The Role of Foreign Direct Investment on Economic Growth: Evidence from Comoros

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Declaration statement

I, **ABDOU ELFATAH DJOUMOI MOIBIOI**, declare that this thesis titled "**The Role of Foreign Direct Investment on Economic Growth: Evidence from Comoros**" under the supervision of **ELSHAN AHMADOV** (PhD) is my own work and has not been submitted for any other degree or professional qualification. I affirm that all sources used and cited in this thesis have been acknowledged appropriately, and any direct quotations or paraphrased content from other authors have been clearly referenced.

This work is original and has been conducted in accordance with the principles of academic integrity. I understand the consequences of academic misconduct and affirm that this thesis accurately represents my research and findings.

ABDOU ELFATAH DJOUMOI MOIBIOI

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Abstract

This study examines the impact foreign direct investment (FDI) on economic growth in Comoros. Specifically, the study also addresses the question of how foreign direct investment affects sectoral economics such as agriculture, industry, and services economic growth. The study uses a time series of secondary data ranging from 1981 to 2022. The study employed annual real GDP per capita growth, agricultural economic growth as a share of GDP, manufacturing sector growth as share of GDP and services sector as a share of GDP as a dependent variable. The variable of interest for this study is FDI, whereas export, domestic saving, and domestic credit are controlled by the study model as macro-economic variables regressors. Data was obtained from world bank development indicators. The collected data was analyzed using descriptive statics and regression analysis. The unit root test and cointegration test was conducted to the suitability of the variables data for the proposed study model.

The ARDL bounds testing approach was adopted for the analysis of the relationship between foreign direct investment and economic growth. E-views 13 statistical tools were employed for analysis.

The ARDL regression analysis results of this study show that even though individual variables may have less significance in the equation of the level, there exists a long-run relationship between the variables that influence growth. The error correction model establishes that the long-term interdependencies are stable and that there is a gradual convergence of the short-run fluctuations to equilibrium. The research finding revealed that FDI has insignificantly impacted the aggregate and sectoral economic growth in Comoros economy.

Furthermore, the ARDL regression analysis results demonstrated that other control variables such as export has a statistically positively significant impact on agricultural and manufacturing growth, while its impact on service economic growth shows a significant negative effect. In addition, this study confirms that domestic savings are a major driver influencing the service sector growth in the Comoros economy.

The final implication of this study suggests that, for Comoros, the attainment of sustainable economic growth requires specific policy measures pertaining to export efficiency, effective use of savings, and financial resource allocation in conformation with the requirements of different sectors.

Key words: **Economic growth, FDI, ARDL bound test approach, Comoros**

Table of Contents

List of Tables

List of Figures

CHAPTER ONE

1. INTRODUCTION

Over the past few decades, there has been a significant upheaval in the global economy. It is developing in a more liberal and open environment where foreign direct investment (FDI) is essential to a country's economic development. This is especially clear from the enormous impact that global firms have had throughout the years. Since the early 1980s, when globalization accelerated, foreign direct investment (FDI) has grown at a never-before-seen pace, demonstrating its significance in influencing global economic environments[1].

Foreign direct investment (FDI) has become a vital component of the world economy. In the current environment, foreign direct investment (FDI) seems to be a stronger driver of economic growth in developing countries than in industrialized ones. This investment is one of the most dynamic elements of international transactions and is essential to the continuous process of global industrial restructuring.

Recent economics research has addressed the impact of foreign direct investment on economic growth. Foreign direct investment (FDI) offers other advantages beyond generating employment and providing access to global markets. It benefits local businesses the most, increasing technological advancements and operational efficacy.

Because FDI allows technology transfer easier and gives access to international markets, foreign direct investment (FDI) is crucial to the growth of capabilities in host country businesses. As a result, this promotes economic growth generally and makes it easier for them to integrate into the global economy. Furthermore, the fact that FDI includes both tangible and intangible assets and that the companies involved are major actors in the world economy makes it especially important. FDI improves the quality of domestic capital in addition to

[1] Several economists (F. PERROUX,1998; C. MAINGUY,2004) have reported in their analyses the extent and dynamic evolution of capital movements since the beginning of the 1980s.
F. PERROUX in his work the Economy of the 20th century (Grenoble University Press, 1961, 1991 review studies internationals volumes XXIX, n2, June 1998.
On page 67 of the article by C. MAINGUY, Paris University X Nanterre (2004): The impact of foreign direct investment on developing, Regional and Development Review No. 20-2004

stimulating capital influx. In conclusion, foreign direct investment (FDI) is critical to economic growth, particularly in emerging countries, since it fosters the creation of jobs, the transfer of knowledge, and the general improvement of regional sectors[2]. Global foreign direct investment (FDI) flows, which averaged $93,887 million between 1980 and 1989, have grown significantly since then, reaching a record high of $1,978.8 billion in 2007. This astounding rise demonstrates how international investment is changing and how crucial FDI is becoming to the world economy [3]. Foreign direct investment (FDI) flows to developed nations hit a record high of $1,358.6 billion during that time. However, worldwide FDI flows fell to $1,744 billion in 2008 after the economic and financial crisis. The main cause of this decline was a sharp decline in foreign direct investment (FDI) flows to developed nations, which dropped to $602 billion in 2010, nearly half of the 2007 record amount. Indeed, during and after the economic slump, FDI flows to developed countries declined gradually and sharply.

The amount of foreign direct investment (FDI) flowing to industrialized nations has been steadily increasing, peaking at $658 billion in 2008. On the other hand, developing nations fared better throughout the crisis than their developed counterparts [4]. The recession had only a little effect on foreign direct investment (FDI) flows, which fell slightly to $511 billion in 2009 before steadily increasing to $574 billion in 2010. On the one hand, these inflows of money increase exports, which in turn contribute to external balances through a simple macroeconomic simulation of a knock-on effect. On the other hand, FDI-related relocations help the host nation generate money, which opens up new markets.

The growing percentage of foreign direct investment (FDI) going to developing nations has been one of the biggest trends of the last 20 years. These nations only made up around one-fifth of all FDI flows in 1990, indicating a significant change in investment trends[5].

[2] See Holger Gorg and David Greenaway, 2004, On whether Domestic Firms benefits from Foreign Direct Investment, "The World Bank Research Observer Vol. 19 Number 2 pages 171-197
[3] Page 1 and 7 of the World Investment Report 2009, UNCTAD
[4] According to the World Investment Report 2001, United Nations Conference on Trade and Development://www.unctad.org/fr/docs/wir2011overview_fr.pdf
[5] Page 7 the World investment report 2011.

According to the World Investment Report 2011, developing countries and transition economies have recently attracted over half of global foreign direct investment (FDI) inflows, solidifying their status as primary destinations for foreign investments. The significance of FDI is emphasized in the New Partnership for Africa's Development (NEPAD), which identifies it as a crucial resource for realizing its vision for development and growth.

Like many other emerging nations, Africa needs a significant infusion of outside funding to close its savings and foreign exchange deficits. In order to achieve sustainable growth and eventually pull the continent out of its current impoverished situation, this immigration is crucial. The paper emphasizes that foreign direct investment (FDI) not only supports economic growth but also significantly boosts these countries' production capacities, which promotes stability and long-term prosperity [6].

Beyond just enhancing local investment climates, a number of African nations have taken steps to attract foreign investment as a result of the focus placed on foreign direct investment (FDI) in the growth and development processes. In Africa, foreign direct investment (FDI) is vital because it helps close the gap between savings and investments and supplies the resources needed to meet the Millennium Development Goals (MDGs). In light of these advantages, African countries are realizing more and more that in order to optimize the potential of FDI in their development plans, they must establish advantageous conditions for foreign investors, such as incentives and regulatory changes[7].

[6] Under the NEPAD, most of the financing will come from abroad, especially from official sources, foreign direct investment.
[7] Reference to the MDG of halving poverty in 2015

1.1. FDI and Comoros

Foreign investors are becoming more interested in the Comoros, an archipelago in the Indian Ocean between Madagascar and East Africa. Low productivity and a heavy reliance on the export of agricultural cash commodities are characteristics of the Comorian economy, which is mostly a subsistence economy that was left over from its colonial past. Regretfully, the four islands have seen slow growth in recent decades, falling short of goals for inclusiveness and poverty alleviation. The limits reached in cash crop exports, which have started to diminish, are mostly to blame for this stalemate. For over 40 years, the country has been trapped in a low-growth cycle, with real GDP growth averaging approximately 2.6 percent from 1980 to 2022.

In 2022, it was estimated that nearly 40% of people in Comoros were living in poverty, with the average income per person around $1,343 when adjusted for 2010 US dollars. The COVID-19 pandemic and climate change have made it clear that there's an urgent need for effective policy changes to ensure fair growth in the country. With the population expected to grow by about 1.4% from 2023 to 2025, the future looks worrying.

Comoros relies heavily on imports for goods and services, with capital and consumer goods accounting for over a quarter of its GDP. Surprisingly, only 5% of these imports come from nearby Indian Ocean countries, while a hefty 45% come from far-off Europe, despite being over 10,000 kilometers away. This dependence on European products is a leftover from the colonial era. In recent years, however, imports from Arab nations, especially from Dubai in the UAE, have increased, often providing cheaper alternatives.

Overall, while Comoros has the potential to draw in foreign investment, it faces significant challenges in economic development, market access, and poverty that call for substantial changes in legislation.

Foreign direct investment (FDI) has historically been low in Comoros due to a combination of structural, political, economic, and geographic problems. In the 1980s, ylang-ylang, cloves, and vanilla were among the cash commodities that were heavily relied upon in the Comoros' primarily agricultural economy. International investment was severely discouraged at this time due to the continued political instability and numerous coups d'état. The nation's investment needs could not be met by domestic savings, therefore attracting foreign capital

became essential for rapid economic expansion in tandem with population growth. However, FDI was still virtually nonexistent, with the notable exception of Galawa Beach, a 300-room beach resort operated by a foreign outfit.

There were a number of reasons why there was no FDI during this time, including Issues including inefficient legal systems and administrative roadblocks further deterred prospective investors, as did inadequate air and sea transportation, expensive electricity, and poor communication networks.

In the 2000s, a period of political stability replaced the political upheavals that had long hampered Comoros's social and economic progress. In response to this new era, the administration implemented economic and institutional changes aimed at improving the business environment and attracting more foreign direct investment. The primary objectives of these reforms were to stabilize the economy, promote public-private partnerships, and streamline investment procedures.

Despite these measures, foreign investment in the Comoros is rare and concentrated in a few industries, including energy, tourism, fishing, and agriculture. China and India have historically been the Comoros' major investors, trailing France. From 2001 to 2019, the Comoros planned to receive 44.2 billion KMF in foreign direct investment (FDI), accounting for only 0.7% of the country's GDP. Despite the promise afforded by the investment code and opportunities in the tourism sector, the Comoros' poor ranking of 160th in the World Bank's 2020 Doing Business report suggests that the island nation is not particularly desirable to foreign direct investment. To summarize, despite improvements in the Comoros' political and economic climates, significant barriers to foreign direct investment continue to exist. Comoros [8].

[8] Development Financing Assessment Report for the Union of the Comoros.
2021 UNDP, Union of the Comoros

The Comorian government is led by a strong presidential dictatorship that seeks to bring the country into emergence by 2030. This goal is contained in the Emerging Comoros Plan (PCE), which defines a finance strategy centered on mobilizing resources from a variety of bilateral and international partners, foreign investors, and the domestic private sector.

The Conference of Development Partners (CPAD), held in Paris in December 2019, was a watershed moment in this effort, with promises totaling €3.95 billion (about $4.37 billion) from a diverse spectrum of partners. The President of the Union of the Comoros devised a monitoring system to ensure adequate oversight and optimal use of these resources.

In summary, the Comoros is actively pursuing its development goals through strategic leadership and collaborative efforts with international partners, aiming for significant progress by 2030.In all developing countries, foreign direct investment (FDI) experienced a significant decline in 2009, mainly attributed to the global financial crisis. However, the key questions that arise concern Comoro’s position in terms of the factors that promote this attractiveness.

1.2. Research problem

Given the importance of foreign capital in economic development, the Comoros, like many other countries, is actively seeking increased foreign direct investment (FDI). As a small island nation with a strong agricultural economy and an undeveloped industrial sector, foreign direct investment (FDI) might help diversify the economy and boost local capability. Despite the strategic significance of these financial inflows, the Comoros faces major barriers to attracting large-scale foreign investment. The local market's size restricts the prospect of big returns on investment, making it less appealing to foreign investors. Chronic political instability, as seen by coups and governance issues, has historically deterred foreign investment because of concerns about investment security and business predictability.

Inadequate infrastructure, such as weak transportation and communication networks and irregular utilities, also creates considerable barriers to investment. Foreign investors generally see the Comoros as a high-risk environment due to the aforementioned qualities, which may discourage them from making financial commitments.

In addition to these challenges, attracting direct investment may be aided by the sizeable Comorian diaspora. This population contributes significantly in the form of remittances, which might be utilized to promote investment in the country and provide opportunities for economic growth. Foreign direct investment (FDI) is increasingly recognized as a critical driver of economic growth, especially in developing countries like Comoros. The nation's economy has been struggling, with low growth rates, high poverty rates, and limited finance access.

Foreign direct investment (FDI) contributes significantly to the Comoros' economic growth in a variety of ways, including technology transfer and the exchange of management and technical knowledge, all of which improve economic activity, productivity, and financial resources. According to World Bank (2023) statistics, foreign direct investment (FDI) averaged just 0.6% of Comoros GDP between 2011 and 2020, indicating that the country has structural impediments to investment.

The goal of this study is to empirically examine the relationship between foreign direct investment (FDI) and economic growth in Comoros over the last four decades, as well as to give critical policy insights into how the Comoros might use foreign investment to achieve sustainable development and enhance living standards.

1.3. The objective of the research

In fact, this research tries to investigate the nexus between FDI and economic growth using the case of Comoros.

The specific goals of the foregoing studies included:

It describes the relationship between foreign direct investment and overall economic growth.

-To examine the impact of FDI on sectoral economic growth in the Comoros economy.

CHAPTER TWO

2. LITERATURE REVIEW

In this section the study reviews relevant theoretical and empirical literatures related to the relationship between FDI and economic growth.

2.1. Theoretical Literature Review

In this section the relevant theories on economic growth, FDI, and FDI nexus economic growth are argued.

2.1.1.Theories of economic growth

Theories of economic growth generalize the various ways economies grow over time. Most theories have generally fallen into either one of the three categories: classical, neoclassical, and alternative models, each usually having their distinct view concerning the intrinsic mechanisms of economic growth. Understanding this framework is particularly germane in the analysis of economic policies and their respective consequences for development.

Theories: Classical and Neoclassical

The Harrod-Domar Model presents a theoretical framework that highlights the relationship between capital and production, stressing a fixed capital-output ratio that could lead to fluctuations in growth rates (Villanueva, 2023).

The Solow-Swan Model mitigates the problem set up by the Harrod-Domar model through the usage of the capital-labor ratio variable that tones down more stable growth trajectories and enables sustaining a long-term increase in output through savings and investment (Vittorio Villanueva, 2023).

Contemporary and Divergent Theories

Neo-Keynesian and Endogenous Growth Theories: These conceptual frameworks emphasize factors such as technological progress and human capital as crucial determinants of economic growth, highlighting the importance of policy interventions and innovation (Buyanova & Averina, 2024). Alternative Growth Theories: Frameworks such as de-growth and green growth challenge traditional metrics like GDP, advocating for sustainable practices and the enhancement of well-being rather than simply focusing on economic expansion (Yurevich, 2022). While conventional theories rely on quantitative growth measures, emerging

viewpoints highlight the importance of qualitative advancements in social welfare, thereby necessitating a re-evaluation of forthcoming economic policies.

2.1.2. Theory of Foreign Direct Investment (FDI)

Foreign Direct Investment is the sustainable investment in the economic entities of another country by the resident entities of another country, typically having ownership, control, or significant influence over the operational activities of a firm. Over the years, theories have evolved on FDI that present different perspectives on the motives of a firm's international investment, the locational selection criteria, and the implications for both the host and home country.

Classical Theories of FDI

Macroeconomic Theories

These elements concentrate on variables such as interest rates, exchange rates, and trade barriers that affect foreign direct investment (FDI) flows. A prominent illustration is John Dunning's Eclectic Paradigm (OLI Framework), which articulates that FDI is propelled by three principal advantages:

Ownership advantages: Firm-specific advantages such as proprietary technology or brand strength.

Location advantages are related to a large market, available resources, and favorable policies in the host country.

Internalization advantages (I): Benefits of controlling operations internally rather than through partnerships or licensing (Dunning, J. H., 1980).

Capital Market Theories

The conceptual framework by Hymer, 1960, states that "the firms undertake FDI to exploit advantages in international markets while simultaneously overcoming the imperfections of capital and product markets". Hymer accentuated the point on the firm-specific advantage along with possible risks associated with the foreign operation (Hymer, S. H., 1976).

2. Current Theories on FDI

Transaction Cost Economics: Based on Ronald Coase's theory of the firm, this perspective states that firms invest abroad in order to reduce transaction costs arising from crossing national boundaries when licensing or franchising is costly or simply not possible. Coase, 1937.

Internationalization Theory: This theory extended internalization to explain that a firm would find FDI most attractive instead of exporting or licensing. This theory posited that FDI is most optimal if it can allow firms to "maintain control over proprietary knowledge, minimize risks, and capitalize on global efficiencies" Buckly, & Casson,1976.

Institutional and Behavioral Frameworks: Institutional theory focuses on how legal, political, and cultural environments affect FDI decisions. Behavioral theories explore managerial attitudes and risk perceptions in FDI processes (North,1990).

3. Strategic FDI Motivations

Market Seeking FDI: Firms invest in new consumer markets.

Resource-seeking FDI is that kind of FDI which gets induced to capture natural resources, skilled labor, or technological input.

Efficiency-Seeking FDI: Investments aimed at optimizing production costs, often by exploiting economies of scale or favorable labor conditions in the host country (Rugman, 1981).

Host country policies, such as tax incentives, trade agreements, or labor laws, play a critical role in attracting FDI. Additionally, political stability, ease of doing business, and infrastructure quality influence FDI flows (Blomström, & Kokko, 2003).

2.1.3. Theories of FDI and Economic growth

The FDI-growth nexus is a multilayered and multi-faceted relationship brought forth by myriad theoretical underpinnings. Various theories have, therefore, been put forward to explain through what channels FDI could eventually spur economic growth in a developing nation and pinpoint the conditions under which these benefits could vary. The key theories and implications for economic growth are summarized in succeeding sections.

Theoretical Frameworks of FDI

According to Internalization Theory, organizations prefer internalization of their activities rather than relying on the market for various reasons, hence becoming more efficient and expanding more in the host countries (Otieno & Aduda, 2022).

The eclectic paradigm put forward by Dunning maintains that a combination of ownership, location, and internalization advantages preconditions a host country for a favorable investment climate (Dzhvarsheishvili, 2022).

Product Life Cycle Theory: Proposed by Vernon, this theory explains how products evolve and how FDI shifts geographically as products mature, impacting economic growth in host nations (Dzhvarsheishvili, 2022).

Endogenous Growth Theory: This posits that FDI contributes to long-term growth through knowledge spillovers and innovation, contingent on the host country's absorptive capacity (McCloud & Kumbhakar, 2012).

2.2. Empirical literature

Studies indicate that FDI generally promotes economic growth, particularly in high- and middle-income countries, where it enhances productivity and capital accumulation (Hassan, 2020) (Kondyan & Yenokyan, 2019).

However, in the case of low-income countries, the findings are not coherent because FDI may not result in the favorable outcome as it faces various obstacles of structural and institutional nature Hassan (2020).

Preconditions of FDI Success

Effective financial and legal institutions, robust infrastructure, and conducive macroeconomic policies are critical for maximizing the benefits of FDI (Otieno & Aduda, 2022).

The presence of multinational corporations often catalyzes technological transfer and skill development, further driving growth (Dzhvarsheishvili, 2022).

It has often been felt that FDI is one of the drivers of economic development; it may, however, depend upon certain conditions and institutional framework within the host country. Therefore, the required policy should be tailor-made for effectively capturing FDI potential.

For example, Le et al. (2024) establish that, for middle-income countries, a 1% increase in FDI is likely to spur economic growth by 9.3%.

The bibliometric review shows the positive role of FDI concerning economic growth, whereby only the recent research tried to include the environmental impact also by Lambekova et al. (2024).

Investigations conducted in Algeria have revealed a persistent beneficial correlation between foreign direct investment (FDI) and economic growth, highlighting the significance of a conducive business environment (Kaddouri & Benelbar, 2024).

Contextual Considerations

The determinant factors for FDI to contribute to growth are host country conditions of sound financial systems, legal frameworks, and infrastructure conditions (Otieno & Aduda, 2022) (Yang, 2024).

Economic freedom strongly affects the capacity of countries to attract FDI, especially among non-OECD countries, and thus affects their potentials for growth (Yang, 2024).

While the dominant view remains that FDI has positive effects on economic growth, different studies have produced conflicting results, suggesting that it might not be a universally valid generalization but rather an association dependent on specific economic and institutional environments (Otieno & Aduda, 2022).

Studies show that while FDI generally promotes growth, some evidence indicates negative effects, particularly in developing nations due to factors like government intervention and economic volatility (Herzer, 2012) (Forte & Moura, 2013).

According to the theoretical literature needs of financing services, industry and infrastructure have made foreign direct investment inevitable (Ahmad & Hamdani, 2003). Increased FDI may help fill considerable human and physical capital deficiencies that have long been a drag on Comoran growth (World Bank, 2023). Yusuf et al, (2020) claims that foreign investors share better technology and ideas that could help increase production within their host country. Moreover, FDI leads to the expansion of existing business enterprises, which assumes job creation; or new enterprise development, which also assumes job creation (Samatar, 2024). However, as the following will demonstrate, there are several challenges

which the Comoros have to confront as they strive to attract international direct investment. Flow from these include weak institutions and policies, limited and poor infrastructure, and geographical isolation and locational disadvantage that help to set an unfavourable investment environment. These are burdens that must be overcome in order to improve the appeal of Comoros for foreign investment.

There is quite an extensive literature on the FDI-economic growth nexus where juxtaposing and confusing evidence are discovered pointing to the cause of the sectoral specific characteristics of such association.

The study identifying Bangladesh as sample country used Panel Vector Error Correction Model (Panel VECM) to investigate seven sectors FDI inflow data for the period between 2007 and 2019. Real Foreign Direct Investment Is Found to Be Exogenous to Real Gross Domestic Product; in Other Word There Is Causal Unordered Between Real Gross Domestic Product and Real Foreign Direct Investment where RGDP causes RFDI rather than vice versa (Ai-jun et al. 2024). Some studies carried out on Malaysia between 1970 and 2005 showed a positive FDI – economic growth linkage. It was found out the change in FDI by one percent then only the RGDP increase by 0.046 percent, this showing that the FDI is the growth of factor for the Malaysian economy (Har Wai Mun et al. 2008).

In Yimer's (2022) research work, the analysis of FDI impact on Africa's economic growth for the period, 1990 to 2016 was done. Applying the dynamically common correlated effect within the context of the error correction model the authors found evidence for the long-run positive relationship between FDI and economic, however, the short run coefficient is proven insignificant within the observed economies. This means that while FDI has a positive impact on growth in the long run its overall impact in the short run may not be so positive.

Sakyi & Egyir (2017) sought to know whether the result of the trade (exports) and foreign direct investment regressing with economic growth supported the Bhagwati hypothesis, they used 45 African countries' data from 1990 to 2014. To this end the researchers used an augmented endogenous growth model, they used a dynamic system GMM technique to address the potential endogeneity problem. The analysis of the findings of the study offers strong support of the Bhagwati hypothesis to the extent that trade and FDI have a complementary relationship that has a positive impact on economic progress in the affected

economies. The above findings provide valuable information for policy makers to focus on the generation of sound export incentive policies and orientation of FDI on export sectors as a part of developmental strategies in African countries.

A recent study conducted by Agbloyor et al. (2016) tries to establish such linkage between FDI, institutions, and economic growth across different environment in SSA. The empirical analysis of the relationships between the variables used a two-step generalized method of moments estimator with Weidmeijer correction applied to standard errors as well as orthogonal deviations. Upon extending the analysis to the full sample it was difficult to identify an impact of FDI on growth. In a subsample excluding countries which had already formed developed financial markets, they were also unable to establish positive relationship between FDI and economic growth. Nevertheless, the study established that when a sample of nations with natural resources was removed, FDI is positively correlated with economic growth. Overall I found that among the policies aimed at leveraging FDI in order to attain superior economic performance, countries need to look at their circumstances first. These insights enhance the understanding of how governments can consider enacted country contexts, and thus might be better equipped to fashion the country contexts in such ways that optimize the pro-growth impacts of FDI.

The study by Yeboua, K. (2020) looks at how institutional development help explain FDI's impact on economic growth in Africa. In this context, the paper uses a panel smooth transition regression model for fixing the factors that influenced 27 African nations during 1990–2017. The findings show that FDI has a positive impact on the economic growth of countries only where institutions have reached a definite level of development. While, in the countries with such an FDI inflow rate, FDI has a negative or no significant impact on economic development. This underlines the need to insisting on sound governance institutions to realize the positive impact of FDI in the course of development in Africa.

Seyoum et al. (2015) analyses the direction of causality between FDI and economic growth (GDP real growth rate per capita) by employing annual panel data set of 23 African countries during 1970–2011. To identify the FDI-growth relationship, the study uses modern panel econometric estimators for non-stationary and cross-sectional dependent data. The analysis of the obtained empirical evidence suggests the mutually causal relationship between FDI and

economic growth at the Granger causality level. Furthermore, the paper establishes that the relationship between the variables is not constant across countries. More specifically, evidence of a unidirectional causal relationship of FDI leading to GDP growth is established for Egypt, Gabon and Mauritania. While the direction of causality is from GDP growth to FDI in Côte d'Ivoire, Kenya, South Africa and Zambia. The results are, therefore, reasonable when calibrating FDI as a proportion of gross fixed capital formation with real GDP increment. In sum, this work highlights that FDI growth mechanisms of African nations vary and are fluid over the observed long period.

Amidst the vast and rigorous previous literature that posited the link between FDI for economic growth while not having country-specific studies on Comoros, this paper therefore seeks to investigate the effectiveness of FDI on growth in Comoros within the context of 1981-2022 period. In a bid to understand the FDI-growth relationship in the Comoros, the present study aims to fill this knowledge gap with the help of the autoregressive distributed lag (ARDL) regression technique. Because of its ability to test for cointegration between the variables of interest, the ARDL technique is appropriate for the analysis of the study's time-series data to determine the type of association between FDI inflows and domestic economic growth as measured by GDP, beyond other factors.

Most empirical studies have indeed shown that FDI in Africa is positively linked to the economic development within African countries. Even though FDI inflow is always positively tagged with economic performance, levels of corruption and levels of economic freedom are aspects that always intervene in such a relationship. These relationships are discussed in subsequent chapters.

FDI and Economic Growth: Correlation

The available studies indicate that FDI is positively influencing the economy in Africa. For instance, Mokaya et al. discovered that inflows of FDI are positively associated with economic growth, although corruption may weaken such an effect by Mokaya et al. (2024).

Woji's research supports this, showing that FDI contributes positively to economic development across sub-Saharan Africa(Woji, 2024).

The Role of Corruption: Corruption has been singled out as a key bottleneck in translating FDI into economic growth. Mokaya et al. 2024 noted that high levels of corruption reduce the efficiency of FDI.

On the other hand, Bao et al. again notes that though corruption has been insignificant in their multiple regression analysis, it is still a concern for policy makers in attracting FDI (Bao et al., 2024).

Economic Freedom and Institutional Quality: Economic freedom is another vital factor influencing the FDI-growth nexus. Bao et al. argue that enhancing economic freedom can help maximize the benefits of FDI (Bao et al., 2024).

Jeke's research emphasizes the significance of robust economic institutions and tangible capital in creating an favorable atmosphere for foreign direct investment, which subsequently propels economic development (Jeke, 2023). Conversely, certain research, such as that conducted by Arthur et al., suggests that foreign direct investment (FDI) could negatively impact sustainable development, especially in low-income nations, implying a nuanced relationship that necessitates thorough policy analysis (Arthur et al., 2024).

In conclusion the empirical studies that were conducted with respect to FDI and its contribution to economic growth are diverse and suggest that, while FDI is usually growth-friendly, it does depend on the fulfillment of certain threshold conditions in the host nation. FDI enhances productivity and capital accumulation and hence has a faster pace of growth in high- and middle-income countries. However, in low-income economies, such influence is much weaker, mainly due to stringent structural and institutional barriers.

The pre-conditions necessary to maximize the potential benefit of FDI in developing countries are good financial and legal institutions, satisfactory infrastructure, and appropriate macroeconomic policies. It can also provide incentives through the potential spillover of technologies and skills which further support growth. As research shows, not every situation benefits from FDI since government interference, economic instability, and general corruption in developing countries weaken its potential.

The literature also emphasizes that economic freedom and quality institutions decide the inflows of FDI. Good governance may perhaps enable the countries to gain the advantages of

growth emanating from FDI. In the case of Comoros, for example, the problems that the investment climate of the nation faces are very complex and comprises of institutions, infrastructures along with disadvantages related to geography.

In sum, FDI is one of the drivers of economic development, but its success depends on customized policies that need to consider special economic and institutional contexts of the host country. The foregoing presents the understanding necessary at the policymaker's level for the pursuit of harnessing FDI for sustainable growth.

To address the research aims, this study seeks to answer the following questions:

What is the nature and magnitude of the relationship between foreign direct investment (FDI) and economic growth in Comoros?

Does the relationship between FDI and economic growth differ when analyzed from sector-specific perspective?

2.3. RESEARCH HYPHOTESIS

The following hypotheses are proposed to address the study objectives:

Ha1: There is a statistical significance relationship between FDI inflows and economic growth in Comoros positively/ negatively.

Ha2: The relationship between FDI and economic growth my varies in terms of sectoral perspectives.

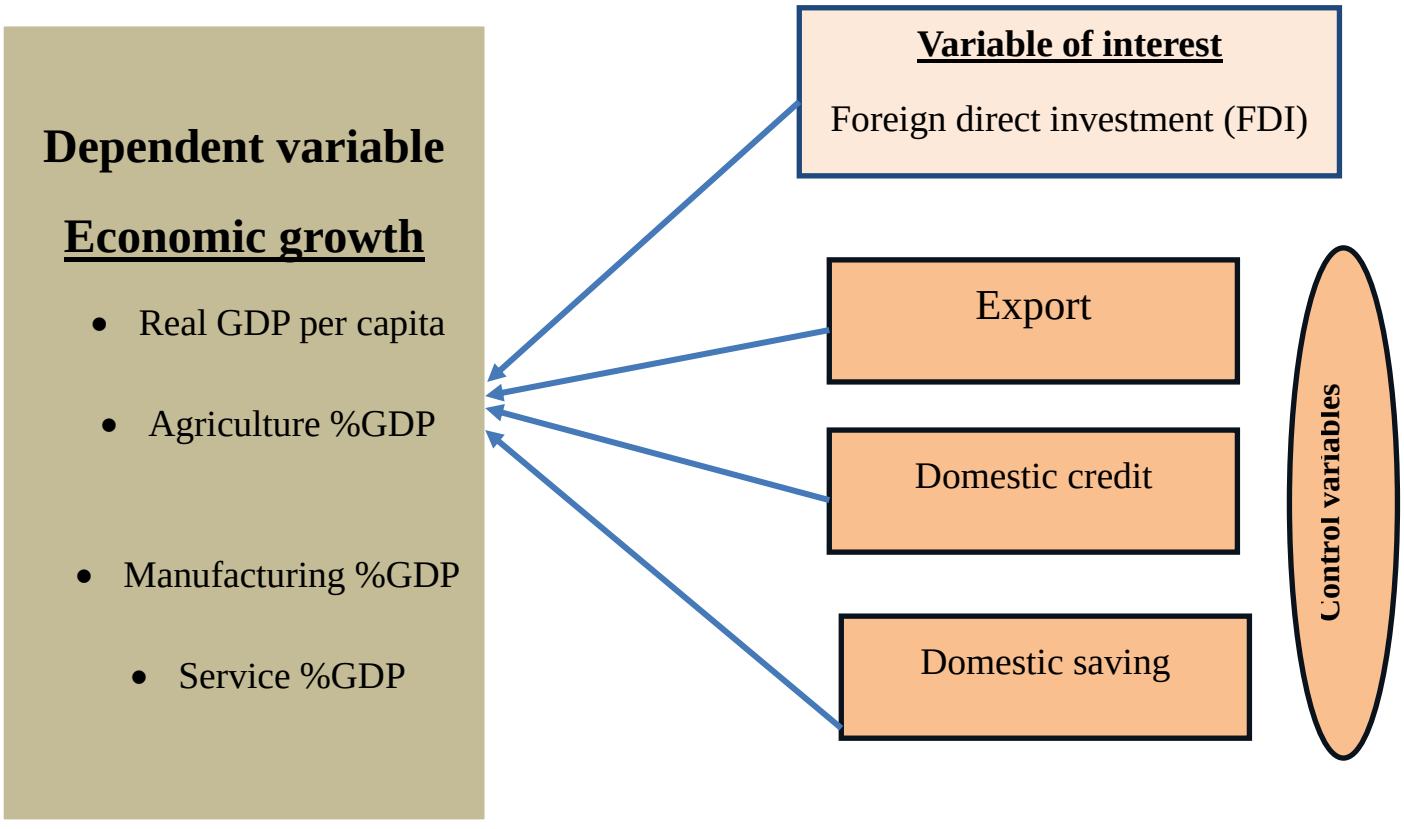
Analyzing these hypotheses will also explain the effects of FDI on total home productive output besides identifying the potential variations in the impact of various industries on growth of the Comoros economy through foreign investments. The insights derived from the findings of this dissertation seek informative value that may assist policymakers to effectively manage and organize the FDI-growth relationship in a manner that would afford optimal realization of growth benefits associated with foreign capital attraction across the Comoros industries.

CHAPTER THREE

3. RESEARCH METHODOLOGY

In this section, the research design used for this study is presented. The research study is based on the empirical study of the time series data obtained from Comoros for the 1981-2022 period. All the data were collected from the World Bank Development Indicators. The study uses both descriptive statics and regression analysis techniques. The unit root test and cointegration test used to check the suitability of the study data for the proposed model. Using the Autoregressive Distributed Lag (ARDL) regression technique adopted for the estimation of long run and short run econometric model, the study analyzed the effect of FDI on economic growth in Comoros.

3.1. Conceptual framework of the study



Source: Authors development based on previous literatures 2024.

3.2. Econometrics model Estimation

This study uses the ARDL bond test approach to estimate the long run and short run relationship between FDI and economic growth controlling export, domestic credit, and saving.

The ARDL estimation model presented as follows:

$$RGDP_{i,t} = \sum_{t=1}^{p} \sigma_t \, RGDP_t - 1 + \sum_{t=1}^{q} \beta 1_t \, \mathrm{FDI_t} - 1 + \sum_{t=1}^{q} \beta 2_t \, \mathrm{DCPS_{I,t}} - 1 + \sum_{t=1}^{q} \beta 4_t \, \mathrm{EXPORT_t} - 1 + \sum_{t=t}^{q} \beta 8_t \, \mathrm{GDSV_t} - 1 + \mathrm{ECM}_{t-1} + \varepsilon_{i,t} \quad (1)$$

$$AGRI_{i,t} = \sum_{t=1}^{p} \sigma_t \, AGRI_t - 1 + \sum_{t=1}^{q} \beta 1_t \, \mathrm{FDI_t} - 1 + \sum_{t=1}^{q} \beta 2_t \, \mathrm{DCPS_{I,t}} - 1 + \sum_{t=1}^{q} \beta 4_t \, \mathrm{EXPORT_t} - 1 + \sum_{t=t}^{q} \beta 8_t \, \mathrm{GDSV_t} - 1 + \mathrm{ECM}_{t-1} + \varepsilon_{i,t} \quad (2)$$

$$MANFU_{i,t} = \sum_{t=1}^{p} \sigma_t \, MANFU_t - 1 + \sum_{t=1}^{q} \beta 1_t \, \mathrm{FDI_t} - 1 + \sum_{t=1}^{q} \beta 2_t \, \mathrm{DCPS_{I,t}} - 1 + \sum_{t=1}^{q} \beta 4_t \, \mathrm{EXPORT_t} - 1 + \sum_{t=t}^{q} \beta 8_t \, \mathrm{GDSV_t} - 1 + \mathrm{ECM}_{t-1} + \varepsilon_{i,t} \quad (3)$$

$$SERVICE_{i,t} = \sum_{t=1}^{p} \sigma_t \, SERVICE_t - 1 + \sum_{t=1}^{q} \beta 1_t \, \mathrm{FDI_t} - 1 + \sum_{t=1}^{q} \beta 2_t \, \mathrm{DCPS_{I,t}} - 1 + \sum_{t=1}^{q} \beta 4_t \, \mathrm{EXPORT_t} - 1 + \sum_{t=t}^{q} \beta 8_t \, \mathrm{GDSV_t} - 1 + \mathrm{ECM}_{t-1} + \varepsilon_{i,t} \quad (4)$$

Whereas,

RGDP: annual real GDP growth

AGRI: agriculture as a share of GDP

MANFU: manufacturing as a share of GDP

SERVICE: service as a share of GDP

FDI: foreign direct investment inflow as a share of GDP

DCPS: domestic credit provided to private sector as a share of GDP.

EXPORT: export as a share of GDP.

GDSV: gross domestic saving as a share of GDP.

ECM: error correction model.

ε: random error.

Control variables explanation

Domestic credit and economic growth: researchers argued that that the role of domestic credit on economic growth is volatile and depends on the country environment. Although some empirical evidence underlines the positive effect of domestic credit on economic growth, other empirical findings suggest some adverse effects particularly in the level of domestic credit intensity. Thus, the fact of moderate dependence on domestic credit, noted above, points out that there are not only positive, but also preconditions for negative interaction between domestic credit and economic growth.

The findings showed that I/D was beneficial to ASEAN Countries GDP per capita than the effects from Stock Market, based on several research conducted by Asmarani & Ningsih published in 2023. The empirical evidence reveals an expectation that the Egyptian economy can benefit significantly from excess net domestic credit provided that the spent resources are channeled to productive areas (Elshafei & Abdallah, 2022).

Conversely, studies show that domestic debt is inversely associated with economic growth in Sierra Leone committing harm in the short run as well as the long run. As domestic debt increases the performance reduces, again the study indicates that more debts exclude other important sectors, including the private sector to access the required capital which affects growth rates (Hadji, 2023). Likewise, studies indicate that domestic debt does not negatively affect the growth rate during the short run, rather it negatively affects the growth rate during the long run in Nigeria. This goes to show that, hence proper balance needs to be taken to ensure that with increased domestic debts, long-term dangers are saved from happening (Zhao, 2022).

In the case of the Gambia, as much as the assumption is put forward that the direct effect of domestic credit expansion on economic growth is modest, it is postulated that greater progress on financial development might cumulatively pay off in the long run. This view highlights the impact of improved capital structures in being able to help manage credit better to spearhead development over time (Jammeh, 2022). On the other hand, according to some economists, credit is not enough to spur economy. There is truth in the position that the effectiveness of credit essentially depends on the manner in which it is used and the circumstances within which credit operates. The quality of financial institutions, the degree of regulation as well as the general business environment are key determinants of the overall ability of available credit to foster economic development.

In conclusion, this paper has found a mixed effect of domestic credit on economic growth in The Gambia in the light of these findings it can be emphasized that the growth of credit availability is one factor however, credit utilisation is another global agenda that requires sound economic environment for channelling the funds for growth and development.

Export and economic growth: the effet of Export on economic growth is an issue with a predominantly positive correlation across different settings. Exporting can help the growth of economies through increasing production efficiency, encouraging inflow FDI, and raising total demand. But strength of this linkage depends upon external conditions and domestic polices prevailing in the country.

Research shows that exports and GDP growth have positively correlated in the long run, especially in India to ensure its economy stability through exports stability (Chowdhury, 2024). To be specific, export-led growth occurs in Iraq, and its contribution is indicated to be a higher 1.57 percent of economic growth in the long run (Abdullah and Husain, 2022). Likewise, in Indonesia the result find that the exports have positive impact on economic growth rate (Wahyuni et al., 2024).

Variability in exports damages growth, manifest in India that although has a mainly positive correlation with export on GDP growth, export volatility is bad for growth. Instability in exports results in higher imports of capital goods though the relationship between export and investment is not an open and shut case according to Singh et al., 2024). Although there is a wealth of works that focuses on the beneficial role of exports for growth, some works suggest

that exports may have a small and/or reverse impact depending on some factors, including the globality demand shock or trade wars (Singh et al., 2024). This indicates that more efforts are needed in the literature for the identification of comprehensive export growth relationship.

Savings and Economic growth: Savings and economic growth are associated in a rather multilayered manner and the effects might be sorted out according to countries' experience. The findings of the statistical analysis conducted in this paper suggest that higher savings rates are in general conducive for higher economic growth mainly due to higher investment and accumulation of capital. This relationship is apparent most especially in the developing world because domestic savings bear considerable impacts on the economy.

They also have a significant long-term impact, whereby every one percent change in corporate savings raises economic growth in South Africa by 3.12 percent as a long run mean according to Fombang and Wanzala (2024). The domestic savings have direct and positive effects on the GDP in case of the short as well as the long run results and pinpointing the leading role of saving for encouraging production and investment in the context of Jordan (Basha, 2023). In further, the study also empirically establishes that savings are procyclical in nature and are positively related to the economic output of Pakistan, and where the financial sector development is seen as important for the efficient deployment of these savings in the country (Ijaz & Shah, 2023). High national savings rates help decrease reliance on international investment, and hence, increase domestic savings for investment in Kosovo (Ribaj & Mexhuani, 2021). East & South Asian nations showed high gross domestic saving rates which had a positive significant relationship with growth rate of GDP (Liu & Ma, 2022). On the other hand, while savers are crucial for growth, high levels of savings without equivalent investment opportunities will cause stunted economic growth as is the case with some lower-middle- income countries among the savers where there is low impact of savings in growth (Liu & Ma, 2022).

CHAPTER FOUR

4. DATA ANALYSIS

This section presents the analysis of the collected data, focusing on descriptive statistics illustrated through tables and graphs. It includes model tests such as the unit root test and cointegration test, which assess the properties of the data. Additionally, the relationship between the dependent and independent variables is examined using ARDL regression analysis, providing insights into the dynamics of the study.

4.1. Descriptive statistics

This section outlines the characteristics of the data, including key statistical measures such as the mean, median, maximum, minimum, standard deviation, skewness, and kurtosis for the study period. These descriptive statistics provide a comprehensive summary of the data's distribution and variability, allowing for a clearer understanding of its underlying patterns and tendencies.

Table 1.Descriptive statistics

	RGDPG	AGRI	SERVICE	MANF	FDI	EXPORT	DCPS	GDSV
Mean	0.3280	30.3522	54.0382	7.0679	0.4094	9.3120	8.7306	-1.5972
Median	0.5741	29.3764	54.5343	6.5851	0.2630	8.8363	6.4933	-0.0429
Maximum	8.7177	36.4122	55.7844	12.8532	2.2597	12.9090	17.9884	1.6819
Minimum	-7.7824	28.9567	50.2466	3.4766	-0.3164	5.6718	3.8787	-10.5847
Std. Dev.	2.8533	2.0015	1.1021	2.1206	0.5565	1.2999	4.5868	2.7745
Skewness	-0.4717	2.0992	-1.9752	0.8735	1.9426	1.1144	0.7458	-1.7129
Kurtosis	5.8682	6.0273	6.4835	3.5025	6.6641	5.9301	1.9968	5.2413
Obs.	42	42	42	42	42	42	42	42

Whereas RGDP stands for annual real GDP growth, AGRI: annual agricultural growth as a share of GDP, SERVICE: annual service growth as a share of GDP; MANF: annual manufacturing growth scaled by GDP; FDI: foreign direct investment as a share of GDP; EXPORT: annual export growth as a share of GDP; DCPS: domestic credit provided to private sector as a share of GDP; GDSV: gross national saving as a share of GDP.

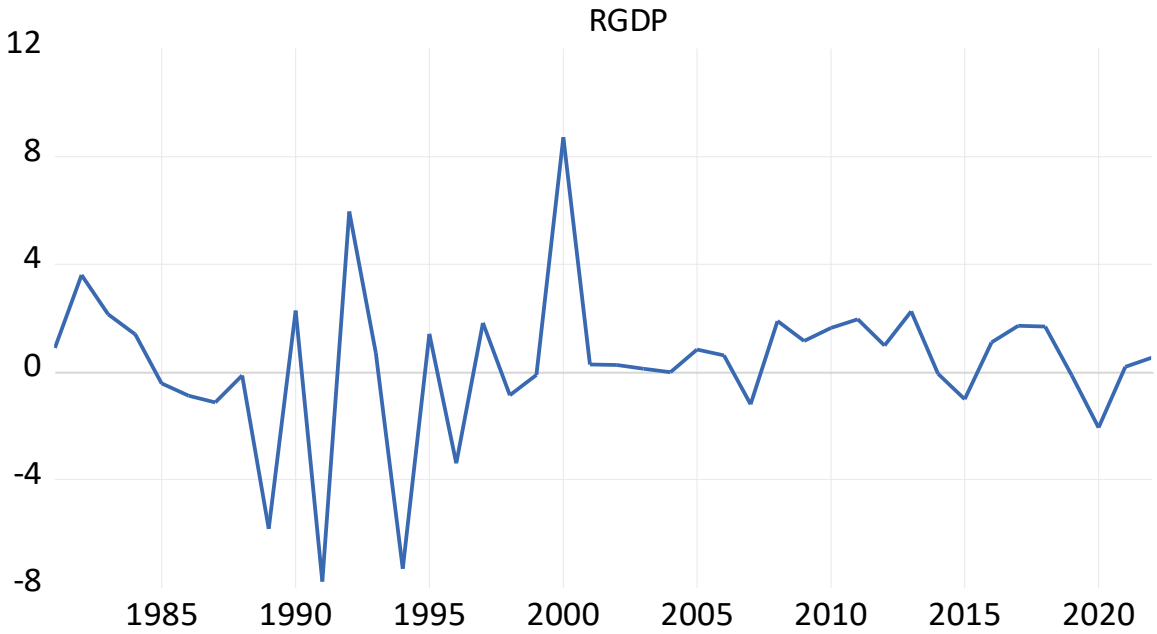
Source: Author's computation using EViews 13.

The descriptive table analysis in Table1 presents a comprehensive overview of various economic indicators, providing insights into the performance and characteristics of different sectors. Below is a detailed interpretation of the descriptive data analysis:

Overview of Indicators

Real Gross Domestic Product Growth (RGDPG): The average of Real Gross Domestic Product Growth (RGDPG) is 0.3280, which means that the growth is moderate therefore can be regarded satisfactory. If one takes the median value of 0.5741 half the observations are over this growth rate. Range: Fluctuations of economic performance can be observed; the countries with the highest growth rate equal 8.7177 and the lowest growth rate equal -7.7824. Standard deviation gives the amount of dispersion or spread by presenting a standard value of 2.8533. Skewness: Theta value of -0.4717 suggest that the system has a little left ward skew which implies that lower growth rates are much more frequent. Kurtosis: 5.8682 less likely to return extreme values and pointed to the distribution was heavy tailed.

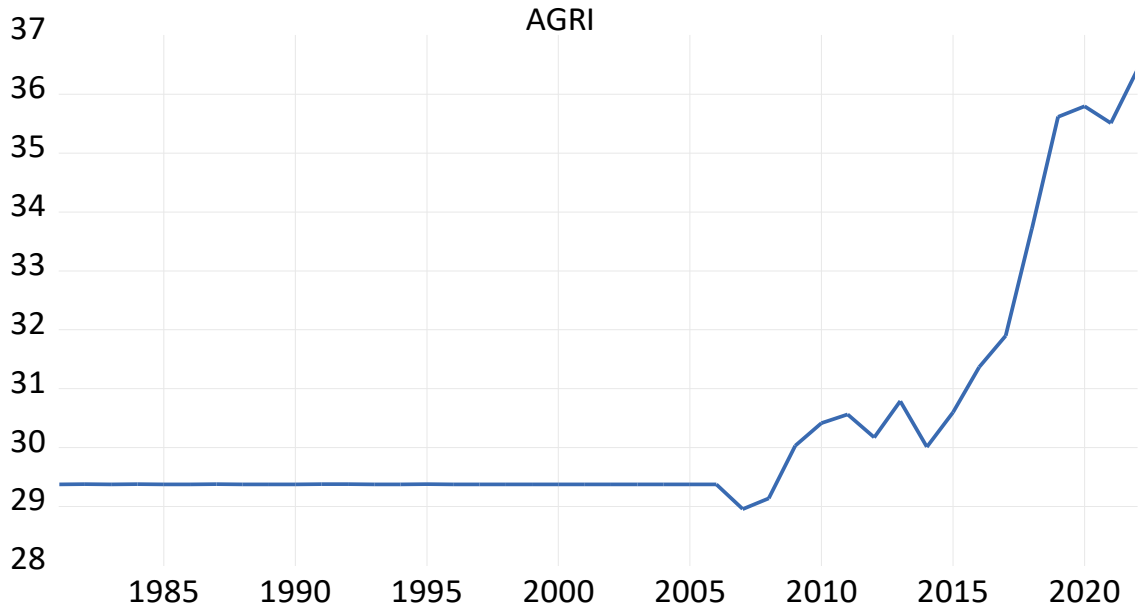
Figure 1. Annual real GDP growth in Comoros 1981-2022



Agriculture Sector (AGRI): Mean: 30. 3522 showing a great extent of play done by agriculture in supporting the economy. Median: count of 3764, thus, those close to the mean, suggesting that the

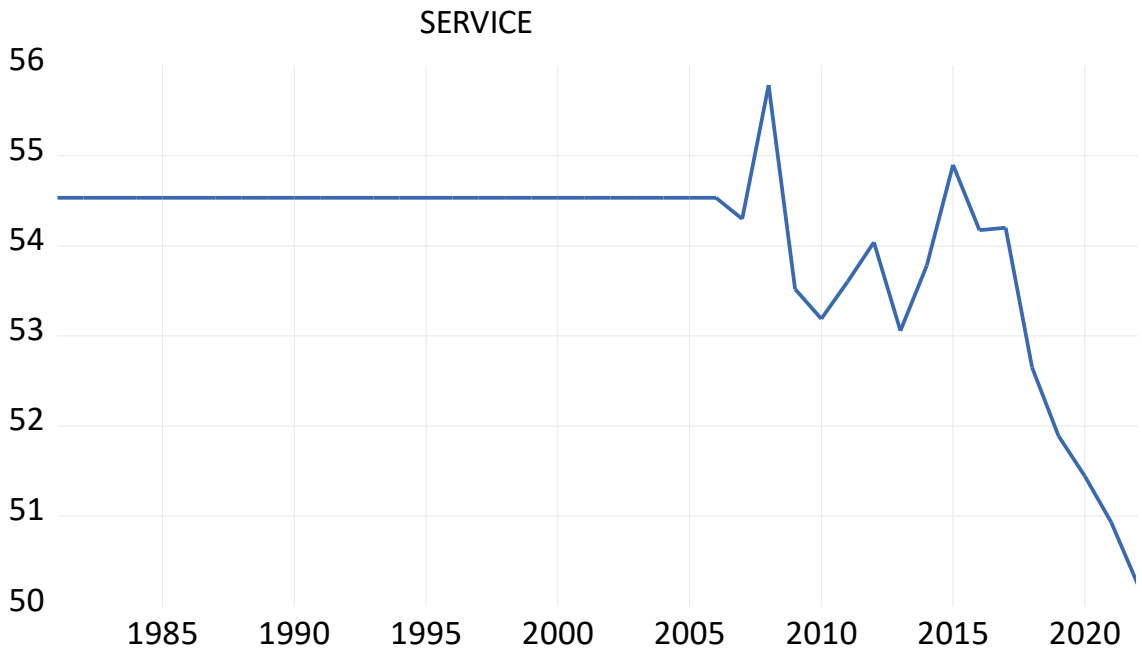
frequencies are relatively symmetrical. Range: It ranges from maximum of 36.4122 and a minimum of 28.9567 thus little variation. Standard Deviation: 2.0015 now have an annual growth index of moderate variability, which will be useful in analyzing the changes in the model throughout the learning process. Skewness: As reflect in the figure affected by outliers with a skewness value of 2. 0992, this means that most of the observations are greatly dominated by a few observations. Kurtosis: 6. 0273 which suggests the distribution explore in this study is peaked with heavy tails.

Figure 2.Annual agricultural share of GDP in Comoros 1981-2022



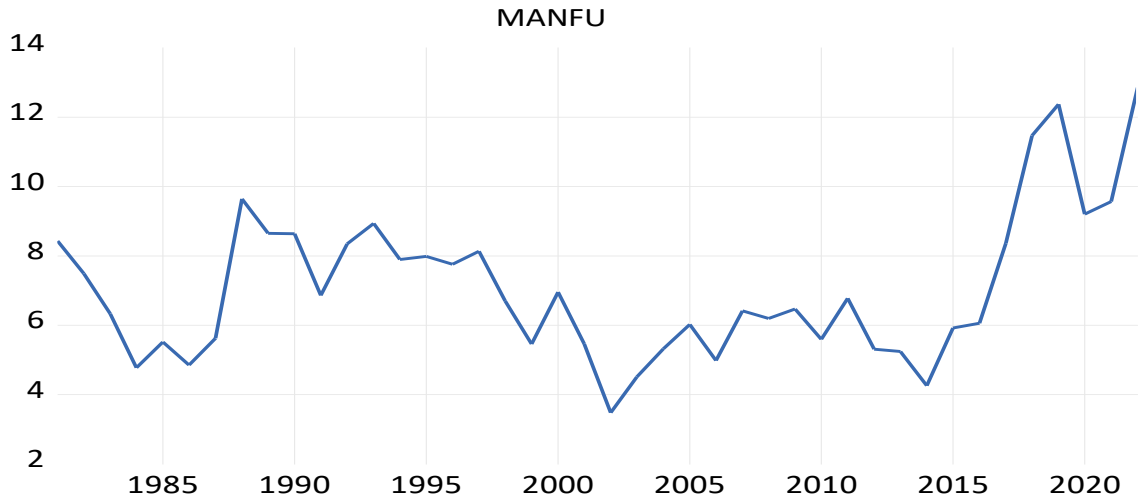
Service Sector (SERVICE): Mean: 54.0382 greatly signifying that services cannot be left out of the economy. Median: 54. 5343 corresponding to the mean, the value is somewhat above that indicates something like right-skewed data distribution. Range: Maximum of 55.7844 and minimum of 50.2466 which mean that the values in the range are close to each other. Standard Deviation: 1.1021 at a very low coefficient of variation. Skewness: This gives the measure a small negative skew of -1.9752 which, interpreted graphically, means that most values are located towards the higher end. Kurtosis: 6.4835, which in the case of having a logarithm of the slope (log beta) of 0.5 suggests that distribution has very heavy tails.

Figure 3.Annual service sector share of GDP 1981-2022



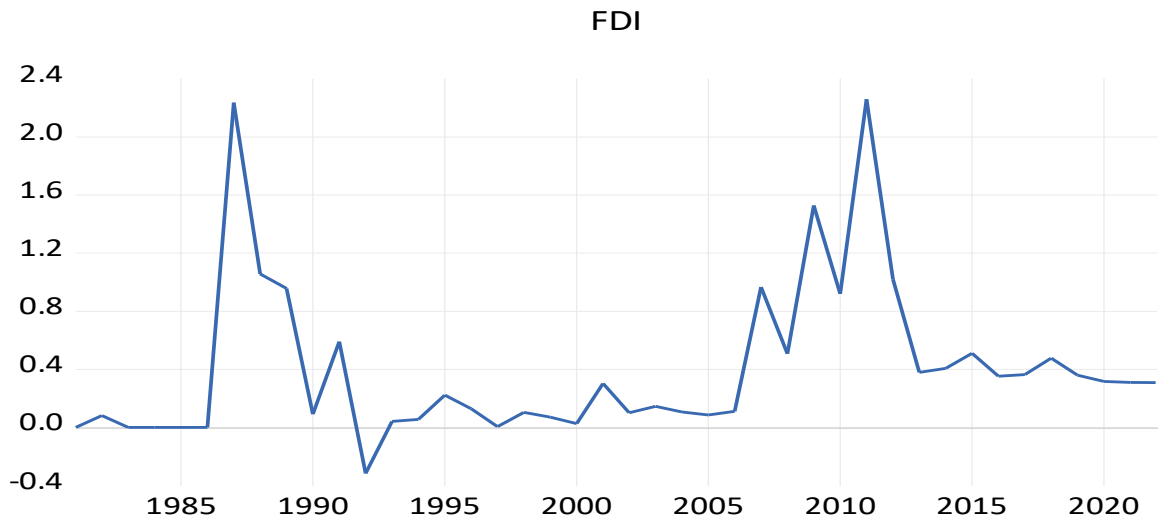
Manufacturing Sector (MANF): Mean: 7.0679 Far less than the contribution of Agriculture and service. Median: 6. 5851 which indicates right skewed data. Range: Its variability can be seen with the maximum of 12.8532 and minimum of 3.4766. Standard Deviation: 2. 1206 it indicates moderate variability and was moved up to the next higher step. Skewness: 0.8735, thus it shows right skewed figure. Kurtosis: 3.5025, this shows the distribution to be close to normal.

Figure 4.Annual manufacturing share of GDP 1981-2022



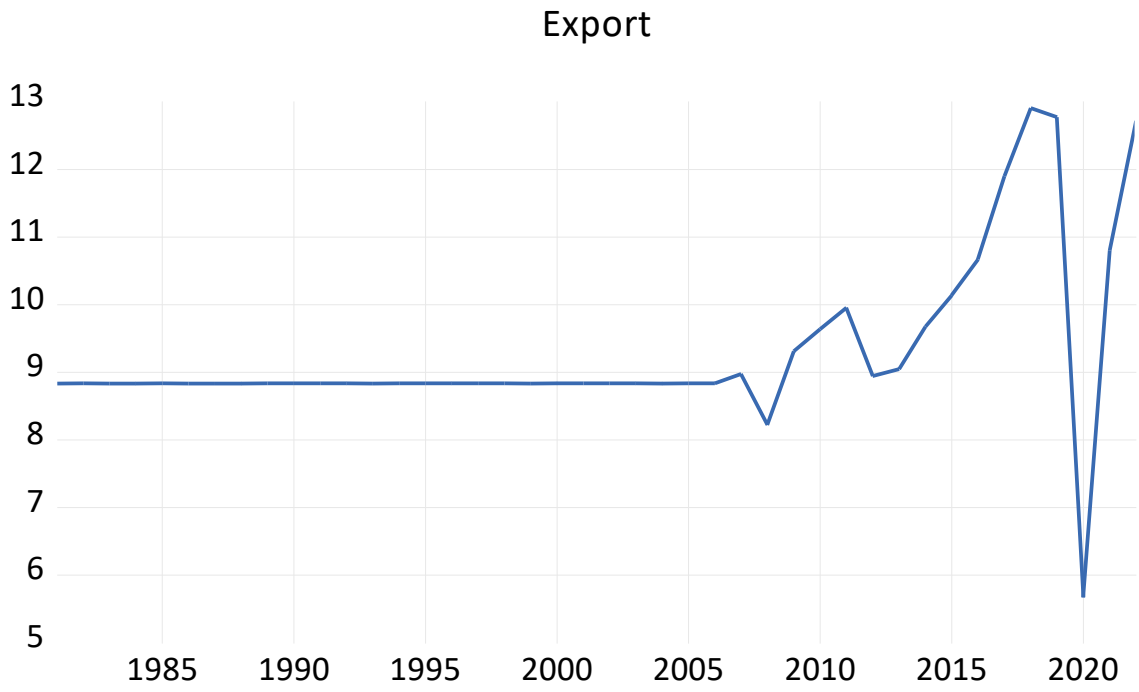
Foreign Direct Investment (FDI): The mean value is 0.4094 revealing that foreign investment percentages are moderate in Comoros. Median: 0.2630 indicating that the half of the observations lies below this value of the variable. Range: These extremes show high variability; the maximum of 2.2597 and the minimum of -0.3164. Standard Deviation: 0.5565, based on which moderate variability is observed. Skewness: the shape of the histogram of the residuals is right skewed with value 1.9426, which means carrying higher values are less likely. Kurtosis: 6.6641, which is also suggested a distribution that has the thick tails.

Figure 5. Annual FDI as a share of GDP 1981-2022



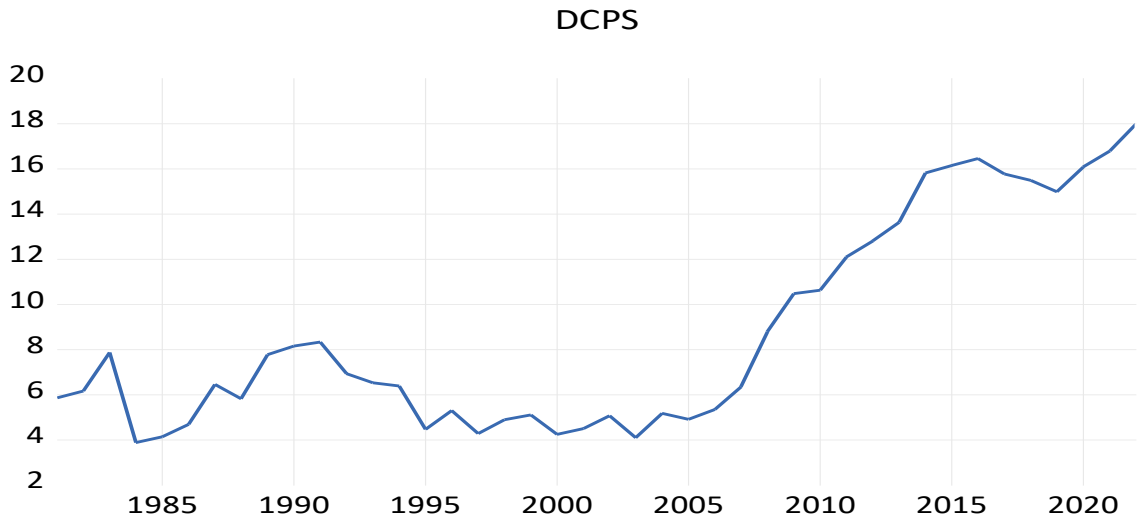
EXPORT: Mean: 9.3120, indicating a healthy export sector. Median: 8.8363, close to the mean, suggesting a symmetric distribution. Range: Maximum of 12.9090 and minimum of 5.6718, indicating moderate variability. Standard Deviation: 1.2999, reflecting moderate variability. Skewness: 1.1144, indicating a rightward skew. Kurtosis: 5.9301, suggesting a peak distribution.

Figure 6. Annual export as a share of GDP 1981-2022



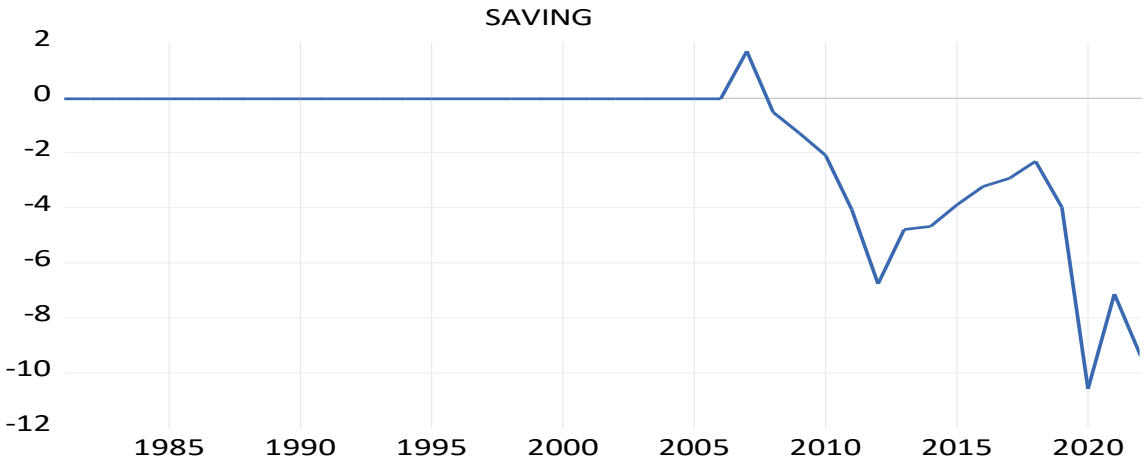
Domestic Credit to Private Sector (DCPS): Mean: 8.7306, indicating a significant level of credit availability. Median: 6.4933, suggesting that half of the observations are below this level. Range: Maximum of 17.9884 and minimum of 3.8787, indicating high variability. Standard Deviation: 4.5868, reflecting substantial variability. Skewness: 0.7458, indicating a slight rightward skew. Kurtosis: 1.9968, suggesting a distribution close to normal.

Figure 7.Annual domestic crédit to private sector as a share of GDP 1981-2022



Gross Domestic Savings (GDSV): Mean: -1.5972, indicating negative savings on average. Median: -0.0429, suggesting that half of the observations are below this level. Range: Maximum of 1.6819 and minimum of -10.5847, indicating significant variability. Standard Deviation: 2.7745, reflecting high variability. Skewness: -1.7129, indicating a leftward skew, suggesting that negative savings are more frequent. Kurtosis: 5.2413, indicating a distribution with heavy tails.

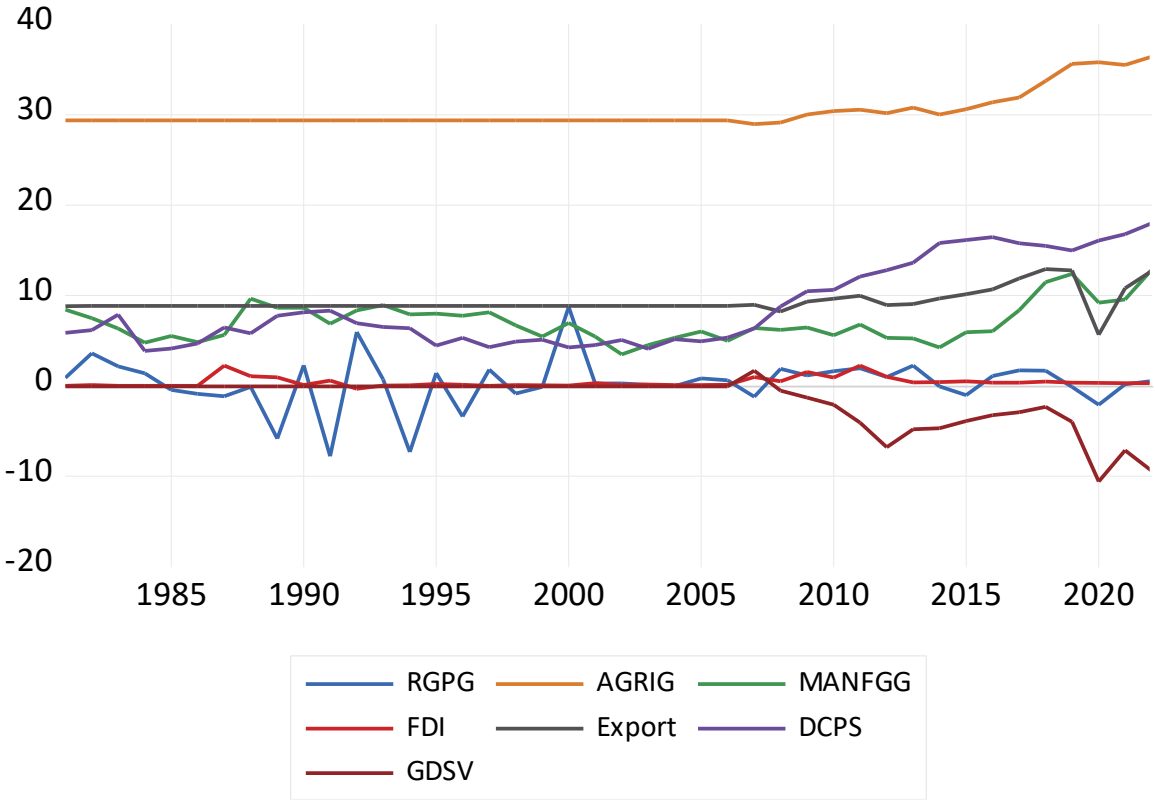
Figure 8.Domestic saving as a share of GDP1981-2022



Thus, the evaluation of these economic variables shows a certain degree of volatility and a highly skewed distribution by sector. The agriculture and service sectors seem to be the less fluctuating and

most prominent while manufacturing has a lot of fluctuation. FDI and export figures are not very high but are promising. The negative mean for gross domestic saving raises doubts for the rate of gross domestic savings that was an indicator of future economic health and sustainability. This analysis therefore calls for specific economic policy interventions to redress such imbalances and promote the development of other sectors.

Figure 9.Study variable's 1981-2022



4.2. Correlation Analysis

Table 2.Correlation matrix

	RGDP	AGRI	SERVICE	MANF	FDI	EXPORT	DCPS	GDSV
RGDP	1.0000	-0.0054	-0.0018	-0.0189	-0.1508	0.1186	-0.0025	-0.0110
AGRI	-0.0054	1.0000	-0.9278	0.6571	0.0355	0.5467	0.7843	-0.8317
SERVICE	-0.0018	-0.9278	1.0000	-0.5807	-0.1057	-0.4727	-0.6976	0.8117
MANF	-0.0189	0.6571	-0.5807	1.0000	-0.0340	0.4935	0.4002	-0.3467
FDI	-0.1508	0.0355	-0.1057	-0.0340	1.0000	0.0933	0.2490	-0.1635
EXPORT	0.1186	0.5467	-0.4727	0.4935	0.0933	1.0000	0.5698	-0.2848
DCPS	-0.0025	0.7843	-0.6976	0.4002	0.2490	0.5698	1.0000	-0.8469
GDSV	-0.0110	-0.8317	0.8117	-0.3467	-0.1635	-0.2848	-0.8469	1.0000

Whereas RGDP stands for annual real GDP growth, AGRI: annual agricultural growth as a share of GDP, SERVICE: annual service growth as a share of GDP; MANF: annual manufacturing growth scaled by GDP; FDI: foreign direct investment as a share of GDP; EXPORT: annual export growth as a share of GDP; DCPS: domestic credit provided to private sector as a share of GDP; GDSV: gross national saving as a share of GDP.

Source: Author's computation using EViews 13.

The correlation table analysis helps in establishing the extent of relatedness of various economic factors with an aim of establishing how these factors are related. Below is a detailed interpretation of the correlation coefficients and their implications:

RGDP (Real Gross Domestic Product): Coefficients of correlations with other variables are moderate, although not high; the highest correlation is with FDI (-0.1508). This makes it seem that as FDI rises, RGDP declines slightly, but the connexion is not strong enough to establish causality. The coefficients with AGRI, SERVICE, MANF, DCPS and GDSV are virtually zero, suggesting that the relationship between RGDP and these sectors are not directly proportional.

AGRI (Agriculture Sector): When the agricultural sector has a higher value the service sector has a slightly negative value of (-0.9278), this shows a negative relationship between the two sectors.

This could mean a switch between the agricultural and service sectors of the economy probably occasioned by factors such as resource allocation or structure. Indeed, the coefficient with MANF of 0.6571 implies that agriculture has a positive effect on manufacturing this may imply that agricultural output provides support to manufacturing. The regression with GDSV (-0.8317) implies that increased agricultural yield reduces the gross domestic savings which may imply certain kind of consumption or investment pattern.

SERVICE (Service Sector): The above negative coefficients are further supported by the strong negative association between the variable and AGRI (-0.9278) which confirmed the trade-off identified earlier. This study also found that there is an inverse relationship between the service sector and the manufacturing sector (-0.5807) which implies that as the service sector expands, the manufacturing sector may shrink, which may shift the economy focus. The macroeconomic variables indicate that the level of GDSV has a positive relationship with service sector growth, with a coefficient of 0.8117, which may suggest that consumers are more likely to save more in respect to their gross domestic savings with an expansion of the service industry.

MANF (Manufacturing Sector): There is a positive correlation with AGRI at 0.6571 which means that the expansion of the agricultural sector contributes to the progression of manufacturing perhaps in a form of the raw material. The result shows a negative relationship with SERVICE (-0.5807) which means that growth in one sector is inimical to the growth of the other. The coefficient with DCPS (0.4002) implies that as manufacturing expands, domestic credit to the private sector also rises, which shows that manufacturing may fund credit demand.

FDI (Foreign Direct Investment): The coefficient with RGDP (-0.1508) is negative but very low, and this mean that if FDI go up, RGDP will not necessarily go up as well. A positive relationship was established with DCPS at 0.2490, meaning that more foreign investment could mean more domestic credit to support the economy. The coefficient of determination of FDI with EXPORT is low (0.0933), this means that FDI has small impact on export performance.

EXPORT (Exports): The positive coefficient with AGRI (0.5467) imply that export is a function of agricultural growth hence agricultural products may be among the export commodities. This has been supported by the fact that the coefficient of determination with DCPS is 0.5698 which means that increased exports lead to increased domestic credit hence export growth may lead to increased demand for credit. The negative relationship with GDSV (-0.2848) implies that

countries with higher export levels may have lower GDSV perhaps implying that export-led economies may prefer expenditure over savings.

DCPS (Domestic Credit to Private Sector): This confirms a positive strongly significant relationship between AGRI and DOMC (0.7843), which shows that the expansion in agriculture activities may increase the demand for credit. The negative coefficients with GDSV (-0.8469) mean that domestic credit is negatively related to gross domestic savings, and it may be inferred that borrowing results in reduced saving.

GDSV (Gross Domestic Savings): These are further supported by the strong negative coefficients of (-) 0.8317 indicating that with increased agricultural output or higher savings rate, the savings rate would reduce and similarly the coefficient of (-) 0.8469 suggesting that increased domestic credit may lead to high consumption and little or no savings. The positive correlation with SERVICE (0.8117) means that growth in the sector is in fact positively related with saving which implies that service economy can foster saving.

Implications of the Correlation Results: The correlation analysis raises several significant suggestions to the economic policy and strategy:

Sectoral Trade-offs: The negative relationships between agriculture and services imply that the authors of economic policies may have to think more about the potential costs of building up these sectors. The way forward could be to maintain a balance between increasing agricultural production and growth of the service industry.

Support for Manufacturing: Again, the positive relationship between agricultural and manufacturing sectors means that policies targeting the improvement of agricultural production could have positive impacts on the manufacturing industries. This implies there is a gap that can be capitalised on in that area.

Foreign Investment and Economic Growth: The low coefficients with FDI and RGDP indicates that more of FDI, may not be enough to stimulate economic growth. It may be that a more holistic approach that takes into account the state of the whole economy may be required.

Credit and Savings Dynamics: The negative relationships between domestic credit and gross domestic savings are quite strongly significant, which may raise some concerns about economic

stability. This means that borrowing may reduce the savings rates and hence affect investment and in the long run the economy.

Export Growth and Economic Structure: The results of the positive and significant coefficients of the agriculture and exports indicate that improving on the agriculture sector could be a potential way of improving exports. This could be an important area of emphasis for trade and economic liberalization.

In summary, the correlation analysis provides valuable insights into the interrelationships among various economic indicators, highlighting the complexities of economic growth and the need for nuanced policy approaches that consider these dynamics.

4.3. Model fitness test

Table 3.Unit root test

	Augmented Dickey-Fuller			Phillips-Perron		
Variables	Level	t-Statistic	Prob.*	Level	t-Statistic	Prob.*
RGDP	I (0)	-7.8724	0.0000	I (0)	-7.7577	0.0000
AGRIG	I (1)	-4.8747	0.0017	I (1)	-4.83096	0.0019
MANFG	I (1)	-5.3207	0.0005	I (1)	-6.5683	0.0000
SERVICE	I (1)	-7.6566	0.0000	I (1)	-7.6855	0.0000
FDI	I (1)	-10.2754	0.0000	I (0)	-3.9573	0.0039
Export	I (0)	-3.9167	0.0043	I (0)	-3.8079	0.0058
DCPs	I (1)	-6.4238	0.0000	I (1)	-6.4329	0.0000
GDSV	I (1)	-8.8814	0.0000	I (10	-9.4861	0.0000

Whereas RGDP stands for annual real GDP growth, AGRI: annual agricultural growth as a share of GDP, SERVICE: annual service growth as a share of GDP; MANF: annual manufacturing growth scaled by GDP; FDI: foreign direct investment as a share of GDP; EXPORT: annual export growth as a share of GDP; DCPS: domestic credit provided to private sector as a share of GDP; GDSV: gross national saving as a share of GDP.

Source: Author's computation using EViews 13.

The unit root test is used in the investigation. Table 3 displays the findings of the Phillips-Perron (PP) and Augmented Dickey-Fuller (ADF) tests for a number of economic variables. Understanding it is essential for assessing the time series data's stationarity, which has important ramifications for the research of econometric modeling and forecasting. The following is a presentation of the analysis, interpretation, and implications of the unit root test findings for each variable in Table 3.

The ADF test indicates that the annual real domestic product growth (RGDP) is stable at level I (0), with a t-statistic value of -7.8724 and a p-value of 0.0000. PP Test: RGDP is also stationary at -7.7577, as indicated by the t-statistic value and the p-value statistical value of 0.0000, indicating that RGDP is also stationary at level I (0). This suggest that RGDP can be used in the regression models without differencing, as it does not exhibit a unit root.

The agriculture sector economic growth as a share of GDP (AGRIG) ADF Test t-statistic is -4.8747 and the p-value of 0.0017, indicating that AGRIG is non-stationary at level I (1) and the PP test t-statistics are -4.83096 with its p-value of 0.0019, showing that non-stationarity at level I (1). This result suggests that AGRIG requires differencing to achieve stationarity, suggesting that its long-term trends need to be accounted for in the study modeling.

The manufacturing sector economic growth as a share of GDP (MANFG) ADF tests of the t-statistic value is -5.3207 and its p-value of 0.0005, meaning that non-stationarity at level I (1), and the PP test t-statistic is -6.5683 with a p-value of 0.0000, suggesting that a non-stationarity at level I (1). This implies that like the agricultural economic growth (AGRIG), the manufacturing sector economic growth (MANFG) needs to be different to be used in regression analysis.

The service sector economic growth as a share of GDP (SERVICE) ADF Test t-statistics value is -7.6566 with a p-value of 0.0000, indicating non-stationarity at level I (1), and the PP test t-statistics are -7.6855 with a p-value of 0.0000, showing that the variables non-stationarity at level I (1). The service sector data also requires differencing, indicating that it has a unit root.

Foreign direct investment as a share of GDP (FDI) ADF test t-statistics value is -10.2754 with a p-value of 0.0000, suggesting that FDI is stationary at level I (1), and the PP test t-statistic is -3.9573 with a p-value of 0.0039, confirming that FDI is non-stationary at level I (0). The unit root test results suggest that FDI may exhibit different characteristics depending on the test used.

The export as a share of GDP ADF test t-statistic is -3.9167 and the p-value is 0.0043, shows that export is stationary at level I (0), and the PP test t-statistic is -3.8079 with a p-value of 0.0058, confirming stationarity at level I (0). Therefore, the variable export can be included in regression models without differencing.

Domestic credit to private sector as a share of GDP (DCPS) ADF Test t-statistic is -6.4238 with a p-value of 0.0000, showing that the non-stationarity of the variable at level I (1) and the PP test t-statistic value is -6.4329 with a p-value of 0.0000, suggesting that the non-stationarity of the variable at level (1). Thus, domestic credit provided to the private sector as a share of GDP (DCPS) requires differentiation to achieve stationarity.

The gross national saving as a share of GDP (GDSV) ADF test t-statistic is -8.8814 with a p-value of 0.0000, indicating that the variable non-stationarity at level difference I (1) and the PP test t-statistic value is -9.4861 with a p-value of 0.0000, suggesting that non-stationarity of the variable at level difference I (1). Therefore, the gross national saving as a share of GDP also needs to be different to be used in regression analysis.

In conclusion, the results of the unit root test analysis in table 3 have significant implications for economic modeling in this research study. The stationarity of variables distinction between I (0) and I (1) is crucial for furthers regression analysis. Based on the unit root test analysis result stationary variables annual real GDP per capita growth and export as a share of GDP can be used directly in regression models, while variables, such as the agricultural economic growth as a share of GDP, the manufacturing economic sector growth as a share of GDP, the service sector economic growth as a share of GDP, the domestic credit provided to private sector as a share of GDP, and the gross national saving as a share of GDP requires differencing to avoid spurious regression results. When we build econometric models, it is crucial to ensure that all variables are stationary at I (0) and I (1). This may involve differencing non-stationary variables, which can affect the interpretation of the results and the dynamics of the relationships being studied.

The presence of non-stationary variables may suggest the need for cointegration analysis to explore long-term relationships between variables, particularly for those that are I (1). Therefore, understanding which variables are stationary can inform policymakers about the stability of economic indicators and their relationships, guiding effective economic strategies. In conclusion,

the unit root test results provide critical insights into the nature of the economic variables analyzed, guiding both theoretical understanding and practical applications in economic modeling.

Table 4. Johnson -Cointégration test

Hypothesized No. of CE(s)	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.696635	102.2765	69.81889	0.0000
At most 1 *	0.441873	54.56373	47.85613	0.0103
At most 2 *	0.347287	31.23696	29.79707	0.0039
At most 3	0.298216	14.17225	15.49471	0.0083
At most 4	0.000177	0.007068	3.841465	0.9324

Source: Authors computation using EViews 13

The analysis table for the Johansen cointegration test sheds light on the long-term connections between many time series variables. The findings show that the variables under investigation exhibit cointegration, which is crucial for comprehending how they interact dynamically across time.

Analysis of the Findings

Nothing: The results of the test show that the variables have at least one cointegrating connection. The trace statistic is 102.2765 and the eigenvalue is 0.696635, both of which are higher than the critical value of 69.81889 at the 0.05 significance level. The null hypothesis of no cointegration is strongly refuted by the p-value of 0.0000.

At most 1: With an eigenvalue of 0.441873 and a trace statistic of 54.56373, both of which are higher than the critical value of 47.85613, the second hypothesis likewise yields noteworthy findings. There is evidence for at least one cointegrating equation, according to the p-value of 0.0103.

At most 2: The findings, which surpass the critical value of 29.79707 with an eigenvalue of 0.347287 and a trace statistic of 31.23696, continue to confirm the existence of cointegration. The conclusion that there are at least two cointegrating links is supported by the p-value of 0.0039.

At most 3: The p-value of 0.0083 shows that there is still some evidence for a third cointegrating equation, even if the trace statistic of 14.17225 is less than the critical value of 15.49471.

At most 4: The findings indicate a trace statistic of 0.007068 and an eigenvalue of 0.000177, both of which are well below the crucial threshold of 3.841465. The model does not support the presence of more than three cointegrating connections, as indicated by the p-value of 0.9324, which implies no evidence for a fourth cointegrating equation.

The Johansen cointegration test results have several significant ramifications.

Long-term Relationships Exist: The variables appear to have a long-term equilibrium connection when cointegration is present. This indicates a steady relationship throughout time, even if the individual time series may not be stationary. Instead, their linear combinations are stationary.

The results suggest that the autoregressive distribute lag model (ARDL) is a suitable model to utilize for modeling these variables. A more realistic portrayal of the data is made possible by this model, which takes into consideration both short-term dynamics and long-term associations.

Economic Interpretation: The presence of several cointegrating equations might reveal information about the fundamental economic connections. For example, if the variables reflect several economic sectors, their cointegration may reveal interdependencies that policymakers should take into account when formulating economic policies.

Additional Analysis: Based on the findings, it is necessary to do additional research to examine the nature of the correlations between the variables, with a specific emphasis on the initial three cointegrates. Strategic decision-making and forecasting accuracy can both be improved by comprehending these linkages.

In summary, the Johansen cointegration test results indicate significant long-term relationships among the variables, which are crucial for effective econometric modeling and economic interpretation.

4.4. Regression Analysis

4.4.1. FDI and Economic growth

Table 5. ARDL Error Correction Regression ARDL (1, 0, 0, 0, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Cointegration Eq (-1) *	-1.229150	0.147774	-8.317762	0.0000
R-squared	0.633648	Mean dependent var		-0.008852
Adjusted R-squared	0.633648	S.D. dependent var		4.524334
S.E. of regression	2.738443	Akaike info criterion		4.876744
Sum squared resid	299.9628	Schwarz criterion		4.918538
Log likelihood	-98.97325	Hannan-Quinn criter.		4.891963
Durbin-Watson stat	1.868016			
* p-value incompatible with t-Bounds distribution.				
F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Significance.	I (0)	I (1)
F-statistic	10.08950	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

source: Authors computation using EViews 13

Table 5 exhibits the output of the regression analysis through the error correction regression model from ARDL. The table depicts the study on the relationship between economic growth and FDI in Comoros, including some control variables: exports, domestic credit, and domestic savings.

The estimated coefficient of the cointegration equation at -1.229150 is statistically significant, supported by a t-statistic of -8.317762 and a p-value of 0.0000. Indeed, this reflects that there

is a statistically significant long-term association among the variables involved in the model put under scrutiny. The negative sign, therefore, indicates that any deviation from the long-run equilibrium will tend to affect economic growth, adjusting at approximately 1.23 units per annum.

The R-squared value of 0.633648 infers that about 63.36% of the variation in economic growth is explained by the model used in this study, which includes foreign direct investment, exports, domestic credit, and domestic savings. This therefore means that the model fits fairly well. Here, the adjusted R-squared is the same as the R-squared itself; hence, the model doesn't have the issue of overfitting for the given number of predictors.

Statistical Significance: The standard error of the cointegration equation has a low value, 0.147774, which increases confidence in the estimate of the coefficient.

The Durbin-Watson statistic, recorded at 1.868016, suggests that there is no significant autocorrelation in the residuals, which is a positive reflection on the validity of the regression findings.

F-Bounds Test: From the above analysis, the computed F-statistic of 10.08950 is greater than the critical values for both I (0) and I(1) for a number of different significance levels, namely, 10%, 5%, 2.5%, and 1%. We can now reject the null hypothesis of no levels relationship; hence, there exists a long-run relationship among the variables.

Implication of the analysis: The finding indicates that the underlying cointegration among FDI, exports, domestic credit, and savings are related and connected in the long run. The economic growth policies should consider these variables in their entirety.

Adjustment Mechanism: The negative sign of the coefficient in the cointegration equation would suggest that whenever economic growth was to ever diverge from the long-run path, then adjustment to equilibrium comes at a rather fast pace. This, therefore, points to the importance of keeping economic conditions stable when considering economic growth.

Table 6.ARDL Long Run Form and Bound Test Model: ARDL (1, 0, 0, 0, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-3.287796	3.638135	-0.903704	0.3723
RGDPG (-1) *	-1.229150	0.162168	-7.579465	0.0000
FDI**	-0.552040	0.868737	-0.635451	0.5293
EXPORT**	0.543904	0.485224	1.120933	0.2699
DCPS**	-0.170750	0.252658	-0.675814	0.5036
GDSV**	-0.207364	0.351278	-0.590313	0.5588

* p-value incompatible with t-Bounds distribution.

** Variable interpreted as Z = Z (-1) + D(Z).

Levels Equation

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	-0.449123	0.716659	-0.626690	0.5349
EXPORT	0.442504	0.393866	1.123487	0.2689
DCPS	-0.138917	0.205326	-0.676568	0.5031
GDSV	-0.168705	0.285536	-0.590835	0.5584
C	-2.674852	2.951851	-0.906161	0.3710

EC = RGPG - (-0.4491*FDI + 0.4425*EXPORT -0.1389*DCPS -0.1687*GDSV - 2.6749)

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I (0)	I (1)
			Asymptotic: n=1000	
F-statistic	10.08950	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Whereas RGDP stands for annual real GDP growth, AGRI: annual agricultural growth as a share of GDP, SERVICE: annual service growth as a share of GDP; MANF: annual manufacturing growth scaled by GDP; FDI: foreign direct investment as a share of GDP; EXPORT: annual export growth as a share of GDP; DCPS: domestic credit provided to private sector as a share of GDP; GDSV: gross national saving as a share of GDP.

Source: Author's computation using EViews 13.

The regression models obtained for the ARDL Long Run Form, and the Bound Test bring out very useful information on the relationship between economic growth, RGDPG, and FDI, integrating some control variables such as exports, domestic credit, and domestic savings.

The coefficient for the lagged RGDPG is -1.229150 with the standard error of 0.162168. From this, the t-statistic of -7.579465 and the p-value of 0.0000 imply that this variable is statistically significant. This suggests that past economic growth has a negative effect on current growth and may imply mean-reverting behavior in economic growth. For FDI, an estimate for the coefficient is -0.552040, with a standard error of 0.868737. The t-statistic obtained from this model is -0.635451, and thus, with a p-value of 0.5293, FDI is insignificant in this model. That means variation in FDI does not significantly affect the economic growth once the other variables are controlled.

The export coefficient is estimated to be 0.543904, with a standard error of 0.485224. The t-statistic stood at 1.120933 while the p-value is 0.2699-insignificant to affect the impact export has on the economy in the present framework.

Further, domestic credit had an estimated coefficient of -0.170750 with a standard error of 0.252658. It had a t-statistic of -0.675814 and the p-value was 0.5036, hence insignificantly influencing economic growth.

Domestic savings estimated coefficient is -0.207364 standard errors are 0.351278. The calculated t-statistic comes out to be -0.590313, a p-value of 0.5588 shows insignificance of domestic savings as determinants of economic growth.

The F-statistic of 10.08950 is greater than the critical values of both I (0) and I (1) at all levels of significance, 10%, 5%, 2.5%, and 1%. This indicates that the hypothesis of no level's relationship can be rejected, hence confirming the presence of a long-run relationship among the variables under consideration.

The non-significance of FDI, export, domestic credit, and domestic savings from the analysis that lacks significant impact might imply that they are perhaps not the real contributors to the

growth in this model context. This would therefore mean that other factors, which have not been captured in this model, might be at play.

Policy Considerations: With FDI and all other control variables being insignificant in explaining variation in economic growth, policymakers may look for other ways to spur growth. These include structural reforms, enhancement of the business environment, and direct investment in human capital and technology.

Further Research: It is indicated that more detailed analysis needs to be carried out in terms of factors that influence economic growth. Further research might include other variables or model specifications to better capture the complexity of changes in economic growth.

Lastly, although the model showed that there is a long-run relationship between the variables, the contribution of FDI, exports, domestic credit, and domestic savings to economic growth was not significant; hence, they may be weak variables as compared to other determinants.

4.4.2. FDI and Agricultural economic growth

Table 7.ARDL Error Correction Regression Selected Model: ARDL (2, 0, 2, 0, 2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D (AGRIG (-1))	-0.323022	0.139091	-2.322385	0.0274
D(EXPORT)	0.208526	0.040639	5.131215	0.0000
D (EXPORT (-1))	0.114473	0.063475	1.803431	0.0817
D(GDSV)	0.074420	0.047802	1.556821	0.1304
D (GDSV (-1))	-0.263167	0.051049	-5.155136	0.0000
Cointegration Eq (-1) *	0.086177	0.010604	8.126855	0.0000
R-squared	0.810852	Mean dependent var		0.175884
Adjusted R-squared	0.783036	S.D. dependent var		0.510135
S.E. of regression	0.237618	Akaike info criterion		0.101172
Sum squared resid	1.919711	Schwarz criterion		0.354504
Log likelihood	3.976551	Hannan-Quinn criter.		0.192769
Durbin-Watson stat	2.293535			

* p-value incompatible with t-Bounds distribution.

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Significance	I (0)	I (1)
F-statistic	9.388859	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Whereas AGRI: annual agricultural growth as a share of GDP, SERVICE: annual service growth as a share of GDP; MANF: annual manufacturing growth scaled by GDP; FDI: foreign direct investment as a share of GDP; EXPORT: annual export growth as a share of GDP; DCPS: domestic credit provided to private sector as a share of GDP; GDSV: gross national saving as a share of GDP.

Source: Author's computation using EViews 13.

The results of the ARDL error correction regression models investigating the interplay of agricultural economic growth and FDI, conditioned by specific control variables such as exports, domestic credit, and domestic savings, are presented in Table 7.

Key Findings

Lagged Agricultural Growth: This is represented by D (AGRIG (-1)) and has a coefficient of -0.323022 with a standard error of 0.139091. The t-statistic is -2.322385 with a p-value of 0.0274. This variable is statistically significant at the 5% level. The negative sign of the coefficient suggests that past agricultural growth negatively impacts current growth and may suggest a mean-reverting process in agricultural output.

Export-D (EXPORT): The estimated coefficient for current exports is 0.208526 with the standard error of 0.040639. The calculated t-statistic is 5.131215 while the p-value is 0.0000, showing the highly significant positive relation of current export and agricultural growth. The positive value shows that agricultural economic growth is contributed positively by an upward increase in the level of exports.

Lagged Exports (D (EXPORT (-1): The estimated coefficient is 0.114473, with a standard error of 0.063475. The computed t-statistic is 1.803431, with the p-value being 0.0817, hence significant only marginally at 10% level. This infers that the previous export level positively shocks the current growth of agriculture, though the level of significance is lesser compared to the current exports.

Domestic Savings D(GDSV): The coefficient value for current domestic savings is 0.074420, the standard error is 0.047802. The t-statistic computed is 1.556821, and the p-value is 0.1304, and hence insignificantly different from zero at usual levels. So, it means current domestic savings are not significantly affecting agricultural growth.

Lagged Domestic Savings D (GDSV (-1)): The coefficient estimate is -0.263167 standard error 0.051049. Computed TS -5.155136, Prob. 0.0000, hence negatively significant. What this will mean is that lagged domestic savings are negatively influencing the current growth of agriculture-meaning, higher savings in the past will not exactly translate immediately in terms of growth.

Cointegration Equation: The below cointegrating equation has an estimated coefficient of 0.086177 with a standard error of 0.010604. The t-statistic is 8.126855, and the respective p-

value is 0.0000, which means a significant long-run association among the variables exists in the model.

Model Fit and Diagnostics: This is a relatively high R-square statistic of 0.810852 explaining about 81 percent in variability of agricultural growth explained by the model. Also, an equally high adjusted R-square value of 0.783036 showing a good model fit adjusting the number of predictors.

The Durbin-Watson statistic of 2.293535 does not indicate serious autocorrelation in the residuals and therefore is a good omen regarding the validity of the model.

F-Bounds Test Results: The estimated F-statistic of 9.388859 is greater than all the critical values of both I (0) and I (1) at 10%, 5%, 2.5%, and 1% levels. This therefore allows one to reject the null hypothesis of no levels relationship; hence, there exists a long-run relationship among the variables.

Implication of the analysis result.

The very high positive correlation of exports with agricultural growth may indicate that an increase in exports performance through appropriate policy measures can bring significant improvement in growth rates in the agricultural sector. This may be achieved by having better trade agreements, a reduction in trade barriers, and competitiveness of Agri-products in international markets.

Negative impacts of past domestic savings include that it may mean inefficiency in the allocation or investment of savings into agricultural development; this may mean the revision of financial policies to ensure that savings are well allocated to productive agricultural investment.

The analysis, in a nutshell, brings out a strong long-run association between agricultural growth and exports that underlines the need for policies that promote exportable supply. Moreover, the past domestic savings are also found to be not making any significant contribution to present agricultural growth and thus requires further investigation into the usage of savings in the agricultural sector as well.

Table 8. ARDL Long Run Form and Bounds Test ARDL (2, 0, 2, 0, 2)

Conditional Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-7.102365	1.879942	-3.777970	0.0007
AGRIG (-1) *	0.086177	0.068333	1.261136	0.2173
FDI**	-0.107003	0.091485	-1.169623	0.2517
EXPORT (-1)	0.482233	0.109483	4.404634	0.0001
DCPS**	0.061930	0.028984	2.136688	0.0412
GDSV (-1)	0.201608	0.064451	3.128106	0.0040
D (AGRIG (-1))	-0.323022	0.157993	-2.044536	0.0501
D(EXPORT)	0.208526	0.067389	3.094359	0.0043
D (EXPORT (-1))	0.114473	0.090739	1.261567	0.2172
D(GDSV)	0.074420	0.073656	1.010361	0.3207
D (GDSV (-1))	-0.263167	0.070583	-3.728489	0.0008
* p-value incompatible with t-Bounds distribution.				
** Variable interpreted as Z = Z (-1) + D(Z).				
Levels Equation				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	1.241661	1.565452	0.793165	0.4341
EXPORT	-5.595841	5.077218	-1.102147	0.2795
DCPS	-0.718635	0.540383	-1.329861	0.1939
GDSV	-2.339469	1.414767	-1.653608	0.1090
C	82.41603	46.81396	1.760501	0.0889
EC = AGRIG - (1.2417*FDI -5.5958*EXPORT -0.7186*DCPS -2.3395*GDSV + 82.4160)				
F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I (0)	I (1)
			Asymptotic: n=1000	
F-statistic	9.388859	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87

	1%	3.29	4.37

Whereas AGRI: annual agricultural growth as a share of GDP; FDI: foreign direct investment as a share of GDP; EXPORT: annual export growth as a share of GDP; DCPS: domestic credit provided to private sector as a share of GDP; GDSV: gross national saving as a share of GDP.

Source: Author's computation using EViews 13.

The outcomes from ARDL Long Run Form and Bound Test regressions suggest that the findings have an important bearing on the interactional relationship between agricultural economic growth and FDI, considering exports, domestic credit, and domestic savings.

AGRIG (-1) The estimated coefficient for lagged AGRIG is 0.086177, for which the standard error is 0.068333. Here, the t-statistic is 1.261136 and the p-value is 0.2173, indicating insignificance. Thus, agricultural growth for the last period does not notably impact the current one.

Summary: FDI has a coefficient of -0.107003 with a standard error of 0.091485. The computed t-statistic is -1.169623, while the p-value obtained therein is 0.2517, suggesting insignificance of FDI in this model setup. This, in other words, means that at the fixed level of other variables, any change in FDI fails to strongly influence agricultural growth.

EXPORT (-1): 0.482233, Standard Error = 0.109483, t-statistic = 4.404634, p-value = 0.0001. This means a highly significant positive relationship. Past export shows a positive relation to the present growth of agriculture and therefore signifies the importance of export performance.

Domestic Credit: For domestic credit, DCPS, the estimated coefficient is 0.061930 with a standard error of 0.028984. The t-statistic is 2.136688, while the p-value is 0.0412, showing that domestic credit positively contributes to agricultural growth.

GDSV (-1): The coefficient is expected to be 0.201608 with the standard error of 0.064451. The t-statistic calculated is 3.128106 whereas the p-value obtained is 0.0040, reflecting a

strong positive correlation. Therefore, one can conclude that lagged domestic savings positively influence present agricultural development.

Differenced Agricultural Growth, $(AGRIG)_t-1$: The coefficient estimate is -0.323022, with a standard error of 0.157993. The t-statistic computed is -2.044536 with a p-value of 0.0501, hence this variable is statistically significant. The negative coefficient indicates that past growth is negatively affecting current growth and might imply that mean-reverting dynamics exist.

Differentiated Exports D(EXPORT):

The estimated coefficient value is 0.208526, while the standard error is 0.067389. The t-statistic computed is 3.094359, while the associated p-value, 0.0043, implies a significant positive relationship. What it really means is that increased current exports result in increased agricultural growth.

Differenced domestic savings, D(GDSV):

The coefficient is 0.074420 with the standard error of 0.073656. The t-statistic that has been estimated is 1.010361 while p-value obtained is 0.3207, which implies insignificance of current domestic savings affecting the agricultural growth.

Lagged Differenced Domestic Savings, D(GDSV (-1)), has a coefficient of -0.263167 with a standard error of 0.070583. The calculated t-statistic is -3.728489, while the p-value is 0.0008, showing that there is a statistically significant relationship which is negative. Domestic savings in the past have a negative impact on agricultural growth today.

Cointegration and Model Fit

The F-statistic, 9.388859, is larger than each of the critical values of both I (0) and I(1) at all levels of significance. This therefore enables the rejection of the no-relationship null hypothesis levels. It confirms the presence of a long-run relationship between the variables within the model.

The R-square statistic is 0.810852, thus, indicating that approximately 81% of agricultural growth is accounted for by the model, hence relatively high explanatory power by the model.

Implication of the study result

Exports play an important role: The high positive correlation seen in the pre-export level and agricultural development shows that developing the export capacity might boost economic growth of the agriculture sector significantly. Policies aimed at increasing trade agreements and reducing barriers can be helpful.

The impact of credit in this industry may further indicate that this particular sector could be sparked to develop by providing easier access to financial means to farmers and agricultural companies.

The fact that historical domestic savings have a negative effect on agricultural development might indicate inefficient use of such savings. This calls for an examination of appropriate financial policies that ensure that savings are correctly channeled into productive agricultural investment.

In short, the analysis reveals the strong and significant relationship of agricultural development to export performance in the long run, supplemented by positive contributions from domestic credit availability. Consequently, these results tend to reflect that export efficiency-enhancing policies and credit facilitation policies might constitute some viable strategies toward economic growth in the sector.

4.4.3. FDI and Manufacturing economic growth

Table 9. ARDL Error Correction Regression ARDL (1, 0, 0, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
Cointegration Eq (-1) *	-0.211105	0.035879	-5.883779	0.0000
R-squared	0.461170	Mean dependent var		0.107849
Adjusted R-squared	0.461170	S.D. dependent var		1.518184
S.E. of regression	1.114424	Akaike info criterion		3.078640
Sum squared resid	49.67762	Schwarz criterion		3.120434
Log likelihood	-62.11212	Hannan-Quinn criter.		3.093859
Durbin-Watson stat	2.206695			

* p-value incompatible with t-Bounds distribution.				
F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Significance.	I (0)	I (1)
F-statistic	5.048582	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Whereas: MANF: annual manufacturing growth scaled by GDP; FDI: foreign direct investment as a share of GDP; EXPORT: annual export growth as a share of GDP; DCPS: domestic credit provided to private sector as a share of GDP; GDSV: gross national saving as a share of GDP.

Source: Author's computation using EViews 13.

Table 9. results of ARDL error correction regression model provide the insight of the relationship between manufacturing economic growth and foreign direct investment, controlling exports, domestic credit, and domestic savings in Comoros economy.

The cointegration equation coefficient is negative, -0.211105, and statistically significant; the t-statistic is -5.883779, while the p-value is 0.0000. This does suggest there is a long-run relationship between the variables in this model. The negative sign here reflects that about 21.1 percent of the deviations from this long-term equilibrium are corrected in each period.

Model Fit: R-squared = 0.461170, thus, about 46.1% of the variability in manufacturing economic growth is accounted for by this model. Overall R-squared was the same once adjusted for the number of predictors in model and thus, the model was appropriately specified.

Error Correction Term: The inclusion of the error correction term reflects the fact that the model converges to equilibrium once the system suffers a shock; this could indeed be essential in understanding how FDI and other variables dynamically affect growth in manufacturing over time.

F-Bounds Test: the calculated F-statistic of 5.048582 is greater than the critical value for I (0) at 10% level of 2.2. This implies that there exists a long-run relationship among the variables; hence, the null hypothesis of no levels relationship is rejected.

Table 10. ARDL Long Run Form and Bounds Test ARDL (1, 0, 0, 0, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-5.579297	1.653387	-3.374465	0.0018
MANFGG (-1) *	-0.211105	0.108640	-1.943155	0.0601
FDI**	0.306457	0.361345	0.848102	0.4021
EXPORT**	0.810298	0.196677	4.119935	0.0002
DCPS**	-0.069061	0.102653	-0.672755	0.5055
GDSV**	-0.045107	0.146259	-0.308407	0.7596

* p-value incompatible with t-Bounds distribution.

** Variable interpreted as Z = Z (-1) + D(Z).

Levels Equation				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	1.451679	2.025737	0.716618	0.4784
EXPORT	3.838363	2.187586	1.754611	0.0881
DCPS	-0.327138	0.514393	-0.635969	0.5289
GDSV	-0.213673	0.677520	-0.315375	0.7543
C	-26.42900	18.50554	-1.428167	0.1621

EC = MANFGG - (1.4517*FDI + 3.8384*EXPORT -0.3271*DCPS -0.2137*GDSV - 26.4290)

F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I (0)	I (1)
			Asymptotic: n=1000	
F-statistic	5.048582	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Whereas MANF: annual manufacturing growth scaled by GDP; FDI: foreign direct investment as a share of GDP; EXPORT: annual export growth as a share of GDP; DCPS:

domestic credit provided to private sector as a share of GDP; GDSV: gross national saving as a share of GDP.

Source: Author's computation using EViews 13.

Table 10: Results from ARDL Long Run Form and Bound Test regression model explaining the relationship of economic growth in manufacturing sector with FDI, taking exports, domestic credit as well as domestic savings into account.

It has a lagged value of manufacturing growth the coefficient correspondingly equals -0.211105, t-statistic is -1.943155, and the p-value is 0.0601. That shows the negative correlation, meaning previous growth in manufacturing hampers it currently, though this significance is not so high and almost reaches the threshold 0.05.

The estimated coefficient for FDI is 0.306457, but it is not significant (t-statistic = 0.848102, p-value = 0.4021). This would mean that, within this model, FDI does not make any significant direct contribution to the growth of manufacturing.

The estimated coefficient for export is 0.810298, showing that it is statistically significant at t-stats = 4.119935 and p-value = 0.0002. This suggests that the positive correlation is quite strong and that with increasing export, the manufacturing growth shows remarkable improvements.

Domestic credit stands at -0.069061 and is not significant. The t-statistic is -0.672755, with a p-value of 0.5055. The implication is that domestic credit, within this scope, does not significantly explain any changes in the growth of the manufacturing sector.

The coefficient for domestic savings is -0.045107, also not statistically significant (t-statistic = -0.308407, p-value = 0.7596). This indicates that domestic savings do not significantly influence manufacturing growth.

F-Bounds Test Results

Results of the F-Bounds Test The F-statistic with a value of 5.048582 outperforms the critical value of I (0) at the 10% level of significance which is 2.2, hence from this we reject the null

hypothesis of no long-run relationship hence there exist a long-run relationship between manufacturing growth, FDI, exports, domestic credit, and domestic savings.

From the results, it is postulated that the strong positive association between exports and manufacturing growth demonstrates the crucial role of international trade in developing the manufacturing sector. For such reasons, policymakers are suggested to pay more attention to those policies that will enhance export growth to trigger off manufacturing. As FDI is found to have insignificant effects, it follows that though attracting foreign investment is relevant, it may not be enough to spur manufacturing growth. This would then suggest that other policies designed to improve the overall business climate and productivity conditions in the manufacturing sectors are necessary. For example, negative or insignificant coefficients for domestic credit and savings may suggest that under the prevailing conditions such variables could be less important. That might indicate that the greater access to finance and increased savings are unlikely to achieve significant improvement in the growth of manufacturing sector performance unless some other structural constraints are also eased.

These findings underline that an integrated approach is required to promote manufacturing growth and it needs to be combined with export promotion, improvement in the investment climate, and removal of entrenched structural bottlenecks in the economy.

The analysis indicates that although there is a long-run relationship, the various significance levels obtained imply targeted policies of increased export and a favorable climate for FDI for the sustenance of growth within the manufacturing sector.

4.4.4. FDI and service economic growth

Table 11. ARDL Error Correction Regression ARDL (1, 1, 2, 0, 2)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(FDI)	0.036617	0.126880	0.288596	0.7749
D(EXPORT)	-0.219034	0.086365	-2.536152	0.0169
D (EXPORT (-1))	-0.318538	0.107461	-2.964215	0.0060
D(GDSV)	0.065777	0.089254	0.736956	0.4671
D (GDSV (-1))	0.492314	0.093773	5.250047	0.0000
CointEq (-1) *	-0.319348	0.083083	-3.843723	0.0006
R-squared	0.547893	Mean dependent var		-0.107204
Adjusted R-squared	0.481407	S.D. dependent var		0.611586
S.E. of regression	0.440424	Akaike info criterion		1.335324
Sum squared resid	6.595098	Schwarz criterion		1.588656
Log likelihood	-20.70648	Hannan-Quinn criter.		1.426921
Durbin-Watson stat	2.202155			
* p-value incompatible with t-Bounds distribution.				
F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I (0)	I (1)
F-statistic	2.100255	10%	2.2	3.09
k	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Whereas SERVICE: annual service growth as a share of GDP; FDI: foreign direct investment as a share of GDP; EXPORT: annual export growth as a share of GDP; DCPS: domestic credit provided to private sector as a share of GDP; GDSV: gross national saving as a share of GDP.

Source: Author's computation using EViews 13.

Results obtained from Table 11, through the ARDL error correction regression model, provide valuable information on the relationship between service sector economic growth and FDI, with exports, domestic credit, and domestic savings as other variables.

The coefficient on FDI is 0.036617, but it is insignificant statistically because t-statistic is 0.288596 and the p-value is 0.7749; hence, it implies that FDI has no significant effect on the growth of the service economy in the short run.

The coefficient of current export D(export) is -0.219034 and statistically significant with t-statistic value of -2.536152 and p-value 0.0169; this shows that with an increase in export, the economic growth of services decreases, which is not expected and points to pitfalls such as over-dependency on export and saturation.

The coefficient of the lagged exports, D (EXPORT (-1)), is -0.318538, statistically significant at t-statistic = -2.964215 and p-value = 0.0060. This further indicates that exports inversely affect the growth in the service economy and this effect is carried forward even in the future periods.

The coefficient of D(GDSV) is approximately 0.065777, which is obviously insignificant statistically due to its t-statistic equaling 0.736956 and the p-value equaling 0.4671. Therefore, it can be said that current domestic savings do not significantly impact service economic growth.

However, the coefficient of the lagged domestic savings, D (GDSV (-1)), is 0.492314, which is statistically significant with the t-statistic at 5.250047 and a p-value of 0.0000. This infers that past domestic savings strongly positively affect current service economic growth and, over time, savings do translate into investment and growth.

Cointegration and Error Correction: The coefficient of the error correction term, CointEq (-1), is -0.319348, which is statistically significant with a t-statistic of -3.843723 and a p-value of 0.0006. It therefore follows that approximately 31.9% of the disequilibrium from the previous period is corrected in the present period, reflecting stability in the long-run relationship among the variables.

Model Calibration:

The R-squared value of 0.547893 indicates that, in fact, approximately 54.8% of the variance in the economic growth of the service is explained from this model. This adjusted R-square of

0.481407 means that the model shows a fairly good fit, but there is still some potential to be realized.

With an estimated F-statistic of 2.100255, which is less than the critical value for I (0) at 10 percent of 2.2, one cannot reject the null hypothesis of no long-run relationship among the variables at this level. This therefore means that even as short-run dynamics might prevail, a robust long-run relationship has not been established yet.

This insignificance in the relation of FDI and service economic growth may imply that attracting foreign investment alone cannot stir growth in the service sector, and hence, other influences on growth must be considered by the policymakers.

The negative values of exports are indicative of the potentials for problems within the export sector that may be deterring economic growth of services. That would, therefore, mean the need for diversification strategies or improvement in competitiveness for the services exported.

In fact, the strong positive effect of lagged domestic savings on service economic growth pinpoints the need for inculcating the savings culture. Savings, once motivated, would bring about more investments and, therefore, growth in the service sector.

Therefore, given this fact, the multidimensional increase of growth in the services sector can be achieved in terms of attracting FDI, improvement in export strategies, and promotion in domestic savings.

Overall, while the analysis exposes some relationships among variables, results suggest that, actually policymakers should focus more on improving domestic savings and addressing challenges facing the export sector if they are to stimulate long-term growth of the service-based economy.

Table 12. ARDL Long Run Form and Bounds Test ARDL (1, 1, 2, 0, 2)

Conditional Error Correction Regression				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	19.73805	11.01413	1.792067	0.0836
SERVICEG (-1) *	-0.319348	0.196303	-1.626813	0.1146
FDI (-1)	0.367697	0.212970	1.726524	0.0949
EXPORT (-1)	-0.269856	0.149606	-1.803773	0.0817
DCPS**	-0.004348	0.057278	-0.075909	0.9400
GDSV (-1)	0.032014	0.125368	0.255359	0.8002
D(FDI)	0.036617	0.170264	0.215060	0.8312
D(EXPORT)	-0.219034	0.113978	-1.921721	0.0645
D (EXPORT (-1))	-0.318538	0.152397	-2.090190	0.0455
D(GDSV)	0.065777	0.137390	0.478759	0.6357
D (GDSV (-1))	0.492314	0.144565	3.405491	0.0020
* p-value incompatible with t-Bounds distribution.				
** Variable interpreted as Z = Z (-1) + D(Z).				
Levels Equation				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	1.151400	0.994635	1.157610	0.2565
EXPORT	-0.845022	0.588717	-1.435362	0.1619
DCPS	-0.013615	0.183237	-0.074303	0.9413
GDSV	0.100248	0.349139	0.287129	0.7761
C	61.80734	5.106365	12.10398	0.0000
EC = SERVICEG - (1.1514*FDI -0.8450*EXPORT -0.0136*DCPS + 0.1002 *GDSV + 61.8073)				
F-Bounds Test		Null Hypothesis: No levels relationship		
Test Statistic	Value	Signif.	I (0)	I (1)
			Asymptotic: n=1000	
F-statistic	2.100255	10%	2.2	3.09
K	4	5%	2.56	3.49
		2.5%	2.88	3.87
		1%	3.29	4.37

Whereas SERVICE: annual service growth as a share of GDP; FDI: foreign direct investment as a share of GDP; EXPORT: annual export growth as a share of GDP; DCPS: domestic credit provided to private sector as a share of GDP; GDSV: gross national saving as a share of GDP.

Source: Author's computation using EViews 13.

The different regression models that emerge from Table 12: ARDL Long Run Form and Bound Test give some useful results on how the service sector economic growth and FDI condition the variables of Exports, Domestic Credit, and Domestic Savings.

The coefficient is measured at -0.319348, the p-value being 0.1146, indicating that past economic growth is deterring from current growth, although this does not reach conventional levels of statistical significance.

Having the coefficient value of 0.367697 with a p-value of 0.0949, there indeed presents a positive relationship between past FDI and service economic growth, which approaches significance. This could, therefore, imply that the higher the magnitude of FDI in the previous period, the more it affects growth in the service sector.

The coefficient is estimated at -0.269856, with a p-value of 0.0817, reflecting a negative influence of past export on the current service sector's economic growth, close to being significant. What this suggests is that higher levels of past exports may not be good for current growth.

The coefficient is -0.004348 with a p-value of 0.9400, therefore, domestic credit insignificantly affects the service economic growth.

The coefficient of 0.032014 with the p-value of 0.8002 suggests no significant contribution from current domestic savings to growth.

The coefficient is 0.036617. Also, the p-value is 0.8312. That is to say, at a short run, altering FDI does not have a significant impact on services economic growth.

The present alteration in exports (D(EXPORT)) exhibits a coefficient of -0.219034 (p-value = 0.0645), which implies a detrimental effect on growth, whereas the lagged variation in exports

(D (EXPORT (-1))) demonstrates a coefficient of -0.318538 (p-value = 0.0455), signifying a statistically significant negative influence. This supports the notion that variations in exports can have an adverse impact on economic growth in the service sector.

The current difference of domestic savings, D(GDSV), insignificantly contributes, coefficient = 0.065777, p-value = 0.6357. On the other hand, D (GDSV (-1)) is a lagged difference presenting a considerable positive coefficient of 0.492314; p-value = 0.0020. This infers that at the previous period, increased domestic savings positively affect economic growth in the current period.

The equation of levels shows that FDI has a coefficient of 1.151400 with a p-value of 0.2565 which apparently negates the contribution of FDI in the long-run growth of service economies. Also, both export and domestic credit is insignificant in the long run for growth.

F-Bounds Test

The F-statistic of 2.100255 is less than the critical value for I (0) at 10% significance level (2.2). That suggests we cannot reject, at this level, the null hypothesis of no long-run relationship between the variables. This, in essence, means there could be some short-run dynamics, but the long-run relationship is not strongly established.

Results reveal that FDI does not significantly influence service economic growth in the long run and, therefore, the mere attraction of foreign investment into the country could not be a source of growth in the service sector.

The presence of negative coefficients associated with exports, especially regarding the lagged effects, suggests that previous export performance may impede current economic growth. This may reflect underlying structural challenges within the export sector that require attention.

The strong positive effect of previous domestic savings on service economy growth insinuates that there is a need to nurture the saving culture. Savings, once induced, translate into more investments, hence causing spiral growth upwards in the service sector.

These findings are thus indicative of service economic growth in being the endogenous product of multifarious approaches, ranging from attracting FDI to export strategy to promoting domestic savings.

That is, while the analysis has revealed some relationships between the variables, the results indicate that from the perspective of sustainable development of the service economy, the policymakers should direct their attention to improving domestic savings and addressing the problems facing the export sector.

CHAPTER FIVE

5. CONCLUSIONS AND RECOMMENDATIONS

5.1. Conclusions

FDI has generally been regarded as a potential catalyst in economic development. The impact of FDI on the ranks of economic growth remains ambiguous. While some studies highlight the positive impact of FDI on the economy, other studies suggest that such impacts are not always significant. Moreover, with respect to Comoros, there is a limit to the research concerning the relationship of FDI to economic growth.

This paper attempts to establish the relationship between FDI and economic growth in Comoros between 1981 and 2022. Additionally, the paper analyzes the impact FDI has on the economic growth of sectors within Comoros. The paper also performs tests for the stationarity and cointegration of the variables. In fact, the result of the test shows the suitability of the models in the ARDL long-run bounds test. Results from the ARDL confirm this long-run relationship existing among the variables affecting economic growth despite the fact that their respective individual variables do not have a significant effect in the levels equation. This effect is the same for both agricultural and manufacturing and service sector economic growth in Comoros. Whereas other variables such as FDI, exports, credit to the private sector, and savings have no significant effect on the economic growth of Comoros. The error correction model underlies the long run interdependencies among the variables. Moreover, it brings out the fact that the short-run fluctuation tended to modify itself towards its equilibrium adjustment.

The findings highlight exports as a clear determinant for agricultural economic development, but at the same time reveal potential obstacles in using domestic savings to achieve swift agricultural growth. The results also emphasize the important roles of exports, domestic credit, and past accumulated domestic savings in increasing agricultural growth. However, inefficiencies in the direct use of savings in the immediate term, combined with mean reversion in agricultural growth, suggest the direction for policy intervention in pursuit of long-term sustainable growth.

It also means that one important contribution of export to manufacturing economic growth, while growth one-period lagged can be indicative of a mean-reverting pattern. However, FDI,

domestic credit, and domestic savings are insignificant in contributing to their direct influence on manufacturing growth in this model.

The results expose some of the nuanced nature of service economic growth. FDI and current domestic savings do not have a significant short-run effect, while past domestic savings become crucial for growth. Exports, on the contrary, negatively influence service sector growth and thus reflect some possible structural problems either with export dependence or market dynamics.

The results are indicative that the growth of the service sector depends more on past economic conditions rather than the present one, and among these, lagged domestic savings is the most important growth-enhancing factor. FDI has the potential for positive impact, though it is statistically weak. Exports, current as well as lagged, exert a negative impact on growth, signaling thereby the potential structural problems in export orientation or inefficiency. Scantly observed significant impacts of domestic credit indicate that there is some misalignment in financial resources along sectoral needs.

5.2. Recommendations

Based on the findings of this research to be conducted on the relationship between FDI and economic growth in Comoros, this study highlights various policy recommendations that can be drawn to enhance the effectiveness of FDI in fostering economic growth in various ways.

- Improved Institutional Frameworks: Improve governance and institutional quality by creating a proper environment for FDI with higher levels of transparency and minimal bureaucratic hurdles, together with adherence to the rule of law in attracting foreign investors.
- Diversification of the Economy: Design policies and strategies that can help in diversifying the economy against export dependence. This could include promoting tourism and fisheries, which hold great potential for growth and thereby generating employment.
- Enhance export competitiveness: Addressing the export side of structural issues, such as infrastructure investment in order to improve logistics, enhancing the quality of products, and training exporters to reach the required international standards of quality.
- Encourage National Savings: There is a need for policy that will encourage domestic savings through tax incentives for saving accounts, and initiation of financial literacy programs. Increased domestic savings can be a capital base for investment, especially in the agriculture sector, which has indicated the highest growth potential.
- Historical Economic Contexts: Historical contexts shape the current growth trajectories of countries, particularly in the service sectors. Modern policies should seek to consolidate historical comparative advantages and overcome the failures and weaknesses that characterized earlier performance.
- It requires coordination in the financial inputs with the special requirements of different sectors. It may involve a Special Credit Programme in agriculture, industry, and services, all integrated to achieve the purpose of proper utilization of funds.
- Encourage Sustainable Practices: Promote sustainable practices in sectors like agriculture and fisheries to ensure long-term viability and growth. This includes investing in renewable energy and sustainable resource management to enhance productivity and resilience against climate change.

- Nurture Public-Private Partnerships: This will go a long way in leveraging private sector expertise and investment in public projects, especially in infrastructure development, upon which the country relies to facilitate economic growth and attract FDI.

These suggestions, will help Comoros make its environment more appealing to FDI, ensure economic growth, and ameliorate the various challenges pointed out by this study.

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Appendix

Year	GDP	AGRI	SERVICE	MANFU	FDI	DCPS	Export	GDSV
1981	0.897	29.375	54.534	8.431	0.000	5.864	8.835	-0.043
1982	3.604	29.377	54.535	7.492	0.082	6.161	8.836	-0.041
1983	2.148	29.376	54.534	6.332	0.000	7.872	8.836	-0.042
1984	1.398	29.376	54.534	4.775	0.000	3.879	8.836	-0.042
1985	-0.439	29.376	54.534	5.518	0.000	4.139	8.837	-0.043
1986	-0.881	29.376	54.535	4.851	0.000	4.686	8.836	-0.042
1987	-1.133	29.377	54.535	5.624	2.236	6.460	8.836	-0.042
1988	-0.127	29.376	54.535	9.645	1.057	5.820	8.836	-0.043
1989	-5.837	29.376	54.534	8.653	0.957	7.770	8.837	-0.043
1990	2.279	29.376	54.534	8.637	0.091	8.153	8.836	-0.042
1991	-7.782	29.377	54.535	6.861	0.591	8.332	8.836	-0.043
1992	5.964	29.377	54.535	8.346	-0.316	6.939	8.837	-0.043
1993	0.710	29.376	54.535	8.937	0.042	6.527	8.836	-0.043
1994	-7.309	29.376	54.535	7.895	0.056	6.385	8.836	-0.043
1995	1.408	29.376	54.534	7.986	0.223	4.469	8.836	-0.042
1996	-3.394	29.376	54.534	7.757	0.129	5.302	8.836	-0.043
1997	1.817	29.376	54.534	8.133	0.005	4.278	8.836	-0.043
1998	-0.862	29.376	54.534	6.702	0.104	4.897	8.836	-0.042
1999	-0.105	29.376	54.534	5.458	0.071	5.103	8.836	-0.042
2000	8.718	29.376	54.534	6.956	0.027	4.241	8.836	-0.042
2001	0.281	29.376	54.535	5.465	0.303	4.503	8.836	-0.042

2002	0.256	29.376	54.535	3.477	0.101	5.073	8.836	-0.042
2003	0.119	29.376	54.535	4.511	0.145	4.092	8.836	-0.042
2004	-0.014	29.376	54.534	5.321	0.106	5.175	8.836	-0.042
2005	0.837	29.376	54.535	6.024	0.085	4.914	8.836	-0.043
2006	0.614	29.376	54.534	4.980	0.111	5.350	8.836	-0.043
2007	-1.200	28.957	54.299	6.414	0.967	6.353	8.975	1.682
2008	1.888	29.139	55.784	6.195	0.508	8.783	8.221	-0.527
2009	1.148	30.033	53.520	6.469	1.529	10.478	9.312	-1.282
2010	1.637	30.416	53.190	5.596	0.920	10.628	9.639	-2.097
2011	1.960	30.564	53.602	6.777	2.260	12.089	9.956	-4.067
2012	0.986	30.173	54.042	5.312	1.021	12.805	8.946	-6.767
2013	2.250	30.790	53.056	5.242	0.379	13.629	9.048	-4.790
2014	-0.068	30.011	53.780	4.257	0.407	15.822	9.676	-4.680
2015	-1.014	30.599	54.900	5.921	0.511	16.143	10.136	-3.895
2016	1.103	31.368	54.174	6.060	0.352	16.459	10.673	-3.226
2017	1.712	31.899	54.199	8.368	0.364	15.775	11.901	-2.928
2018	1.687	33.720	52.650	11.467	0.477	15.488	12.909	-2.310
2019	-0.127	35.620	51.887	12.376	0.360	14.986	12.773	-3.986
2020	-2.075	35.797	51.446	9.207	0.316	16.087	5.672	-10.585
2021	0.191	35.512	50.933	9.569	0.311	16.787	10.807	-7.130
2022	0.534	36.412	50.247	12.853	0.309	17.988	12.716	-9.388