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IMPACT OF FOREIGN DIRECT INVESTMENT (FDI) ON MANUFACTURING SECTOR PERFOMANCE IN ZIMBABWE (1980-2022)

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The undersigned certify that they have supervised, read and recommend to the Bindura University of Science Education for acceptance a research project entitled: Impact of Foreign Direct Investment on manufacturing sector performance in Zimbabwe (1980- 2022), submitted by **B200906B** in partial fulfilment of the requirements for the Bachelor of Science (Honours) Degree in Economics.

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DEDICATION

This dissertation paper is dedicated to my family members. I'm grateful for your love, support, and understanding, family members. Not to mention your steadfast and amazing support, I am humbled by your faith in me. Without the love, favor, and blessings of Almighty God, who has kept me going well beyond my boundaries and expectations, this study would not have been possible.

ABSTRACT

This study looked at how Zimbabwe's manufacturing industry performed in terms of foreign direct investment between 1980 and 2022. The rise in manufacturing production was the dependent variable in this time series analysis, whereas the independent variables were foreign direct investment, exports, exchange rates, inflation, and external debt. Theories and authors of relevant studies on foreign direct investment and explanatory factors were included in the literature review. The process began with related material and was based on the linear logarithmic Cobb- Douglas production function. The ordinary least square (OLS) method was used to analyze the manufacturing industry and foreign direct investment. With the exception of the manufacturing index volume, which was used to measure the performance of the manufacturing sector, exports, foreign debt, foreign direct investment, currency rates, and inflation were all linearized. A robust and positive association between foreign direct investment and the manufacturing sector was found through data analysis utilizing the E-views statistical tool. Given the study's finding that FDI and manufacturing are positively correlated, Zimbabwean policymakers are urged to give foreign investors greater consideration by creating an atmosphere that attracts capital inflows and by upholding consistent, investor-friendly regulations. The government should take into account supply-side measures to increase capacity utilization in addition to searching for substitute trade policies for Look East Policy.

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CHAPTER I

INTRODUCTION

1.0 Introduction

According to Mlambo, (2017), Zimbabwe's manufacturing industry has been experiencing a decline in output, which has had a significant impact on the nation's economic performance. The sector is in charge of the majority of the nation's output, export revenue, employment stability, and the addition of value to items through secondary processing. It is a wide industry that plays a significant part in how any economy's GDP is transformed. According to Rahman and Siddike (2021), they proposed foreign direct investment, boosts output by providing capital and funding. This study will investigate the factors influencing foreign direct investment in the country and analyse the consequences of changes in FDI on the manufacturing sector. It will specifically focus on the influence of FDI on the performance of the manufacturing sector in Zimbabwe from 1980 to 2022. The introduction, study background, problem statement, research objectives, research question, assumptions, significance of the study, definition of words, and conclusion are all summarized in this chapter.

1.1 Background study

According to Tinarwo (2021), members of the Southern Africa Development Community (SADC) assigned Zimbabwe the task of ensuring food security and food provision after the country was designated as Africa's breadbasket after the year 2000. With an agro-based economy and an efficient, fully operational manufacturing sector, it was able to supply both the domestic and global markets. In the past, the manufacturing industry employed lots of workers and contributed significantly to both GDP and foreign exchange (Muzurura, 2019). By exporting completed items to domestic and foreign markets, things including consumer goods, steel, iron, and other semi-finished agricultural products are produced.

According to Doytch and Uctum (2019), the problem of foreign direct investments is becoming increasingly significant on a national and worldwide scale. Several empirical research on the correlation between foreign direct investment (FDI) and economic development have led to the conclusion that FDI's effects are multifaceted. Macro economically speaking, FDI is frequently seen as a source of jobs, high productivity, competitiveness, and technology spillovers, according to Sarker (2022). For the less developed nations, foreign direct investment (FDI) translates into increased GDP, exports, and access to global markets and currencies. It also serves as a significant source of funding, taking the place of bank loans.

According to Mugauri (2019), FDI has been falling in Zimbabwe since 1980, despite the fact that the developing country needs significant FDI inflows to supplement its own resources. The bureaucratic procedures required in establishing the investment plans and the nation's restrictive and protective economic policies, which it adopted after gaining independence in 1980, could have contributed to this fall or failure to draw in new investment. Darvas and Wolff (2021) asserts that the investment policies followed did not support the overall investment climate. Foreign capital accounted for almost 70% of the entire capital stock, and foreign capital inflows were dominated by FDI, according to Ngwenya (2019).

Zimbabwe's foreign direct investment (FDI) was anticipated to have reached US$400 million by 2009 and US$123 million by 2010, as per the Ministry of Finance Budget Statement (2014). According to Moyo (2013), Zimbabwe saw approximately Z$444 million in foreign direct investment (FDI) in 1998, but by 2001, FDI inflow had dropped to Z$5.4 million. A comparable decrease in foreign portfolio investment had also occurred, according to UNCTAD (2000). This can be seen in the change in the country's capital account balance, which went from a GDP surplus of 7.1% in the year 1995 to a 6.5% in 2002. According to Mashakada (2013), the nation saw macroeconomic imbalances, weak growth, inflation, political instability, and a BOP deficit between 2000 and 2008. These and other issues were linked to Zimbabwe's ejection from the IMF, and significant credit lines were cut. This substantially impacted FDI inflows negatively and contributed to nation's high unemployment rate of over eighty percent in the year 2005, political unrest, and a low growth rate of about 12.6% back in 2008.

The World Bank (2018), reported that inflows of FDI into Zimbabwe were constrained by a concoction of interconnected fundamental risks, such as expropriation of foreign investor property, domestic content requirements, allocate and distributive inefficiencies, currency transfer and convertibility restrictions, issues of governance, unenforceability of contractual agreements, lack of transparency in dealing with public agencies, and corruption. From 2009 to 2018, the economy experienced some degree of stability due to dollarization. However, since the nation's independence, foreign direct investment (FDI) inflows have contributed relatively little to the economy because of exogenous and endogenous factors. These factors include high levels of political and macroeconomic uncertainty, increased global capital market volatility, low export commodity prices, a decline in regional trade flows, rising exchange rate volatility, and declining exporting firms' productivity.

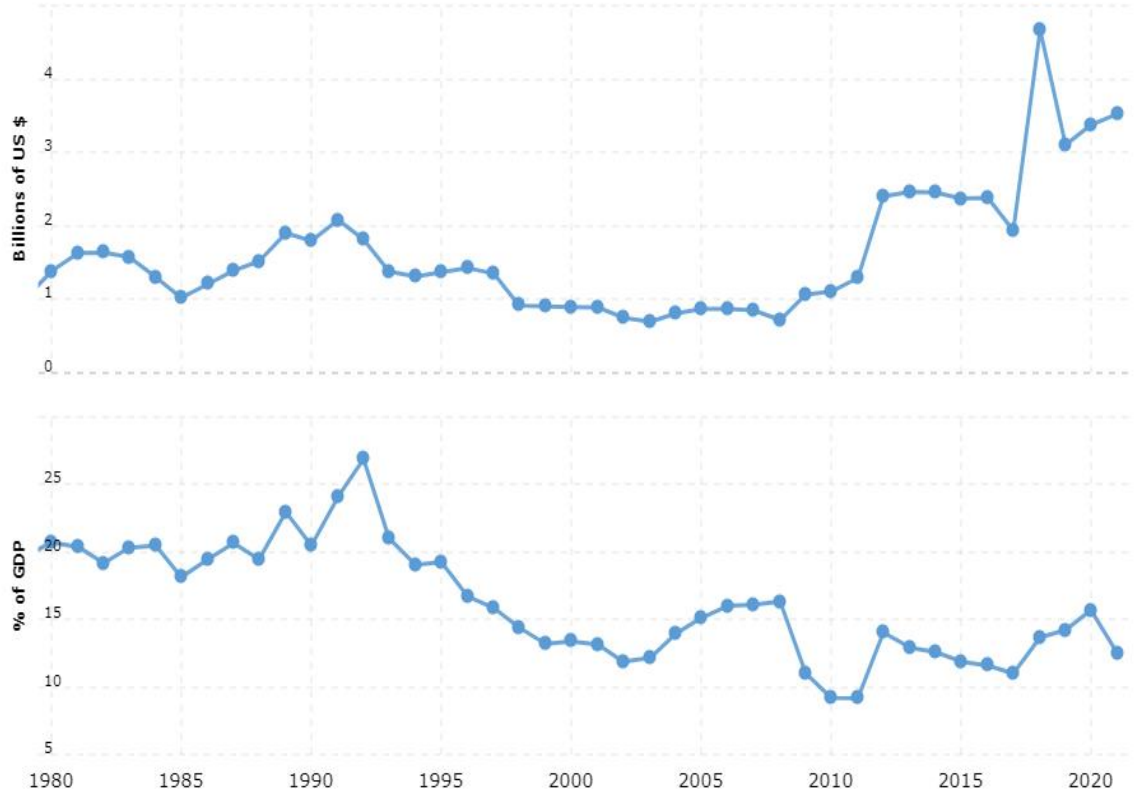
According to CZI Manufacturing Sector Survey 2018, manufacturing sector capacity utilization declined to 10% back in 2008 and rose to 57% in 2011 following an introduction of multicurrency system in Zimbabwe. It then fluctuated, dropping to 34.3% in 2015, later rising to 47.4% in 2016 before registering a drop to 45.1% in 2017. According to Kuhn (2019), average capacity utilization for the period between September 2017 and August 2018 rose by 3.1 percentage points from 45.1% in 2017 to 48.2% in 2018 as shown in fig.1 below. Potential existed for Zimbabwe to increase manufacturing sector capacity utilization to a 70% or more by the year 2023. This of cause possible if structural and economic challenges affecting the sector were addressed.

Figure 1: manufacturing industry capacity utilization (2011-2018).

According to Ernske (2020), the anticipated function of FDI was misunderstood, deeply rooted in Zimbabwe's post-independence political strategy and ideology prior to the 2017 soft military coup. Mugabe's administration was well aware that increased foreign direct investment (FDI) would

probably raise questions about political corruption and human rights violations (Kuveya, 2019). Also, there was concern that a rise in the number of financially stable foreign firms entering the nation's secondary economic sectors may have undesirable consequences, such driving out native companies as a result of increased foreign competition. According to Lupton, Behnam and Jimenez, (2021), policymakers widely agreed that resource-seeking behaviour on the part of foreign investors would accelerate environmental degradation and the ensuing shortage of natural resources if new foreign companies entered the primary sector.

Figure 2: Zimbabwe's manufacturing sector performance as a % of annual GDP.



The manufacturing industry is essential to the economy of Zimbabwe. Its share of GDP decreased to 7.1% in the year 2022 from 20.73% back in 1980. It has been slightly above 10% for the past few years following dollarization (Bitar, 2021). The manufacturing sector used to generate roughly 42% of export earnings at its height, but as of 2010, its share of the GDP was about 10% and its share of export earnings was 27%. Owing to significant part to the nation's deindustrialization, employment in the manufacturing sector has also decreased, from 206 000 in 1991 to roughly 127 300 in 2022 (Munyikwa, 2019).

1.2 Problem Statement

In spite of Zimbabwe's attempts to draw in FDI and boost economic expansion, the nation's manufacturing industry has underperformed. Factors such as a persistent trade deficit, where imports far outpace exports, high unemployment, job losses in the manufacturing sector despite FDI inflows, and limited technological innovation and upgrading in the sector have all contributed to this underperformance. Manufacturing's share of the GDP declined from 25% in 1980 to 10% in 2020. The manufacturing sector's subpar performance has hampered Zimbabwe's economic growth, prolonged poverty, and damaged the nation's standing in both regional and international trade. Consequently, the purpose of this study is to examine how Foreign Direct Investment affected Zimbabwe's manufacturing sector's performance from 1980 to 2022. The goal is to pinpoint the opportunities and underlying issues that can guide successful policy interventions and sector-revival tactics. This problem statement highlights Zimbabwe's manufacturing sector's poor performance in spite of attempts to attract foreign direct investment (FDI), highlighting the need for further research to understand the connection between FDI and sector performance and to identify solutions for the sector's issues.

1.3 Objectives of the study.

- To investigate the effects of foreign direct investment on Zimbabwe's manufacturing industry.
- To look into the reasons behind the manufacturing sector's decreased capacity utilization.
- To examine the role of government policies and institutional factors in attracting and retaining FDI in the manufacturing sector.
- To identify challenges and opportunities faced by foreign investors in Zimbabwe's manufacturing sector.

1.4 Research questions

- What connection exists between the industrial sector and foreign direct investment?
- What effects does FDI have on the manufacturing sector, and how much?
- What impact do FDI adjustments have on the manufacturing sector?
- What elements influence foreign direct investment in Zimbabwe?

1.5 Hypothesis

H0: Zimbabwe's manufacturing industry benefits from foreign direct investment.
H1: Zimbabwe's manufacturing sector is negatively impacted by foreign direct investment.

1.6 Justification of the Study

The majority of FDI research done in the African setting has focused on macroeconomic variables and the causes of inflows of foreign direct investment into developing countries. Taylor (2020) asserts that the empirical research is unclear about the connection between foreign direct investment and expansion of the manufacturing sector in developing countries. In particular, despite substantial FDI inflows into the industry, no research on the topic has been done in the context of the Zimbabwean economy. This adds to the study's intrigue.

Although slightly different from other studies in that it focuses on Zimbabwe's manufacturing sector performance rather than those of other developing countries, such as Nigeria, this research will contribute to the body of information on the subject. Many developing countries, like Zimbabwe, are experiencing or have had an external debt overhang. For this reason, the study's examination of external debt as one of the variables is noteworthy. However, this research will contribute to the field by providing up-to-date empirical evidence in favor of the FDI-led growth theory in the manufacturing industry.

Moreover, the research's findings can be a vital resource for creating new FDI policy agendas in Zimbabwe and other countries with similar characteristics. Given the FDI information covered above, it makes sense to look into how FDI impacts Zimbabwe's manufacturing sector's performance.

1.7 Assumptions

FDI data and information to be collected will be deemed valid and reliable.

Data from manufacturing companies for the years 1980–2022 is easily obtainable.

The volume of manufacturing index will be used to gauge the manufacturing sector.

FDI is not the only factor influencing the manufacturing sector's production.

1.8 Significance of the study

1.8.1 To the government

It's possible that the government knows how much FDI is required to boost the manufacturing sector's performances in order to achieve macro-objectives like job creation, economic development, lower inflation rates from lower import inflation, and favorable balance of payments. Also, the government may utilize the findings to modify current policies like indigenization and the economic enabling of surrendering a 0.51 to locals and 0.49 to foreigners and to create new ones that draw in international investment. In order to boost capital inflow and capacity utilization in the nation, both of which advance economic growth and technological advancement, the government should cultivate a welcoming investment environment.

1.8.2 To the researcher

The study could be beneficial to the student's career, especially at the upper stages of the project when it can be used by others to demonstrate the scholar's capacity for creative problem-solving, assertiveness, knowledge, and persistence. Ideally, the researcher may use the report to persuade society to look for ways to direct resources toward the manufacturing sector. Many years later, a job change or a small change in career path may occasionally present an opportunity to apply the knowledge and abilities acquired during the research. The research may be able to reconcile business and education.

1.8.3 To other students

Students guided by this dissertation will be able to improved their capacity to conduct additional research on related factors and topics. Additionally, the study will assist the student in evaluating the applicability of the theory they have learned in college and creating connections between it and real-world situations. Through practical application, students will apply the theories they learn in class, such as methodology and literature review, to real-world situations.

1.8.4 To University

The university will make the literature reviews available to staff members and other students who might want to do study on the significance of foreign direct investment in the manufacturing sector in future. If the university is interested in the patterns of foreign investment and the manufacturing sector, then it will be easier for lecturers and other students to conduct study since they will have the resources to delve deeper into the already conducted research. Many people at various Universities could benefit from the study if it were shared with other Universities.

1.8.5 To the Policy makers

Policy makers, particularly those in the Ministry of Industry and Commerce and the Zimbabwe Investment Authority (ZIA), may find the research useful as some of the recommendations and findings may be incorporated into national policies that are critical to the manufacturing sector, which is a vital component of the economy. Policy makers may find the report very helpful in reviving the manufacturing sector, which is dropping off. The report might potentially be used to revive the economy by implementing better regulations that would draw in the much-needed foreign direct investment.

1.8.6 To the Manufacturing Sector

In addition to helping to determine how much foreign capital required to boost the industry and return to its pre-crisis situation, the study could be used by the manufacturing sector of Zimbabwe to address issues like production bottlenecks and liquidity. With the nation's goal of revitalizing the manufacturing sector, the study could be used in policy making so as to meet the nation’s objectives easily with readily available information.

1.9 Limitations

Biased results could arise from different currencies being utilized during the study period. To get around this limitation, the student will change the values of the Zimbabwean dollars to US dollar (USD) currency, using exchange rates. The authorities considered certain pertinent material to be secret. To get above this restriction, though, the researcher made clear the significance of the study and gave the authorities assurances that the private information would never be shared. To enhance the accuracy and reliability of the data, the researcher carefully reviewed a range of data published from different institutions, such as ZIMSTAT, World Bank, Reserve Bank of Zimbabwe (RBZ).

1.10 Delimitations of the study

The purpose for this study is to examine the effects of FDI on the manufacturing sector, which is a very large sector divided into light and heavy industries. Producing over 6000 range of products. The research will be done in Zimbabwe for a period from 1980 to 2022, and the necessary information and data will be gathered from official, registered, and trustworthy sources in Zimbabwe, including the Zimbabwe Investment Authority (ZIA), government publications, books, and journals, as well as the Zimbabwe National Statistics Agency (ZIMSTAT).

1.11 Definition of terms

Economic growth – Economic growth refers to the increase in the total value of goods and services produced within an economy over a specific period of time (Stern, 2019). It is commonly measured by the growth rate of the Gross Domestic Product (GDP), which is the monetary value of all final goods and services produced within a country's borders (Adeyinka, 2023).

FDI – stands for Foreign Direct Investment. It refers to the investment made by individuals, companies, or organizations from one country into another country with the intention of establishing a lasting interest or controlling stake in a business enterprise (Meyer and Nguyen, 2020). FDI involves the acquisition of assets, such as establishing subsidiaries or acquiring shares in existing companies, in a foreign country (Jaiblai and Shenai, 2019). These investments can take various forms, including equity investments, reinvested earnings, and intra-company loans.

Capacity utilization – Capacity utilization refers to the extent to which a company or an economy is utilizing its production capacity (Varadarajan, 2020). According to Burgos and Ivanov (2021), capacity utilization is a measure that indicates the percentage of total available production capacity being used to produce goods or services at a given point in time.

Manufacturing's value-add – refers to the economic value generated by the manufacturing sector through the production of goods (Pereira, Kennedy and Potgieter, 2019). It is a measure that captures the additional value created during the manufacturing process, beyond the cost of raw materials and other inputs (Pinero, Bruckner and Wieland, 2019).

CZI - stands for the Confederation of Zimbabwe Industries. It is an organization that represents the interests of the manufacturing and industrial sectors in Zimbabwe (Matsongoni and Mutambara, 2021). According to Ndakaripa (2020), the CZI serves as a platform for

collaboration, advocacy, and policy engagement to promote the growth and development of the manufacturing industry in the country.

1.12 Conclusion

The researcher included an introduction, the study's background, a statement of the problem that prompted the investigation, the study's goals, research questions, assumptions, and hypotheses, as well as delimitations, limitations, and definitions of words in this chapter.

CHAPTER II

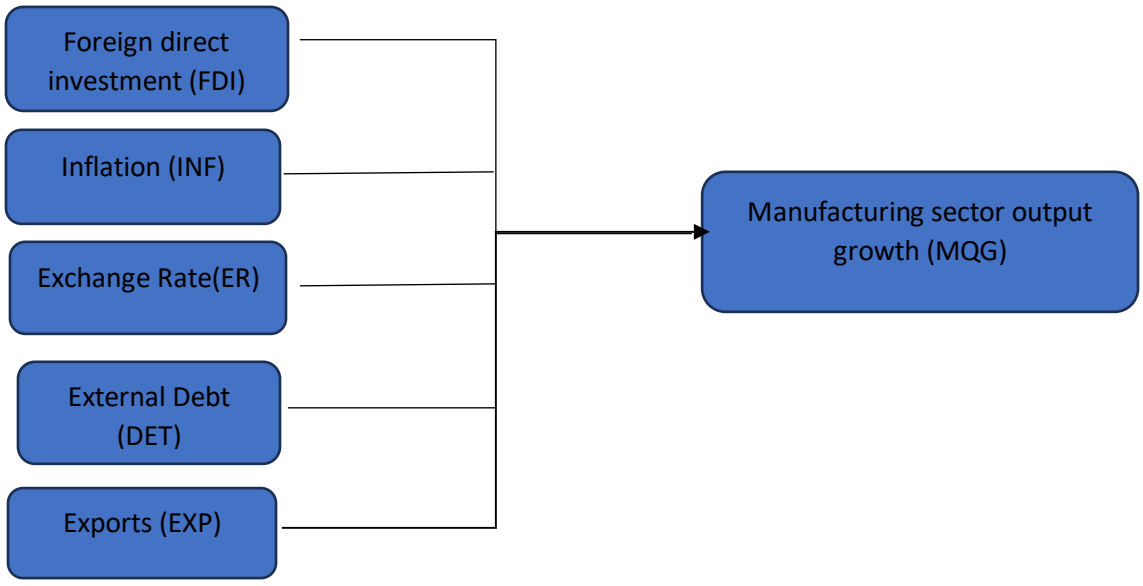
LITERATURE REVIEW

2.0 Introduction

Reviewing previous research on the impact of FDI on the manufacturing sector in Zimbabwe and other countries, this chapter also examines additional relevant literature. The definition of literature, according to Myers (2019), is an overview of what has been written about a subject by recognized academics or researchers and includes both descriptive and factual data. The initial search that helps in the creation and improvement of research ideas was one of the many justifications he gave for performing a literature review. A literature review, he adds, enables one to critically assess the body of literature and pinpoint knowledge gaps.

2.1 Conceptual framework.

Figure 3: **Independent Variable** **Dependent Variable**



Equation: $MQG = \beta_0 + \beta_1 FDI + \beta_2 INF + \beta_3 ER + \beta_4 DET + \beta_5 EXP + \varepsilon$

Where:

- β_0 is the intercept
- β_1-β_5 are the coefficients of the independent variables or estimation parameters.
- ε being an error term

The regression model is expected to capture the study's objectives that is determining the impact of Foreign Direct Investment on Zimbabwe's manufacturing sector performance and explore effects of inflation, exchange rate, debt and exports on the sector's performance in Zimbabwe. The coefficients (β1-β5) will be estimated using data from the World Bank database and other sources and the significance of each variable will be tested using appropriate statistical tests.

2.2 Theoretical literature

The theoretical backbone of this study is based upon the Internalization theory, Global Value Chains (GVC) theory, Eclectic Paradigm (OLI Framework) theory and Market seeking and Resource seeking theory.

2.2.1 The internalization Theory

The Internalization Theory, developed by Peter Buckley and Mark Casson (1976), posits that firms expand internationally to internalize markets for intermediate goods and services, rather than relying on external markets. According to Strange and Humphrey (2019), this theory explains why firms engage in Foreign Direct Investment (FDI). By putting the theory to use, they want to learn more about why businesses decide to rely less on market-based transactions and more on internalizing certain operations through foreign direct investment (FDI).

According to the internalization theory, businesses might internalize certain benefits they have through foreign direct investment. These benefits may consist of exclusive technology, specialist knowledge, economies of scale and so on. The choice to participate in foreign direct investment is influenced by these firm-specific advantages, which also contribute to the competitive advantages that firms have in overseas markets (Resmini, 2019). When deciding whether to internalize operations through foreign direct investment, transaction costs are a major consideration. They investigate the possibility that internalizing transactions can result in transaction costs that are lower than those associated with setting up and running overseas subsidiaries.

A firm's decision to participate in foreign direct investment can be strongly influenced by the institutional environment of the host nation. There has been analysis of the ways in which corporations' motivations for internalization are influenced by political stability, legal systems, regulatory frameworks, intellectual property protection, and government policies. Resmini (2019) examines how companies manage institutional disparities and look for conducive settings to safeguard their resources and business activities.

Gains from foreign direct investment (FDI) and non-FDI means of expansion are compared in order to evaluate the internalization theory of FDI. Because there is less chance of knowledge monopolies spreading when businesses expand using FD1 modes, internalization theory proponents contend that these are preferable. Nonetheless, detractors contend that non-FDI expansion strategies are better because to the high decentralized agency costs connected to FDI strategies. This compares the benefits of FDI and non-FDI expansion strategies, which helps to clarify the topic a little bit. The findings indicate that, in comparison to FDI expansion strategies like joint ventures, acquisitions, and subsidiaries, anomalous returns to shareholders are substantially higher when businesses expand using non-FDI strategies like sales, contracts, and licensing.

The internalization theory explains why foreign firms would want to invest in Zimbabwe's manufacturing sector, seeking to internalize markets, reduce transaction costs, and maintain control over operations. The theory also suggests that market imperfections in Zimbabwe's economy drive foreign firms to internalize markets, hence contributing to FDI in the manufacturing sector.

2.2.2 Global Value Chains (GVCs) Theory

The term "global value chain" (GVC) describes the internationally distributed stages of manufacturing that are spread out over several nations. In order to comprehend how global production is organized and how foreign direct investment functions in the manufacturing sector, GVCs have grown to be an important framework. In order to investigate how foreign direct investment (FDI) affects a country or firm's participation in a global manufacturing network and the consequences for economic development, competitiveness, and policy, Resmini (2019) employed the GVCs theory.

The research looks at how FDI helps GVCs upgrade, especially when it comes to manufacturing sectors. Analysing how foreign direct investment (FDI) helps local businesses advance up the value chain by transferring technology, knowledge, and management techniques to them can be one way to do this (Resmini, 2019). Assessing the variables that influence whether foreign direct investment (FDI) results in upgrading or sustains lower value-added activities is also helpful (Osei, 2019). The analysis of governance frameworks in global manufacturing networks is made possible by the GVCs hypothesis. Additionally, it looks into how FDI affects the lead businesses' position, the methods used for coordination, and the power relationships between suppliers and purchasers in GVC governance. This may clarify how FDI affects how benefits and risks are distributed inside GVCs.

The theory also looks at how connected is manufacturing, FDI, and regional integration in GVCs. Examining how regional trade agreements and economic blocs affect the formation of regional production networks, the location decisions of multinational enterprises (MNEs) within GVCs, and the consequences for regional economic integration and development can be some of the tasks involved in this (Carril-Caccia and Pavlova, 2018).

The GVCs paradigm offers a prism through which to examine the aspects of FDI in manufacturing sustainability. The Global Chain Value examines how resource consumption, pollution, labour standards, and social upgrading are among the issues that the effects of FDI on environmental and social sustainability within GVCs. In the context of FDI in manufacturing, this can help guide policy discussions on sustainable development and ethical business practices.

The theory explains how Zimbabwe's manufacturing sector can integrate into global value chains, attracting FDI and improving exports. It highlights the importance of government policies promoting GVC participation also upgrading, relevant to the study’s objective of examining government policies and institutional factors. GVCs theory explains how FDI can lead to technology transfer and upgrading in the manufacturing sector, contributing to industrial development. It identifies challenges and opportunities faced by firms in GVCs, relevant to the study’s objective of identifying challenges and opportunities faced by foreign investors in Zimbabwe's manufacturing sector.

2.2.3 Eclectic Paradigm (OLI Framework) theory

The ownership, location and internalization (OLI) Framework, often referred to as the Eclectic Paradigm, is a theoretical construct devised by John Dunning in 1979, with the aim of elucidating the patterns and incentives behind foreign direct investment. This theory clarifies why firms are involved in foreign direct investment and their benefits from it. The OLI Framework consists of three components that help firms decide whether to invest in foreign markets and how to structure their international operations

A company's particular advantages or assets, such as its technological know-how, brand reputation, management skill, or access to special resources, are referred to as ownership advantages. FDI in manufacturing; the analysis of how ownership advantages influence firms' FDI decisions, with a focus on manufacturing capabilities, proprietary technologies, and firm-specific resources that give them a competitive edge in the global market (Coveri and Zanfei, 2023).

The features of a host nation that draw FDI are referred to as location benefits. Cantwell (2016) investigated how corporations choose which countries to engage in manufacturing operations by taking into account various geographical characteristics, including market size, labour costs, infrastructure, raw material accessibility, customer proximity, and institutional settings. They look into how ownership advantages and location advantages interact to influence manufacturing FDI site decisions (Virtanen, 2020).

When businesses internalize certain activities through foreign direct investment (FDI) instead of depending solely on market-based transactions, they reap advantages known as internalization advantages. The impact of internalization benefits on a company's decision to set up and run a manufacturing subsidiary overseas, including lower transaction costs, control over proprietary technologies, access to specialized inputs, and intellectual property protection, has been studied in relation to FDI in the manufacturing sector (Peter, 2019).

The most common approach in empirical research on FDI in manufacturing is the Eclectic Paradigm. Researchers have used the Eclectic Paradigm as a framework to examine the causes and effects of manufacturing FDI through a variety of methods, such as case studies, comparative analysis, and econometric research. Our knowledge of the incentives, site decisions, and performance consequences of manufacturing foreign direct investment (FDI) across various industries and nations has improved as a result of these research.

The theory explains why firms may engage in FDI in Zimbabwe's manufacturing sector and how they can benefit from it. It highlights the importance of government policies and institutional factors in attracting and retaining FDI in the manufacturing sector. The theory explains how FDI can lead to technology transfer and upgrading in the manufacturing sector, contributing to industrial development. It also identifies challenges and opportunities faced by firms investing in Zimbabwe's manufacturing sector.

2.2.4 Market-Seeking and Resource-Seeking theory

According to the Market-Seeking and Resource-Seeking theory, FDI in manufacturing is driven by companies' ambitions to obtain strategic resources or break into new markets. This theory acknowledges that companies participate in foreign direct investment (FDI) to increase their market share and/or acquire essential resources or assets that are vital to their industrial processes.

According to Duangjun (2021), investments made by businesses to enter new markets or increase their clientele are referred to as "market-seeking" foreign direct investment (FDI). Researchers have looked at how FDI in the manufacturing helps businesses to increase their local presence, avoid trade obstacles, and reach overseas consumer markets. They investigate what motivates foreign direct investment (FDI) in the market, including market size, growth potential, customer preferences, and market access requirements.

Obtaining Resources In order to get strategic resources, such as energy, raw materials, technology, or specialized inputs, businesses make investments known as foreign direct investment, or FDI. Scholars have looked into how FDI helps businesses in the manufacturing sector obtain vital resources that are either expensive or rare in their home nations. They look at how resource-seeking FDI might strengthen supply chains, lower production costs, increase firms' competitiveness, or give them control over important inputs (Park and Roh, 2019).

The Market-Seeking and Resource-Seeking theory examines how geography affects how businesses decide whether to invest foreign direct investment in the manufacturing sector. Researchers have looked into how market-related variables affect businesses' market-seeking investments. These variables include the size of the consumer market, income levels, consumer preferences, and competitive dynamics (Li and Srinivasan, 2019). Comparably, they look at how

firms' resource-seeking investments are affected by resource-related characteristics such the availability of natural resources, skilled labour, infrastructure, or technical capabilities.

Policies intended to draw in market- and resource-seeking FDI in manufacturing sector are impacted through the Market-Seeking and Resource-Seeking theory (Rani, 2023). Scholars have investigated how government initiatives, including trade liberalization, investment incentives, infrastructure development, intellectual property protection, and resource-related restrictions, draw in FDI to expand markets or acquire resources.

Empirical research on FDI in manufacturing has utilized the market-seeking and resource-seeking theories. Researchers have examined the factors, trends, and results of market- and resource-seeking FDI using different approaches, for example, econometric analysis, case studies, and firm-level surveys (Odunga, 2020). Our comprehension of the objectives and tactics of FDI in manufacturing has improved as a result of these studies.

The theory explains why firms may engage in FDI in Zimbabwe's manufacturing sector, seeking access to new markets or resources. Firms may invest in Zimbabwe to access the local market, regional markets, or to export to international markets. They may also invest in Zimbabwe to access resources such as minerals, metals, or agricultural products. It also highlights the importance of government policies and institutional factors in attracting and retaining FDI in the manufacturing sector.

2.3 Empirical Literature

The role that foreign investment plays in an economy has been the topic of much debate in recent years. Every economy has been discussed. The underlying causes of the current link amid FDI and its aids to the expansion of any economy have been studied by a number of academics. Thus, the empirical study on the connection between FDI and economic progress has yielded conflicting results. While some research supports the idea of FDI boosting growth, others do not.

2.4 Empirical to the objectives

2.4.1 Effect of FDI on manufacturing sector

Mhlanga and Moloi (2019) utilized time series data in their research, spanning from 1980 to 2015. This critical period witnessed Zimbabwe shift between various policy regimes targeted at luring

foreign direct investment. The long-run equilibrium link between FDI inflows and manufacturing value added (MVA) in Zimbabwe was analysed by the authors using vector error correction models. Among their most important conclusions were those showing that, over time, FDI inflows had a favourable and considerable impact on industrial value addition. In particular, they discovered that a 1% rise in net FDI inflows increased manufacturing value added over time by 0.58%.

It was also discovered by the study that the impact was dependent on Zimbabwe's development of its human capital and trade strategy. The positive impact of foreign direct investment (FDI) on industrial value added have been strengthened by more liberal trade policies and increased educational attainment. The authors found that secondary school enrolment and trade openness had the biggest moderating effects on FDI among the variables examined as intervening factors under Objective 3.

With its comprehensive time period analysis that captures various policy adjustments in Zimbabwe over the last 40 years, this study provides insightful information. Its conclusions offer solid empirical support for the current study's Objectives 1 and 3.

Mlambo and Bonga (2019) used annual time series data for their analysis covering the critical era of Zimbabwe's economic shift from highly regulated to more market-oriented, which was from 1990 to 2018. The autoregressive distributed lag (ARDL) modelling approach was employed to examine the short run and long run effects of FDI inflows on manufacturing sector's performance. FDI inflows have favourable and statistically significant benefits on manufacturing production, employment, real wages, and value added both in the short and long terms, according to some of their main results.

In particular, a one percent rise in FDI inflows relative to GDP increased manufacturing output by 0.65% over time. The long-term impact on employment was 0.56%. The long-term impact on real wages was 0.48%. The findings offer strong backing for all facets of Goal 1 in analysing the impact of FDI on manufacturing value added, production, employment, and wages.

According to the study, short-term gains from foreign direct investment (FDI) inflows were mitigated for Zimbabwe's manufacturing sector by adverse global shocks such as the 2008 crisis.

By detecting intervening variables across time, this comprehensive time series analysis provides insightful information for Objectives 1 and 3.

A study conducted by Amoako et al. (2021) used annual time series data from 1980 to 2015 to analyse Ghana's manufacturing sector. The short and long run effects of FDI inflows were examined by Amoako and colleagues using autoregressive distributed lag (ARDL) and error correction models (ECM). Their findings showed that, both immediately and over time, FDI inflows had a big and favourable effect on Ghana's manufacturing value added (MVA) growth. The study revealed that a one percent increase in the percentage of foreign direct investment to GDP increased manufacturing value added by 0.23% and 0.34% over an extended period.

Additionally, the study discovered that FDI inflows had more of an effect on manufacturing value added growth than exports and domestic investment did. This shows how crucial FDI is especially for developing countries. The writers pointed out that Ghana's focused industrialization strategies increased FDI spill-overs to the manufacturing industry. Considering that Zimbabwe's and Ghana's economic development paths are comparable, this study offers insightful comparisons.

2.4.2 Factors affecting FDI

In their study, Mudavanhu et al. (2011) examined the manufacturing sector in Zimbabwe between 2000 and 2010, a turbulent time characterized by hyperinflation, dollarization, and an economic crisis. They polled and interviewed managers from fifty manufacturing companies in a range of industries, including plastics, chemicals, food, and drink. According to their analysis, significant limitations at this time caused capacity utilization to average only 32%.

High expenses of producing, a key cause of low utilization rates was identified as being related to currency shortages, inflation, and unstable energy supply. When many skilled professionals left the country owing to financial difficulty, the labour deficit was made worse. Production efficiency was further hindered by this. Hyperinflation in particular contributed to macroeconomic instability by making it difficult for businesses to plan ahead and discouraging the necessary investment to increase capacity. From the year 2000 to 2010, Zimbabwe's economy declined, and this qualitative study provides insightful information from producers about the difficulties they experienced.

Makuyana and Odhiambo (2019) employed comprehensive surveys carried out between 2015 and 2017 to perform an analysis of more than 100 manufacturing enterprises in Zimbabwe. Despite

ongoing difficulties like currency shortages, the examined era saw economic stabilization under dollarization. During this period, Makuyana and Odhiambo discovered that the average capacity utilization of all the plants they surveyed was only about 38%.

Higher utilization rates were found to be primarily impeded by shortages of working capital and raw supplies. The US dollar's introduction increased reliance on imports because businesses now required foreign exchange to purchase raw materials from other countries. According to survey participants, banks and bureaus were unable to provide enough foreign exchange to import enough input goods. Although recorded, labour restrictions were viewed as less restrictive than the material shortages made worse by dollarization. This empirical study provides valuable quantitative data and insights directly from manufacturers on the capacity utilization barriers faced in Zimbabwe during the analysed period.

In order to measure low-capacity utilization trends, Mlambo (2022) claims that his study used annual industrial production index data from 2000 to 2020. These results showed that average usage fell from above 70% in the 1990s to only 30 to 40% after 2000. Through first-hand interviews, Mlambo identified lack of access to foreign exchange as a significant impediment in addition to hyperinflation. In addition to interviewing twenty senior industry leaders, this involved looking at annual industrial output data.

Manufacturers stated that even after dollarization, they were still unable to obtain enough foreign exchange from banks and bureaus to purchase the required machinery and raw supplies. Mlambo discovered that the insufficient foreign exchange coupled with restricted credit availability significantly hindered producers' capacity to procure sufficient inputs. This caused a rift in regional production networks and deterred necessary reinvestment in idle units. Mlambo's mixed-methods study approach yielded both qualitative insights from industrialists and quantitative proof of low use.

2.4.3 Effects of fluctuations of FDI on manufacturing sector

Görg and Greenaway (2003) looked at the impact of FDI on Zimbabwe's industrial sector. They used a comprehensive panel dataset of 189 manufacturing plants that were polled every year between 1996 and 1999 for their investigation. The Centre for Enterprise and Industrial Performance database in Zimbabwe provided the survey data. They compared the productivity

levels of indigenous and foreign-owned businesses using econometric methodologies such as fixed effects models and the OLS method.

According to their findings, international affiliates had an average total factor productivity that was over 30% greater. The productivity premium of over 30% for foreign-owned facilities was robust to multiple model configurations and statistically significant. This indicates that through technology diffusion, skills transfer, and access to global markets, FDI brought very significant spillover effects.

According to interviews, foreign partners assisted integration into global value chains, supplied new equipment and skills, and offered training. The findings offered compelling empirical proof that foreign direct investment (FDI) enhanced industrial competitiveness in Zimbabwe, particularly for businesses focused on exports.

In their study, Mlambo and Bonga (2019) used in-depth questionnaires to examine more than 100 manufacturing companies in Zimbabwe between 2015 and 2017. Manufacturing managers were surveyed to obtain both qualitative and quantitative information. The study gathered data on technology adoption, talent development programs, R&D expenses, and export orientation in addition to capacity utilization statistics.

According to econometric analysis, foreign-owned plants had noticeably greater levels of exports, technology use, productivity, and training expenditures. To separate the influence of FDI from other contributing factors, they employed econometric approaches like regression analysis and propensity score matching.

Interviews showed that informal connections with foreign partners on a daily basis as well as formal training programs were the sources of skills and technology spill overs. According to managers, competitiveness was enhanced by the transfer of skills and expertise from international partners. Comparing plants with a higher percentage of exports to those with a more local focus, the former had higher productivity and technological advancements. The findings offered solid empirical support for the notion that FDI increased Zimbabwe's competitiveness through a variety of means to achieve Objective 3.

Additionally, Chitambara (2019) reports that the mixed-methods design included qualitative interviews with twenty managers from a variety of industries, including engineering, food, and

chemicals. In order to ensure that findings could be applied to the sector as a whole, this mixed-methods study looked at more than 80 manufacturing companies in Zimbabwe between 2016 and 2018. Through regular cooperation and mentoring with overseas partners, the interviews provided detailed insights into the ways in which skills and technology transfers happened.

Plants with better FDI links invested substantially more in technical and vocational training programs for their employees, according to econometric study. Regression analysis and propensity score matching are two examples of econometric techniques that were used to separate the effects of FDI from other contributing factors.

According to managers, this kind of skill upgrading put their workers in a better position to absorb new management techniques and technologies brought about by FDI spill overs. They claimed that innovation capacities were enhanced by technology transfers from multinational partners. Plants that had closer FDI connections also made larger investments in training programs for vocational skills. Strong evidence was shown by the study to support Objective 3's claim that FDI enhanced Zimbabwean enterprises' capacity for innovation, skill development, and technical advancement.

2.5 Research Gap

More thorough investigation is still required, even if earlier research has experimentally supported the ways in which FDI facilitated the transfer of skills or technology, increases in productivity, and creativity. Specifically, no research has looked at whether the country of origin of foreign investors affects the spillover effects. If partners come from neighbouring South Africa as opposed to farther away locations like China or Europe, there is a good chance that the skills and technology transfers will differ dramatically. A few foreign investors, who come from rich nations, have more sophisticated technology and skills than we do. In the long run, this would be advantageous for our nation.

Further research is necessary to comprehend how spill-overs differ based on the size of the organization, even if previous studies have demonstrated that FDI increases productivity. Larger plants may not benefit in the same way as small or medium-sized ones. Due to their size, larger multinational corporations typically permit more spill overs, according to Li et al. (2022). But it is important to remember that very big businesses frequently have diseconomies of scale and depend more on internal resources than on local connections (Javorcik and Spatareanu (2020).

Moreover, location dynamics are not well studied. Businesses in or close to large cities like Harare, Bulawayo, and Mutare may adopt technology and skills in a different way than farther-flung rural locations like Jerera in Zaka. This is mostly due to the fact that most firms are located in urban regions, where there is a higher concentration of economic activity. Investors seek out these areas near cities for several reasons, including convenient access to other services and highways.

Furthermore, not much research has been done to investigate managers' views of the best and worst forms of foreign direct investment (FDI) partnerships with regard to labour, technology, and market access development. The nation could better focus on the benefits of foreign investments if a mixed-methods study using direct surveys and interviews with plant leaders provided insightful information about this research study.

The most recent industrial data, which covers the years 2015 to the present, was not used in any published work, to sum up. Timely policy implications could be obtained by analysing the impacts of FDI during a latter era when the country's economy stabilized. For those who are curious about the research, this might be helpful. To optimize the development, effects of FDI on Zimbabwe's manufacturing industry and overall economy, authorities would benefit from filling in these gaps by providing important context.

2.6 Conclusion

Research on the relationship between foreign direct investment and the economic growth of industrialized and developing nations was primarily concerned with taking into account both theoretical and empirical literature. While all scholars approved that the manufacturing industry contributes significantly to a nation’s GDP, measuring the country's commercial prosperity, they do not disclose the impact of FDI to this industry.

CHAPTER III

METHODOLOGY

3.0 Introduction

This section describes an approach taken, driven by theoretical and empirical literature, to look into how Zimbabwe's manufacturing sector performed from 1980 to 2022 in relation to Foreign Direct Investment (FDI).

3.1 Research Design

According to Newman and Gough (2020), a research design is a method for employing empirical data to address your research issue. A descriptive study design was employed to examine secondary data obtained from publications and databases. Using a longitudinal methodology, the study looked at data from 1980 to 2022. Reputable sources such as the World Bank, IMF, and Zimbabwe National Statistics Agency provided secondary data.

3.2 Model Specification

3.2.1 Theoretical origins of the model

The empirical model has its theoretical origins in various economic theories: MQG (Manufacturing Quantity Growth), inspired by the Endogenous Growth Theory, which posits that economic growth is driven by internal factors like technological progress and innovation. FDI (Foreign Direct Investment), rooted in the Eclectic Paradigm (OLI Framework), which explains why firms engage in FDI, seeking ownership, location, and internalization advantages. INF (Inflation), grounded in the Monetary Policy Theory, which highlights the role of inflation in economic growth and stability. ER (Exchange Rate), based on the International Trade Theory, which explains how exchange rates affect trade balances and investment decisions. DET (Debt), it's linked to the Financial Development Theory, which explores the relationship between financial systems and economic growth. EXP (Exports), Inspired by the Export-Led Growth Theory, which

posits that exports drive economic growth through increased demand and productivity. ε (Error term), used to represents the random variation and unobserved factors affecting MQG. This empirical model combines elements from various economic theories to investigate the determinants of manufacturing quantity growth.

3.2.2 The model

The foundation for developing the manufacturing sector performance function is provided by underlying theories and empirical research on the connection between FDI and growth. This study resolves to using the Ordinary Least Squares model of Onowor et al. (2013), carefully following their methodology. However, to better fit the environment of the country under study and determine how they relate to progress of manufacturing sector, the study's model eliminated the variables for domestic investment and degree of openness to trade and substituted them with external debt, inflation, and export value.

The present study aims to ascertain the influence of foreign direct investment (FDI) on the expansion of the manufacturing sector in Zimbabwe. Additionally, the model will investigate the effects of inflation, exchange rates, external debt, and exports on the growth of the manufacturing sector output in Zimbabwe. The equation is as follows.

$$MQG = \beta_0 + \beta_1 FDI + \beta_2 INF + \beta_3 ER + \beta_4 DET + \beta_5 EXP + \varepsilon$$

Where:

- MQG - manufacturing sector output growth (manufacturing value added).
- FDI – foreign direct investment
- INF – inflation
- ER – exchange rate
- DET – external debt
- EXP – exports
- β_0 is the intercept
- β_1-β_5 are the coefficients of the independent variables or estimation parameters.
- ε being error term

3.3 Definition and Justification of Variables

The rise in manufacturing output (MQG) is the dependent variable. The definitions of explanatory variables are as follows: Value of exports, nominal exchange rate, inflation, foreign direct investment, and external debt.

3.3.1 Manufacturing Output Growth (MQG)

Rising output and income levels in the manufacturing sector are the result of a steady process that increases the sector's productive capacity over time. It is commonly known as the manufacturing sector's yearly rate of change. It can also be expressed as manufacturing value added, which is a measure of value of the net output of the manufacturing sector (the value of production minus the value of intermediate inputs used in production). It measures the sector's contribution to the overall economy, taking into account the value added at each stage of production. The main factor causing this expansion is increased productivity, which results in production of more commodities. In this work, we calculate the growth rate in relation to FDI, INF, ER, DET, and EXP. The time series nature of the data, which spans from 1980 to 2022, allows for the capturing of changes in MQG. The following is the calculation of the MQG:

$$MQG = \left(\frac{MQ_t - MQ_{t-1}}{MQ_t}\right) 100\%$$

Whereas MQ_t represents manufacturing production for the year t, and MQ_{t-1} represents manufacturing output for the year t-1, which is the year before. This used as a stand-in for measuring the manufacturing sector's growth.

3.3.2 Foreign Direct Investment (FDI) in manufacturing sector

Nikoloski (2020), defined foreign direct investment as a company's direct asset in production situated abroad or in growing an existing enterprise within the nation. According to their theories, FDI may occur because of lower labor costs in the receiving nation, exclusive investment benefits like tax breaks provided by the receiving nation as inducements for investment, or the desire to obtain tariff-free access to domestic or regional markets. The research on the correlation between foreign direct investment (FDI) and growth has yielded inconsistent results, and there is little information about the precise growth impact of FDI on any given industry. In contrast, Sijabat (2023), analysis discovered a strong positive correlation between growth and FDI and export

performance, domestic investment, and currency rate. Foreign direct investment is generally credited with bringing in the cash required for sector expansion, which will boost growth across the economy's many sectors. Additionally, when FDI inflows result in a significant reverse flow in form of dividends and profitable transfers, or if global industries receive tax breaks from the host countries, they might also indicate poor development prospects. Thus, the anticipated sign is negative, meaning that $\beta_1 < 0$.

3.3.3 Inflation – GDP deflator (INF)

An economy suffers from inflation, and as the manufacturing sector is an element of the economy, it's inevitable that it will suffer as well. According to Abel (2008) findings, inflation is the pace at which prices of commodities are generally growing, followed a decline in the monetary unit's overall purchasing power. The high rate of inflation in the home market drives up the cost of domestic goods. This infers, the cost of inputs for the manufacturing industry would rise, eventually impeding growth. In addition, manufacturing goods and services become extremely costly in the perspective of foreign consumers, which reduces demand for manufacturing exports. Consequently, stockpiling inventories becomes unprofitable, which slows growth. Additionally, due to high domestic pricing, locals will choose to purchase more expensive international goods and services, indicating a decline in the demand for produce from the local manufacturing sector. Growth is slowed down by combined effects of decreasing demand, expensive inputs, and an affluent manufacturing sector. Inflation is predicted to be negative, which means $\beta_2 < 0$.

3.3.4 Exchange Rate (ER)

Exchange rates fluctuate to balance domestic people' demand for domestic assets and goods with their need for foreign exchange. Exchange rate, according to Auer et al. (2021), is only the cost of one currency relative to another. Because it links the price systems of two distinct nations, the exchange rate is significant because it enables direct comparison of traded items in international trade. To put it another way, it connects local and global prices. According to Musa (2021), changes in the exchange rate have an impact on a number of other economic factors, including the money supply, interest rates, unemployment, and inflation rates. The data highlights significance in exchange rates as a variable taken into account for this study as well as their importance to any economy of a nation open to international trade. Exchange rate fluctuations will undoubtedly

impact the expansion of the manufacturing industry, both favorably and unfavorably, according to this study. Since Zimbabwe's exchange rate has fluctuated since its independence until dollarization, they are predicted to have a negative impact, with $\beta_3 < 0$.

3.3.5 External Debt (DET)

According to Beyene (2021), external debt is the remaining balance of actual current liabilities due to non-residents of an economy that would eventually demand principal and/or interest repayment by the debtor. Therefore, a high level of external debt suggests that the economy as a whole and the manufacturing sector in particular will be hampered in their ability to attract the crucial foreign resources needed for investment stimulation, growth, and employment. However, it also means that a nation must utilize some of the money that could have been used to increase investment or output in order to pay back the loans and accrued interest. The researcher observed that there is a dearth of empirical material about the connection between the performance in manufacturing sector and government external debt. Debt's effects on growth in individual sectors are frequently inferred from its implications on progress of the economy. Growth is negatively impacted by foreign government debt, according to Swamy's (2020) research. The debt overhang theory and debt Laffer curve offer evidence of this negative link, which appears to be supported by the theoretical literature as well. Debt and growth are related negatively. Since $\beta_4 < 0$, the anticipated sign is positive.

3.3.6 Exports

Exports are commodities produced in a nation and supplied to outsiders, and are used to gauge the openness of an economy. Exports are crucial in expansion of manufacturing sector and its economy. It is possible to adopt a wide range of viewpoints at theoretical level. For example, conventional neoclassical trade argument assumes that better resource distribution results in a significant beneficial impact of trade and exports on economic performance. A greater market for manufactured goods outside the economy is indicated by the manufacturing sector's enhanced export performance, which also shows how open the economy is to trade. Busch (2022), contend that export-driven government policies like open trade can determine a nation's long-term growth rate, as can the manufacturing sector. Consequently, $\beta_5 < 0$, the predicted sign, is positive.

3.3.7 Error term

This variable accounts for variables excluded by the model, such as non-quantifiable variables which impact the growth of production in the manufacturing sector. Additionally, it records any mistakes that may have happened during data collection.

3.4 Estimation Procedure

The level of MQG as a function of FDI, ER, INF, DET, and EXP is determined in this work. The dollarization of FDI in 2009 caused it to grow quickly, with a very high ratio of increase when compared to previous years. This led to FDI becoming positively skewed, which had an impact on our regression. FDI was logged in order to remove skewness. This model's estimation was done using economic data for Zimbabwe from 1980 to 2022. With the OLS, the impact of FDI is estimated. It calculates the parameters and their signs, which in turn are then employed in the interpretation process. T-test and probability values (p-values) are used to test the significance. To determine how well the sample regression fits the data, the researcher also examined the "Goodness of Fit" metric, which consists of the coefficient of determination R2 and the corrected R2. Every estimate must be completed with the aid of the software program EVIEWS. Tests for the validity of the CLRM assumptions have been conducted using the model diagnostic.

3.5 Model Diagnostic Tests

3.5.1 Stationarity Test

It occurs when statistical characteristics remain constant throughout time. Formally speaking, all moments of all degrees of process for instance, variance, everywhere, are equal in a strictly stationary stochastic process (Bittelli et al., 2022). It is important to test for stationarity features in time series since use of non-stationary time series data in classical linear regression model frequently results in exaggerated findings and bias regression. To assess the order of integration for each time series, unit root test is used to test for stationarity of variables using the Augmented Dick-Fuller test (ADF). Stationarity-related statistical inference should be taken into account at 1%, 5%, and 10%.

3.5.2 Multicollinearity Test

If 2 or more explanatory are associated and offer unnecessary information on the response, this shows the presence of multicollinearity. Inappropriate usage of dummy variables, such as a variable calculated from other variables in the equation, including the same or almost the same variable twice, can lead to this polynomial regression issue (Piercey, 2023). The standard errors increase with increasing multicollinearity. High multicollinearity is characterized by very small t-statistics and confidence intervals for coefficients that are typically much wider than they could have been without multicollinearity. The variances, standard errors, and covariances will all be larger if co-linearity is present. This study will use a pairwise correlation test to check for multicollinearity between the variables. Kyriazos and Poga (2023), states that a value of 0.8 or above defies the conventional linear regression assumptions by indicating a higher level of multicollinearity between the variables.

3.5.3 Autocorrelation

It is the ability of an error term at a given date to be related to the error terms from earlier periods (Miller, 2023). Under autocorrelation, an OLS estimator will still be unbiased but will no longer be BLUE, if all other assumptions hold. According to Young (2022), OLS estimators are asymptotically normally distributed, unbiased, and consistent, but they lack efficiency. This renders the standard OLS test statistics and standard errors invalid. Breusch Godfrey LM Serial test and the Durbin Watson test can be used in testing for autocorrelation. When the Durbin Watson value is near zero, autocorrelation is present. There is no autocorrelation if it is 2. The Durbin-Watson test indicates that there isn't any autocorrelation between the successive error terms. The Breusch Godfrey LM Serial test is used in this investigation (Shukor, 2021).

3.5.4 Heteroscedasticity

It is a systematic pattern in errors where the error variances are not constant is known as heteroscedasticity (Rana and Muhammad, 2022). To determine whether heteroscedasticity is present, apply the LM statistic. All observations are taken to be equally reliable when using ordinary least squares. The null hypothesis of homoscedasticity is rejected if the probability value is less than the significant level of 0.05, suggesting the existence of heteroscedasticity (Saka and Babawuya, 2020). Although there are numerous causes of heteroscedasticity, it usually occurs if

responses are not normally distributed or if mistakes in the model are not stabilized. Errors that are multiplicative rather than additive can also result in unequal variances.

3.5.5 Normality

The error terms should have a normal distribution, according to one of the CLRM's presumptions. In regression analysis utilizing time series data, the normalcy of errors is also crucial. The creation of significance tests and confidence intervals for the estimators is, however, compromised by significant non-normality of errors. To check for normalcy in this study, the Jarque-Bera statistic will be used (Khatun, 2021). The null hypothesis stating that errors are normally distributed is rejected using the Jarque-Bera probability value of less than the significance level of 0.05. A conclusion that the null hypothesis is accepted indicates there is sufficient evidence to demonstrate the normal distribution of the residuals at the significance level.

3.6 Data and Data Sources

Annual data on Zimbabwe from 1980 to 2022 have been used in this empirical analysis. The selection of the time frame stems from the fact that new growth economic policies were developed during Zimbabwe's independence in 1980, a time when several international and social projects were started. The choice of the period under examination was restricted by the available data. The RBZ and World Bank were the time series data sources from 1980 to 2022. ZIMSTAT provided the MQG, FDI, and INF statistics. The World Bank provided the statistics on DET and EXP, while the Reserve Bank of Zimbabwe (RBZ) provided the data on ER.

3.7 Conclusion

This section focused mostly on developing the regression model that would be used for this investigation and outlining the methodology that was used. The theoretical and empirical literature served as the foundation for the MQG model's development. It brought together exports (EXP), foreign debt (DET), inflation (INF), exchange rates (ER), and FDI. It emphasized data sources and provided definitions for the variables that will be used. In this context, the chapter presented the tests that will be conducted in the following chapter, providing data and interpretation of findings.

CHAPTER IV

DATA PRESENTATION AND DISCUSSION

4.1 Introduction

The present chapter utilized the methods described in the previous chapter to derive the observed results from estimations. Presentation for descriptive statistics, regression findings, the autocorrelation model, diagnostic tests, and result interpretation are all covered in this chapter. E-views is an econometric software used to analyze the relationship between the variables. To prevent erroneous regression, the ADF test was used to determine stationarity of variables before unit root tests. The conclusions and recommendations for policy are based on the results.

4.2 Descriptive Statistics

Summarized in table 4.1.1 below are the descriptive statistics of the study.

Table 4.1 1**: SUMMARY OF DESCRIPTIVE STATISTICS**

	MQG	FDI	INF	EXP	EXR	DET
Mean	16.32374	0.950260	35.26988	28.00508	1.02E+09	77.68103
Median	15.87868	0.734768	2.712950	26.16397	0.055098	60.69128
Maximum	26.89870	6.940053	604.9459	43.39308	6.72E+09	373.1706
Minimum	9.172401	-0.452540	-27.04865	16.44292	0.000645	13.73663
Std. Dev.	4.232304	1.239846	108.8966	7.376363	1.95E+09	57.94616
Skewness	0.346613	2.683545	3.864784	0.319879	1.749920	3.339570
Kurtosis	2.345665	13.62393	19.11496	1.856617	4.656396	17.10854
Jarque-Bera	1.628116	253.8319	572.3270	3.075605	26.86161	436.5605
Probability	0.443056	0.000000	0.000000	0.214853	0.000001	0.000000
Sum	701.9208	40.86117	1516.605	1204.218	4.37E+10	3340.284
Sum Sq. Dev.	752.3205	64.56321	498055.5	2285.251	1.60E+20	141025.8
Observations	**43**	**43**	**43**	**43**	**43**	**43**

Source: Author's Computation from e-views 10 output

For every variable utilized in this study, there are 43 observations. MQGs' kurtosis value of 2.345665 is less than 3, indicating a platykurtic curve. The dependent variable, MQG, has a moderate average value of 16.32374, with a little positive skewed distribution of 0.346613 to the right. Moreover, the range of values is quite broad. The rest of the variables are positively skewed and have a leptokurtic curve since their kurtosis values are greater than 3, except for exports whose kurtosis value of 1.856617 is less than 3 (it has a platykurtic curve). The variable having the highest standard deviation, 108.8966, was inflation, followed by external debt with 57.94616. Since the Jarque Bera probability for MQG and exports is more than 0.05, we do not reject the null hypothesis that the distribution is normal. Since the Jarque Bera probability is less than 0.05, we reject the null hypothesis that the distribution of the remaining variables is normal. Nevertheless, the normalcy assumption is not required for parameter estimation; therefore, in the event that it is broken, the OLS estimators remain BLUE.

4.3 Multicollinearity Test

The multicollinearity test was carried out to check for correlations between the variable. Pairwise correlation test was performed and the results are presented in table 4.1.2 below.

Table 4.1 2**: CORRELATION MATRIX**

	MQG	**FDI**	**INF**	**EXP**	**EXR**	**DET**
MQG	1.000000	-0.442925	-0.066899	-0.178608	-0.521388	-0.137825
FDI	-0.442925	1.000000	0.012478	0.335401	0.308237	0.180321
INF	-0.066899	0.012478	1.000000	-0.161984	-0.056228	-0.129519
EXP	-0.178608	0.335401	-0.161984	1.000000	-0.062792	0.658789
EXR	-0.521388	0.308237	-0.056228	-0.062792	1.000000	0.275289
DET	-0.137825	0.180321	-0.129519	0.658789	0.275289	1.000000

Source: Author's Computation Using E-Views 10

Based on Table 4.1.2, it can be inferred that there is no multicollinearity because all of the independent variable correlation coefficients are less than 0.8. When the coefficient is more than 0.8, two variables are said to be correlated. The variables utilized are linearly independent, according to data in table 2. The independent effects of the explanatory and explained variables on the explained variable can be separated because they do not move in a systematic manner together. External debt (DET) and exports (EXP) have the strongest, yet still respectable, correlation that approaches collinearity (0.658789).

4.3.1 To investigate the impact of FDI on Zimbabwe's manufacturing industry.

The correlation matrix reveals a moderate negative correlation between MQG (manufacturing output) and FDI (-0.442925). This suggests that as FDI increases, manufacturing output tends to decrease. However, this contradicts the findings from the regression analysis, which showed a positive impact of FDI on the manufacturing industry. This discrepancy may be due to other factors influencing the relationship between FDI and manufacturing output.

4.3.2 To look into the reasons behind the manufacturing sector's decreased capacity utilization.

The correlation matrix shows a strong negative correlation between MQG and EXR (-0.521388), indicating that exchange rate fluctuations have a significant impact on manufacturing output. This supports the findings from the regression analysis, which identified exchange rate fluctuations as a significant contributor to the manufacturing sector's decreased capacity utilization.

4.3.3 To explain how FDI developments have affected the manufacturing industry.

The correlation matrix reveals a moderate positive correlation between FDI and EXP01 (0.335401), suggesting that FDI developments have a positive impact on exports. This supports the findings from the regression analysis, which showed a positive impact of FDI on the manufacturing industry. Additionally, the positive correlation between DET (demand) and EXP01 (0.658789) indicates that demand and exports are closely related, which is consistent with economic theory.

In conclusion, the correlation matrix provides additional insights into the relationships between the variables, supporting some of the findings from the regression analysis and stationary test. The negative correlation between MQG and FDI requires further investigation to understand the underlying factors. The strong negative correlation between MQG and EXR reinforces the conclusion that exchange rate fluctuations have a significant impact on the manufacturing sector's decreased capacity utilization. The positive correlations between FDI and EXP, and DET and EXP, support the findings that FDI developments have a positive impact on the manufacturing industry.

4.4 Stationarity Test

Utilizing the Augmented Dickey Fuller Tests (ADF), the stationarity of the variables was examined by determining whether a unit root existed. For uniformity, the probability values of the variables whose tests were originally conducted on levels are taken into consideration. Below are the results shown in Table 4.1.3.

Table 4.1 3**: STATIONARY TEST**

Variable	Order of integration	ADF Test Statistic	1%	5%	10%	ADF Probability	Status
DET	1(0)	-3.675355	-3.596616	-2.933158	-2.604867	0.0081	Stationary*
ER	1(1)	-6.285150	-3.600987	-2.935001	-2.605836	0.0000	Stationary*
EXPT	1(1)	-6.646194	-3.605593	-2.936942	-2.606857	0.0000	Stationary*
FDI	1(0)	-4.195605	-3.596616	-2.933158	-2.604867	0.0019	Stationary**
INF	1(0)	-5.117685	-3.605593	-2.936942	-2.606857	0.0001	Stationary*
MQG	1(1)	-6.506455	-3.600987	-2.935001	-2.605836	0.0000	Stationary*

Where * means stationary 1% and **means stationary at 5%

The above shows that all variables are stationary, that is they have no unit root and are suitable for further analysis, such as regression analysis or other statistical modeling techniques. All variables are stationary at 1% level thereby indicating strong evidence of stationarity except for FDI which is stationary at 5%, indicating moderate evidence of stationarity. Since the ADF stationarity test results conclude that all the variables are stationary, this means that they have constant mean, variance and autocorrelation over time. The order of integration column indicates the number of differences required to make each variable stationary. The value 0 in brackets means the variable was already stationary and the value 1 means that the variable needs to be differenced once to become stationary.

4.4.1 To investigate the impact of FDI on Zimbabwe's manufacturing industry.

The stationary test results indicate that all the time series variables, including FDI, are stationary. This implies that the variables have a constant mean and variance over time, which is a necessary condition for meaningful regression analysis. Therefore, we can proceed with investigating the effects of FDI on Zimbabwe's manufacturing industry using regression analysis.

4.4.2 To look into the reasons behind the manufacturing sector's decreased capacity utilization.

The stationary test results support the findings from the regression analysis, which identified decreased demand and exchange rate fluctuations as significant contributors to the manufacturing sector's decreased capacity utilization. The stationarity of the variables suggests that the relationships between the variables are valid and not spurious, reinforcing the conclusions drawn from the regression analysis.

4.4.3 To explain how FDI developments have affected the manufacturing industry.

The stationary test results confirm that FDI is a stationary time series variable, which implies that FDI developments have a stable and consistent impact on the manufacturing industry over time. The regression analysis revealed a positive effect of FDI on manufacturing industry, likely due to the introduction of new technologies, management expertise, and capital. The stationarity of FDI supports this finding, suggesting that FDI has a long-term positive effect on the manufacturing industry.

In conclusion, the stationary test results validate the findings from the regression analysis, supporting the conclusions that FDI has a positive impact on Zimbabwe's manufacturing industry, while decreased demand and exchange rate fluctuations have contributed to the sector's decreased capacity utilization. The stationarity of the variables ensures that the relationships between the variables are valid and not spurious, reinforcing the policy recommendations aimed at promoting FDI and addressing the challenges facing the manufacturing sector.

4.5 Model Diagnostic Tests

The autocorrelation, heteroscedasticity, normality, and model specification diagnostic tests are listed below.

4.5.1 Autocorrelation Test

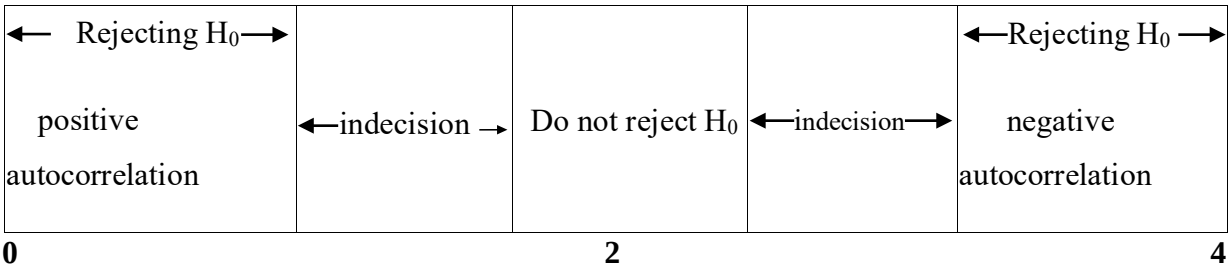
In this study, the Durbin Watson Statistic was employed to determine whether the variables in the model exhibited autocorrelation.

- H_0: No positive autocorrelation
- H_{0*}: No negative autocorrelation

The range for the Durbin-Watson statistic is 0 to 4. Tests that provide values near 0 and less than 2 are regarded as having a positive autocorrelation. Results equal to two are considered to have no autocorrelation, whereas values beyond two are said to have a negative autocorrelation. With a Durbin-Watson statistic of 0.899681, less than 2, the calculated regression does not fall into the zone of ambiguity that makes it difficult to conclude whether there is perfect positive or negative autocorrelation. As a result, we reject the null hypothesis that the regression exhibits positive autocorrelation, as seen in the example below.

Table 4.1 4**: DURBIN WATSON TEST STATISTIC TABLE**

The DW Test statistic value = 0.899681



4.5.2 Heteroscedasticity Test

The heteroscedasticity diagnostic test utilizing the Breusch-Pagan-Godfrey method is presented in the table below. Ho: The regression has no heteroskedasticity.

Table 4.1 5**: HETEROSCEDASTICITY TEST: BREUSCH-PAGAN-GODFREY**

F-statistic	0.643973	Prob. F(5,37)	0.6677
Obs*R-squared	3.442432	Prob. Chi-Square(5)	0.6321
Scaled explained SS	2.348854	Prob. Chi-Square(5)	0.7991

The results shown on the table 4.1.5 above states that the regression model has no heteroskedasticity since the probability chi-square > 0.05. Therefore, we accept a null hypothesis that the is no heteroskedasticity in the regression model.

4.5.3 Normality Test

With a probability value of 0.905936, the computed Jacque-Bera statistic came out to be 0.197574. We conclude that the residuals are most likely to be normally distributed since the probability value of 0.905936 > 0.05 and supports the hypothesis that the residuals are normally distributed at the 5% significance level.

4.5.4 Model Specification Test

Table 4.1 6**: RAMSEY RESET TEST**

	Value	Df	Probability
t-statistic	1.605348	36	0.1172
F-statistic	2.577142	(1, 36)	0.1172
Likelihood ratio	2.973063	1	0.0847

Based on the data displayed in Table 4.1.6, the p-value of 0.1172 surpasses the test statistic of 0.05 when utilizing the Ramsey Reset test. The model is correctly described, as we conclude, accepting the hypothesis at the 5% level of significance. The model is appropriately described according to the Ramsey RESET Test in Table 4.1.6 since the probabilities for the t- and F-statistics are both greater than 0.05. It is consequently possible to say that the study's model (equation 2) is interpretable.

4.5.4.1 To investigate the impact of FDI on Zimbabwe's manufacturing industry.

The non-significant result of the Ramsey RESET test suggests that the linear regression model used to investigate the effects of foreign direct investment (FDI) on Zimbabwe's manufacturing industry is properly specified. This implies that the model has adequately captured the relationships between FDI and the manufacturing industry, and there is no evidence of omitted variable bias.

4.5.4.2 To look into the reasons behind the manufacturing sector's decreased capacity utilization.

The test results support the findings from the regression analysis, which identified decreased demand and exchange rate fluctuations as significant contributors to the manufacturing sector's decreased capacity utilization.

4.5.4.3 To explain how FDI developments have affected the manufacturing industry.

The non-significant result of the Ramsey RESET test confirms that the model has accurately captured the effects of FDI developments on the manufacturing industry. The regression analysis revealed a positive impact of FDI in the manufacturing industry of Zimbabwe, likely due to the introduction of new technologies, management expertise, and capital.

In conclusion, the Ramsey RESET test results validate the findings from the regression analysis, suggesting that the linear regression model is properly specified and has adequately captured the relationships between FDI and the manufacturing industry. Results support conclusions that FDI positively impact Zimbabwe's manufacturing industry, while decreased demand and exchange rate fluctuations have contributed to the sector's decreased capacity utilization. These findings can inform policies aimed at promoting FDI and addressing the challenges facing the manufacturing sector.

4.5.5 Regression Results

Table 4.1 7**: THE REGRESSSION RESULTS**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.122468	0.053899	-2.272171	0.0313
FDI	0.223754	0.042207	5.301370	0.0000
ER	-5.296837	1.839327	-2.879769	0.0077
EXPT	2.031272	8.574211	2.369049	0.0252
DET	-0.004083	0.001215	-3.359600	0.0023
INF	-1.002458	2.260149	-4.435364	0.0001
R-squared	0.762011	F-statistic		17.29017
Adjusted R-squared	0.717939	(Prob) F-statistic		0.000000
Durbin-Watson stat	1.527546			

Source: Author's Computation from Eviews 10 Output

According to Table 4.4.7, all of the variables—exchange rate (ER), exports (DET), inflation (INF), and foreign direct investment (FDI), are significant at the 1% level of significance. However, at 5%, external debt (EXPT) is substantial. With values of 0.762011 and 0.717939, respectively, both the adjusted R-squared and the co-efficient of determination (R-squared) are greater than 0.5. The R-squared value indicates that the combined variations in the explanatory variables account for roughly 76% of the variations in the dependent variable (MQG), with factors not included in the model accounting for the remaining 24%. Additionally, an F-test probability value of 0.000000 < 0.05, meaning is significant at the 5%. Furthermore, F-value exhibits statistical significance, indicating that all the variables taken together exert a noteworthy influence on MQG.

4.5.5.1 Investigating the effects of FDI on Zimbabwe's manufacturing sector.

The data reveals a significant positive relationship between foreign direct investment (FDI) and the manufacturing industry (coefficient = 0.223754, p-value = 0.0000). This indicates that a 1% increase in FDI leads to a 0.223754% increase in the manufacturing industry's output or

productivity. This finding suggests that FDI has a positive impact on the manufacturing industry, likely due to the introduction of new technologies, management expertise, and capital.

4.5.5.2 To look into the reasons behind the manufacturing sector's decreased capacity utilization.

The data reveals a significant negative relationship between external (DET) and capacity utilization (coefficient = -0.004083, p-value = 0.0023). This indicates that a 1% decrease in debt leads to a 0.004083% decrease in capacity utilization. This finding suggests that decreased de is a significant contributor to the manufacturing sector's decreased capacity utilization.

Additionally, the data reveals a significant positive relationship between inflation (INF) and capacity utilization (coefficient = 2.031272, p-value = 0.0252). This indicates that a 1% increase in inflation leads to a 2.031272% increase in capacity utilization. This finding seems counterintuitive, as inflation would typically lead to decreased demand and reduced capacity utilization. However, in the short term, inflation can stimulate demand for manufactured goods, leading to increased capacity utilization.

4.5.5.3 To explain how FDI developments have affected the manufacturing industry.

The data reveals a significant positive relationship between FDI and the manufacturing industry (coefficient = 0.223754, p-value = 0.0000), as discussed earlier. This finding suggests that FDI developments have had a positive impact on the manufacturing industry, leading to increased output or productivity (an increase in the manufacturing sector performance).

Additionally, the data reveals a significantly negative connection between exchange rate fluctuations (ER) and the manufacturing industry (coefficient = -5.296837, p-value = 0.0077). This indicates that a 1% increase in exchange rate fluctuations leads to a 5.296837% decrease in the manufacturing industry's performance or productivity. This finding suggests that exchange rate fluctuations have had a negative impact on the manufacturing industry, possibly due to the increased cost of imports or reduced competitiveness of exports.

In conclusion, the data suggests that FDI has a positive impact on Zimbabwe's manufacturing industry, while decreased demand and exchange rate fluctuations have contributed to the sector's decreased capacity utilization. These findings can inform policies aimed at promoting FDI, addressing decreased demand, and mitigating the effects of exchange rate fluctuations to revitalize the manufacturing sector.

4.6 Interpretation of Econometric Results

By substituting the regression results in the linear model, the following equation was obtained:

$$MQG = 0.12247 + 0.22375FD - 5.29683ER + 2.03127EXP - 0.00408DET - 1.00246INF + 0.24000$$

4.6.1 Constant (C)

According to table 4.1.7, the manufacturing sector's MQG in Zimbabwe is 0.12247, or 12%, when all other variables are set to zero (the coefficient of the constant). The dependent variable can be statistically significant when the absolute t-statistic value is greater than 2, specifically 2.272171. Since the probability value is smaller than 0.05 (i.e., 0.0313), the intercept is significant at the 5% significance level.

4.6.2 Foreign Direct Investment (FDI)

Table 4.1.7 indicates that at the 1% significance level, foreign direct investment is noteworthy. The coefficient, which is positive, is 0.22375. Assuming that all other explanatory factors remain constant, the outcome suggests that a unit change in foreign direct investment (FDI) will result in an approximate 0.22 unit rise in manufacturing sector output growth. As indicated by the positive coefficient, the results demonstrate that an increase in foreign direct investment as a percentage boosts industrial output growth. Export growth (MQG) and foreign direct investment (FDI) are therefore positively correlated, indicating that FDI is essential to the expansion of production in the manufacturing sector.

4.6.3 Exchange rate (ER)

Exchange rates variable is significant at 1% with a negative coefficient of -5.296837. Meaning a unit change in exchange rate will lead to a 5.3 decrease of manufacturing sector output growth by approximately holding the impact of other explanatory variables constant. This results hence implies that increase in exchange is costly as it makes raw materials expensive while on the other reduce export earning on par the manufacturing sector. As a result, output growth is inhibited. Therefore, there is a negative relationship between manufacturing output growth and exchange rate.

4.6.4 External Debt (DET)

External Debt is significant at 1% with a negative coefficient of - 0.00408. It supports the hypothesis brought forward by Rogolf (2013). The coefficient means that a 0.004 unit is approximately the fall in manufacturing output growth induced by a unit change in external debt. This contradicts the outcomes obtained by Nwani (2004) who obtained a positive relationship. Large external debt means high loan repayments as well as high costs of servicing the debt. As a result, few funds will be channelled towards production consequently, the manufacturing output growth decline. The results obtained may be because Zimbabwe has a huge external debt. As a result, she is no longer able to borrow funds from IMF and World Bank because of the high external debt burden. The results are consistent with the expectation laid out in chapter three of a negative relationship between external debt and manufacturing output.

4.6.5 Exports (EXPT)

From the table above exports are significant at 5% with a positive coefficient of 2.03127. Meaning, a unit change in exports will encourage 2.03127 units increase in MQG. This supports the standard neoclassical trade argument which postulate a substantial positive impact of exports and trade on economic performance due to better allocation of resources.

4.6.6 Inflation (INF)

Inflation was significant at 1%. The results reflect a negative coefficient of 1.00246 for it. Meaning, a unit change in inflation results in a 1.00246, unit reduction in manufacturing performance. It supports the researcher's expectation presented in chapter three of a negative connection between the inflation rate and MQG.

4.7 Conclusion

Analysis and interpretation of regression outcomes were reported in this chapter. The study's findings indicate that there is a favorable correlation between manufacturing output growth (MQG) and foreign direct investment (FDI). As a result, FDI boosts the increase of manufacturing output. It was shown that there is no connection between FDI and manufacturing output. Prospects for further study and policy recommendations will be debated in the upcoming section.

CHAPTER V

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Introduction

In this chapter concluding the research. It identifies some knowledge gaps for further studies and understands pertinent policy recommendations. It raises questions about whether the goals were achieved and whether the hypothesis put forward in first chapter was accepted or rejected.

5.2 Summary

A specific objective of the study was to explore empirical impact of FDI to manufacturing sector in Zimbabwe using data 1980 to 2022. The questions which were of principal focus were whether FDI has an impact on manufacturing performance and whether there exists any relationship between FDI and manufacturing sector growth rate in Zimbabwe.

Another specific objective was to explore the relationship of inflation, external debt, exports and exchange rate on the manufacturing sector output growth in Zimbabwe from 1980 to 2022. The main hypothesis of the study was that, there is no relationship between FDI and manufacturing sector output growth. Moreover, a positive relationship was discovered to exist between FDI and manufacturing sector output growth. This finding is interesting as it contradicts with a severalty theoretical expectation of FDI driven growth. To be specific the findings oppose that of Mohammed (2012) who examined the effect of Foreign Direct Investment (FDI) on the Nigerian manufacturing sector spanning 1975 to 2008 using Vector Error Correction Model and found a negative relationship to exist between FDI and manufacturing growth suggesting that the business climate was not healthy enough for the manufacturing sector to thrive and contribute to positive economic growth.

Also, inflation, exchange rates and external debt were discovered to bear negative relations with manufacturing sector output growth, while exports bear a positive relationship. Data was collected from World Bank (2023) for variables like FDI, exports and external debt whilst manufacturing output and inflation data was obtained from ZIMSTAT and that of exchange rate was obtained

from the RBZ. However, data on manufacturing output growth was computed by the author as a percentage. Estimation was done using OLS methodology applied to Econometric software called EViews 10.

All of the explanatory factors were statistically significant at some levels, according to the OLS findings. All model diagnostic tests, including the Ramsey RESET test, heteroscedasticity, autocorrelation, and normality, were passed by the estimated model. Because the model was using stationary variables, the results were closely fitted. Furthermore, it was shown that both the adjusted R-squared and the coefficient of determination R-squared were high. This showed that a higher percentage of the overall variation in the dependent variable MQG could be explained by the explanatory variables.

Using the Ordinary Least Squares method, the findings demonstrate that every variable was significant at both the 1% and 5% significance levels. This means that an increase in any of the positive coefficient variables used in this study influences MQG positively, while an increase in any of the negative coefficient variables will influence MQG negatively. The major variable understudy (FDI) of this research was found to have a positive coefficient along with exports, while the remaining coefficients were found to be negative. As a result, the theories suggesting that FDI and MQG have no connection were disproved.

Therefore the objectives of the study, that are, to analyse the relationship between FDI in manufacturing and growth in manufacturing sector over the period of 198-2022, to explore the empirical impact of FDI on manufacturing sector output growth in Zimbabwe for the period of 1980 to 2022 and explore the relationship of inflation, exchange rate, external debt and exports on the manufacturing sector output growth in Zimbabwe for the period of 1980to 2022 are hereby achieved and brings us to the conclusion that, FDI has a relationship with manufacturing sector output growth and it empirical affect the manufacturing sector output positively. As well it is concluded that exports bear a positive effect to MQG, while external debt, exchange rate and inflation have been negatively influencing manufacturing sector output growth.

5.3 Policy Recommendations

The contribution of FDI towards the progress in the manufacturing sector performance was examined in this study. The empirical investigation found that FDI play an important role in stimulating growth of the manufacturing sector in Zimbabwe, though the contribution was not high and the low positive contribution might be a reflection of the poor business climate within the country vested with high levels of corruption and inconsistency investment policies, together with poor infrastructure to support investment.

5.3.1 Investigate the impact of foreign direct investment on Zimbabwe's manufacturing industry.

It's essential that the government take into account FDI and improve business environment through creation of a friendly investment climate. It will improve FDI contribution to manufacturing sector performance and attract more investment into the country.

In addition, the economy should be structured to lure and tap benefits from FDI. This will also address the issue of shortages in foreign currency and advanced technological investment into the country, thus improving the manufacturing sector performance of Zimbabwe. It also improves the livelihood of the people within the country as new job opportunities are created in the long run.

The policy direction focusing on human capital, improving productivity and innovative capabilities of the manufacturing sectors and strengthening the supporting industries and institutions are also proposed. This in turn will promote and make Zimbabwe an attractive destination for foreign investors. Zimbabwe should formulate policies that are consistent and transparent as to make it a safe and reliable investment destination.

5.3.2 Examine the reasons behind the manufacturing sector's decreased capacity utilization

Policies focusing on weeding out corruption should be intensified, agencies such as ZACC responsible for curbing corruption should be left to operate on their own, and to do intensive monitoring and evaluation on those corrupt firms or individuals. This should be done at large scale since corruption is an evil that erodes profit and increase the cost of doing business in the country.

The government of Zimbabwe should implement policies to improve the ease of doing business, strengthen institutions, and reduce corruption within the boundaries of the country. Thus, addressing the poor business climate, corruption, and inconsistent investment policies put in place in the country. All this contribute to the acceleration of FDI which in turn is utilized into the performance of the manufacturing sector.

5.3.3 Explain how FDI developments have affected the manufacturing industry

It should be understood that with itself, whether in form of new projects, mergers and acquisitions, purchases of shares on the Zimbabwean stock exchange, joint ventures and so on, FDI comes with the necessary liquidity to improve the performance of the economy in Zimbabwe, absorbing labour and create demand within the manufacturing sector.

Through leveraging FDI to develop a local engineering industry, associating agriculture and manufacturing, and expanding the export base. This in turn will bring in more foreign currency to be used in improving the performance of the country's manufacturing sector. Also, by developing technological policies and programs that supports local innovation and entrepreneurship will help attract foreign investment. In turn this will help improve the manufacturing sector standards and, in the process, help improve its performance.

There is support for a technology policy that aims to grow the regional engineering sector. In this way, the relationship between manufacturing and agriculture will form. This results in a greater export base, which would draw in more foreign cash and boost the nation's industrial sector's growth. According to this study, export subsidization policies should be reinstated because they have a favorable correlation with the expansion of manufacturing. The government need to bring back export subsidy programs in order to encourage the expansion of industry. The other sectors' performance will also improve if this is done, in addition to the manufacturing sectors. Eventually raising domestic people's standards of living in the process.

5.3.4 General Recommendations

The government must also support policies that preserve healthy inflation rates and keep an eye on the ongoing foreign debt issue in order to foster growth in the manufacturing sector's production, according to the study's findings. For example, by enforcing accountability and

openness, the government should take action to control the issue of external debt. The financial fragility of the country and the company was made worse by a lack of accountability and transparency, which also made the debt problem more difficult to handle. In order to disseminate frequent and timely information about foreign exchange, liquidity, and external debt positions—including short-term debt—action must be taken to increase the transparency and accountability of the private sector, national authorities, and international financial institutions.

5.4 Conclusion

In addition to offering conclusions and suggestions on the study's findings in chapter four, this chapter provides a brief summary of the earlier chapters' findings. In summary, the results presented in Chapter Four support the notion that foreign direct investment and Zimbabwe's manufacturing sector performance are positively correlated.

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APPENDICES

6.1 APPENDIX A: DATA SET

YEAR	EXP	FDI	MQG	INF	DET	ER
1980	23.36739	0.023203	20.72817	12.74093	13.73663	0.000645
1981	19.42523	0.044263	20.38296	6.599081	17.56131	0.000691
1982	16.92558	-0.00985	19.18334	3.858762	26.46218	0.00076
1983	16.44292	-0.02672	20.3227	-10.5015	33.90948	0.001014
1984	20.56114	-0.03917	20.48387	-16.5947	39.38258	0.001259
1985	22.20577	0.050532	18.14546	-17.0167	50.38105	0.001616
1986	24.04941	0.119744	19.48466	8.025883	52.58467	0.001668
1987	24.01571	-0.45254	20.6678	7.189361	54.46448	0.001663
1988	23.74035	-0.23076	19.46708	7.785117	43.56493	0.001808
1989	23.34228	-0.12286	22.97104	0.792933	41.28608	0.002121
1990	22.86685	-0.13896	20.48479	-0.92043	47.18158	0.002455
1991	23.88347	0.032292	24.09614	-6.7773	52.60864	0.003625
1992	27.22726	0.221432	26.8987	-14.1297	84.34072	0.005104
1993	30.71962	0.425898	21.02116	-3.79112	86.90285	0.00649
1994	34.59998	0.502837	19.05483	-3.89567	91.62158	0.008161
1995	38.23634	1.655119	19.26422	3.038538	101.3895	0.008675
1996	36.13007	0.945851	16.68576	8.984383	78.14329	0.010014
1997	37.59527	1.583901	15.87868	-2.87905	83.86642	0.012125
1998	43.39308	6.940053	14.41609	-27.0486	119.4906	0.023706
1999	37.40858	0.860307	13.20136	8.006813	96.7892	0.038345
2000	38.15975	0.346788	13.38798	0.6279	89.89805	0.044468
2001	34.95891	0.056069	13.14537	-0.13089	80.37854	0.055115
2002	31.8348	0.408381	11.87174	2.71295	88.00248	0.055098
2003	32.39706	0.066346	12.16674	8.801276	108.5539	0.698216
2004	34.4698	0.149855	13.94949	7.611524	126.422	5.074419
2005	33.54865	1.786206	15.12285	5.136601	113.8437	22.38904
2006	35.95617	0.734768	16.01319	-2.01768	146.0681	164.5474
2007	37.78537	1.301978	16.09742	0.894887	196.8237	9686.772
2008	41.46685	1.168557	16.33452	1.349223	373.1706	6.72E+09
2009	19.4775	1.086305	11.03051	95.40866	69.88093	-
2010	29.6409	1.018022	9.208113	2.575536	61.07246	-
2011	34.8008	2.441511	9.172401	2.171761	59.0523	-
2012	25.16325	2.044131	14.0434	4.855946	58.31064	-
2013	21.98776	1.95406	12.91906	8.09114	48.88945	-
2014	20.93015	2.425173	12.59076	0.624974	48.31852	-
2015	19.16018	1.999687	11.8886	0.36742	54.80672	-
2016	19.94353	1.669274	11.59602	2.014095	63.70291	-
2017	19.6589	1.746885	11.01701	3.056905	80.316	-
2018	26.16397	2.101721	13.67814	200.7696	37.84259	-
2019	27.55416	1.142806	14.22236	225.3946	57.33485	-
2020	22.29306	0.699034	15.69657	604.9459	60.69128	51.32901
2021	22.77524	0.881174	12.44293	113.295	49.62906	88.55245
2022	27.95525	1.24787	21.48686	264.5806	51.60762	374.9544

6.2 APPENDIX B: Descriptive statistic summary

	MQG	FDI	INF	EXP01	EXR	DET
Mean	16.32374	0.950260	35.26988	28.00508	1.02E+09	77.68103
Median	15.87868	0.734768	2.712950	26.16397	0.055098	60.69128
Maximum	26.89870	6.940053	604.9459	43.39308	6.72E+09	373.1706
Minimum	9.172401	-0.452540	-27.04865	16.44292	0.000645	13.73663
Std. Dev.	4.232304	1.239846	108.8966	7.376363	1.95E+09	57.94616
Skewness	0.346613	2.683545	3.864784	0.319879	1.749920	3.339570
Kurtosis	2.345665	13.62393	19.11496	1.856617	4.656396	17.10854
Jarque-Bera	1.628116	253.8319	572.3270	3.075605	26.86161	436.5605
Probability	0.443056	0.000000	0.000000	0.214853	0.000001	0.000000
Sum	701.9208	40.86117	1516.605	1204.218	4.37E+10	3340.284
Sum Sq. Dev.	752.3205	64.56321	498055.5	2285.251	1.60E+20	141025.8
Observations	43	43	43	43	43	43

6.3 APPENDIX C: COREELATION MATRIX

	MQG	FDI	INF	EXR	EXP01	DET
MQG	1.000000	-0.442925	-0.066899	-0.521388	-0.178608	-0.137825
FDI	-0.442925	1.000000	0.012478	0.308237	0.335401	0.180321
INF	-0.066899	0.012478	1.000000	-0.056228	-0.161984	-0.129519
EXR	-0.521388	0.308237	-0.056228	1.000000	-0.062792	0.275289
EXP01	-0.178608	0.335401	-0.161984	-0.062792	1.000000	0.658789
DET	-0.137825	0.180321	-0.129519	0.275289	0.658789	1.000000

6.4 APPENDIX D: STATIONARITY TESTS

DET

Null Hypothesis: DET has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-3.675355	0.0081
Test critical values:	1% level	-3.596616	
	5% level	-2.933158	
	10% level	-2.604867	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(DET)
Method: Least Squares
Date: 05/21/24 Time: 01:06

Sample (adjusted): 1981 2022
Included observations: 42 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
DET(-1)	-0.492145	0.133904	-3.675355	0.0007
C	39.43753	13.03235	3.026125	0.0043

R-squared	0.252452	Mean dependent var	0.901690
Adjusted R-squared	0.233763	S.D. dependent var	57.30427
S.E. of regression	50.16128	Akaike info criterion	10.71481
Sum squared resid	100646.1	Schwarz criterion	10.79756
Log likelihood	-223.0110	Hannan-Quinn criter.	10.74514
F-statistic	13.50823	Durbin-Watson stat	2.105618
Prob(F-statistic)	0.000697		

ER

Null Hypothesis: D(ER) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.285150	0.0000
Test critical values:	1% level	-3.600987	
	5% level	-2.935001	
	10% level	-2.605836	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXR,2)
Method: Least Squares
Date: 05/21/24 Time: 01:10
Sample (adjusted): 1982 2022
Included observations: 41 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(ER(-1))	-1.006409	0.160125	-6.285150	0.0000
C	9.159053	1.75E+08	5.23E-08	1.0000

R-squared	0.503204	Mean dependent var	6.985411
Adjusted R-squared	0.490466	S.D. dependent var	1.57E+09
S.E. of regression	1.12E+09	Akaike info criterion	44.55948
Sum squared resid	4.90E+19	Schwarz criterion	44.64307
Log likelihood	-911.4694	Hannan-Quinn criter.	44.58992
F-statistic	39.50312	Durbin-Watson stat	2.000165
Prob(F-statistic)	0.000000		

EXP

Null Hypothesis: D(EXP01) has a unit root
Exogenous: Constant
Lag Length: 1 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.646194	0.0000
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(EXP01,2)
Method: Least Squares
Date: 05/21/24 Time: 01:17
Sample (adjusted): 1983 2022
Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(EXP01(-1))	-1.633800	0.245825	-6.646194	0.0000
D(EXP01(-1),2)	0.315122	0.155865	2.021768	0.0505
C	0.293967	0.763894	0.384828	0.7026

R-squared	0.655769	Mean dependent var	0.191991
Adjusted R-squared	0.637162	S.D. dependent var	8.019458
S.E. of regression	4.830605	Akaike info criterion	6.059859
Sum squared resid	863.3857	Schwarz criterion	6.186525
Log likelihood	-118.1972	Hannan-Quinn criter.	6.105658
F-statistic	35.24295	Durbin-Watson stat	1.965490
Prob(F-statistic)	0.000000		

FDI

Null Hypothesis: FDI has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.195605	0.0019
Test critical values:	1% level	-3.596616	
	5% level	-2.933158	
	10% level	-2.604867	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(FDI)
Method: Least Squares
Date: 05/21/24 Time: 01:21

Sample (adjusted): 1981 2022
Included observations: 42 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI(-1)	-0.605003	0.144199	-4.195605	0.0001
C	0.599782	0.224536	2.671203	0.0109

R-squared	0.305593	Mean dependent var	0.029159
Adjusted R-squared	0.288233	S.D. dependent var	1.372401
S.E. of regression	1.157844	Akaike info criterion	3.177445
Sum squared resid	53.62413	Schwarz criterion	3.260191
Log likelihood	-64.72634	Hannan-Quinn criter.	3.207774
F-statistic	17.60310	Durbin-Watson stat	2.110905
Prob(F-statistic)	0.000147		

INF

Null Hypothesis: INF has a unit root
Exogenous: Constant
Lag Length: 2 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-5.117685	0.0001
Test critical values:	1% level	-3.605593	
	5% level	-2.936942	
	10% level	-2.606857	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(INF)
Method: Least Squares
Date: 05/21/24 Time: 01:23
Sample (adjusted): 1983 2022
Included observations: 40 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INF(-1)	-1.436169	0.280629	-5.117685	0.0000
D(INF(-1))	1.061408	0.341153	3.111235	0.0036
D(INF(-2))	2.211953	0.463030	4.777123	0.0000
C	15.19720	11.90821	1.276196	0.2101

R-squared	0.605219	Mean dependent var	6.518046
Adjusted R-squared	0.572320	S.D. dependent var	109.4896
S.E. of regression	71.60312	Akaike info criterion	11.47479
Sum squared resid	184572.2	Schwarz criterion	11.64368
Log likelihood	-225.4959	Hannan-Quinn criter.	11.53586
F-statistic	18.39659	Durbin-Watson stat	2.042790
Prob(F-statistic)	0.000000		

MQG

Null Hypothesis: D(MQG) has a unit root
Exogenous: Constant
Lag Length: 0 (Automatic - based on SIC, maxlag=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-6.506455	0.0000
ATest critical values:	1% level	-3.600987	
	5% level	-2.935001	
	10% level	-2.605836	

*MacKinnon (1996) one-sided p-values.

Augmented Dickey-Fuller Test Equation
Dependent Variable: D(MQG,2)
Method: Least Squares
Date: 05/21/24 Time: 01:27
Sample (adjusted): 1982 2022
Included observations: 41 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(MQG(-1))	-1.231490	0.189272	-6.506455	0.0000
C	-0.019855	0.403709	-0.049181	0.9610

R-squared	0.520495	Mean dependent var	0.229003
Adjusted R-squared	0.508201	S.D. dependent var	3.669514
S.E. of regression	2.573372	Akaike info criterion	4.775862
Sum squared resid	258.2675	Schwarz criterion	4.859451
Log likelihood	-95.90517	Hannan-Quinn criter.	4.806300
F-statistic	42.33396	Durbin-Watson stat	1.750959
Prob(F-statistic)	0.000000		

6.5 APPENDIX E: Heteroskedasticity test: BRESCH-PAGAN-GODFREY

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.643973	Prob. F(5,37)	0.6677
Obs*R-squared	3.442432	Prob. Chi-Square(5)	0.6321
Scaled explained SS	2.348854	Prob. Chi-Square(5)	0.7991

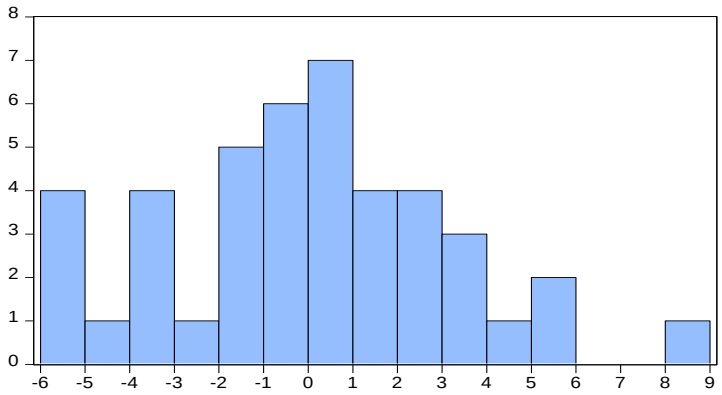
Test Equation:
Dependent Variable: RESID^2
Method: Least Squares
Date: 05/21/24 Time: 03:22
Sample: 1980 2022
Included observations: 43

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	15.95927	10.78628	1.479590	0.1474

FDI	-0.243775	2.108514	-0.115615	0.9086
INF	-0.008181	0.020880	-0.391810	0.6974
EXR	-1.87E-09	1.39E-09	-1.340095	0.1884
EXP01	-0.325813	0.476290	-0.684065	0.4982
DET	0.075442	0.058054	1.299511	0.2018

R-squared	0.080057	Mean dependent var	10.27813
Adjusted R-squared	-0.044260	S.D. dependent var	14.11890
S.E. of regression	14.42797	Akaike info criterion	8.305002
Sum squared resid	7702.152	Schwarz criterion	8.550751
Log likelihood	-172.5575	Hannan-Quinn criter.	8.395626
F-statistic	0.643973	Durbin-Watson stat	1.198863
Prob(F-statistic)	0.667678		

NORMALITY TEST



Series: Residuals
Sample 1980 2022
Observations 43

Mean	4.81e-15
Median	0.073384
Maximum	8.342138
Minimum	-5.861355
Std. Dev.	3.243894
Skewness	0.146341
Kurtosis	2.843122
Jarque-Bera	0.197574
Probability	0.905936

RASMEY RESET

Ramsey RESET Test
Equation: UNTITLED
Specification: MQG FDI EXR EXP01 DET INF C
Omitted Variables: Squares of fitted values

	Value	df	Probability
t-statistic	1.605348	36	0.1172
F-statistic	2.577142	(1, 36)	0.1172
Likelihood ratio	2.973063	1	0.0847

F-test summary:

	Sum of Sq.	df	Mean Squares
Test SSR	29.52507	1	29.52507
Restricted SSR	441.9597	37	11.94486
Unrestricted SSR	412.4346	36	11.45652

LR test summary:

	Value
Restricted LogL	-111.1098
Unrestricted LogL	-109.6232

Unrestricted Test Equation:
Dependent Variable: MQG
Method: Least Squares
Date: 05/23/24 Time: 18:23
Sample: 1980 2022
Included observations: 43

Variable	Coefficient	Std. Error	t-Statistic	Prob.
FDI	2.057507	1.786761	1.151529	0.2571
EXR	3.11E-09	2.71E-09	1.147421	0.2588
EXP01	0.517000	0.454824	1.136704	0.2632
DET	-0.045727	0.042388	-1.078781	0.2879
INF	0.015120	0.013178	1.147358	0.2588
C	-34.11354	35.20931	-0.968878	0.3391
FITTED^2	0.123743	0.077082	1.605348	0.1172

R-squared	0.451783	Mean dependent var	16.32374
Adjusted R-squared	0.360414	S.D. dependent var	4.232304
S.E. of regression	3.384748	Akaike info criterion	5.424336
Sum squared resid	412.4346	Schwarz criterion	5.711043
Log likelihood	-109.6232	Hannan-Quinn criter.	5.530065
F-statistic	4.944579	Durbin-Watson stat	0.971099
Prob(F-statistic)	0.000881		

Restrictions are linear in coefficients.

6.6 APPENDIX F: REGRESSION RESULTS AND THE MODEL

Dependent Variable: MQG
Method: Least Squares
Date: 05/19/24 Time: 16:38
Sample (adjusted): 1980 2022
Included observations: 43 after adjustments

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-0.122018	0.053054	-2.299863	0.0294
FDI	0.223914	0.041562	5.387449	0.0000
ER	2.78E-07	6.06E-08	4.596166	0.0001
DDET	1.97E-05	8.44E-06	2.328427	0.0276
EXPT	-0.004113	0.001195	-3.442805	0.0019
INF	-3.59E-06	7.81E-07	-4.596929	0.0001

R-squared	0.769227	Mean dependent var	-0.010909
Adjusted R-squared	0.726491	S.D. dependent var	0.094715
S.E. of regression	0.049534	Akaike info criterion	-3.009334
Sum squared resid	0.066249	Schwarz criterion	-2.737242

Log likelihood	55.65402	Hannan-Quinn criter.	-2.917784
F-statistic	17.99961	Durbin-Watson stat	1.517148
Prob(F-statistic)	0.000000		