), implying that foreigners have a final say over actual long-term development in these nations. For that reason, the study suggests that governments in these countries loosen their grasp on the local business community so that FDI's role may be to assist rather than drive development. The governments can achieve this through a well-balanced combination of market mechanism

development and forceful state intervention.

5.3 Limitations of the Study

To prevent multicollinearity, the study confines the control variables capturing the negative impact of FDI entry modes on other dimensions of development to a single series. Hopefully, future research on this topic in DCs with alternative variables will challenge the findings of this study. Second, the study looks at long-term effects of FDI using country-level data. One may see it as a concern that country-level data appears unduly aggregated. Firm-level data can shed light on how the two entry modes of FDI affect the development of host DCs. In conclusion, the net impact of FDI entry modes on host DCs is a fascinating topic that warrants further research.

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