

**AKENTEN APPIAH MENKAH UNIVERSITY OF SKILLS TRAINING AND  
ENTERPRENEURIAL DEVELOPMENT, KUMASI.**

**DETERMINANTS OF FOREIGN DIRECT INVESTMENT USING  
MODERATING AND MEDIATING EFFECT: A CASE STUDY OF GHANA**

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**MASTER OF BUSINESS ADMINISTRATION (FINANCE)**

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Entrepreneurial Development**

**NOVEMBER, 2022**

**DECLARATION**

**STUDENT'S DECLARATION**

I hereby declare that this research work with the exception of quotations and references contained in published works which have all been acknowledged, is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

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**SUPERVISOR'S DECLARATION**

I hereby declare that the presentation of this project work was supervised in accordance with the guidelines on supervision of Research laid down by the university, AAMUSTED.

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**DR. JOSEPH BAAFI ANTWI**

## **DEDICATION**

I dedicate this work to God Almighty for the Grace, Favour and strength bestowed unto me and for taking me through a successful completion of my education, am grateful. I also dedicate this project work to my parents, family and love ones for the care, prayer and support. I want to also express a sincere appreciation to our supervisor, Dr Joseph Baafi Antwi for his dedicated time, advice and guidance he gave to me throughout my research study.

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## **ABSTRACT**

The purpose of the study was to establish the determinants of foreign direct investment in Ghana. The study specifically focused on the effects of: trade openness, inflation, labour and capital investment in Ghana. The study also assessed the moderating effect government policies on the relationship between financial development and its determinants in Ghana. The study employed descriptive research design for the study. Secondary data was collected through World Bank Data sampling was adopted which was appropriate for getting a sample for the study. Also secondary data was collected from Ghana statistical website; Data analysis was done using statistical package for social science (SSPS). Descriptive statistic was used to present the findings of the study supported by Linear Regression Analysis using Andrew Hayes Moderation and Mediation Effect being undertaken to provide inference. The variables namely trade openness, Inflation, Labour and Capital were found as determinants that affect Foreign Direct Investment which in a long run affect Financial Development and Economic Growth of Ghana.

Further, the effects of the determinants on Foreign Direct Investment were seen to be heavily moderated by government policies and democracy index. The study suggested that institutions be strengthened (in terms of credit risk management, financial structure, and corporate governance/management efficiency), that the government pursue expansionary policies to spur economic growth, that foreign direct investment in Ghana becomes attractive, and that the volume of exports be increased by further opening up the Ghanaian economy.

## TABLE OF CONTENT

CONTENT	PAGE
DECLARATION	ii
DEDICATION	iii
ACKNOWLEDGMENT	iv
ABSTRACT	v
TABLE OF CONTENT	vi
LIST OF FIGURES	ix
<b>CHAPTER ONE: INTRODUCTION</b>	<b>1</b>
1.1 Overview	1
1.2 Background to the Study	1
1.3 Statement of the Problem	4
1.4 Purpose of the Study	5
1.4.1 Objectives of the Study	5
1.5 Research Questions	5
1.7 Significance of the Study	6
1.8 Limitations of the Study	7
1.9 Delimitation of the Study	7
1.10 Organization of the Study	8
<b>CHAPTER TWO: LITERATURE REVIEW</b>	<b>10</b>
2.1 Introduction	10
2.2 Concept Review	10
2.3 Theoretical Review	11
2.3.1 The Product Life Cycle Hypothesis	11

2.3.2 Eclectic theory	13
2.4 Empirical Review	15
2.5 Conceptual Framework for the Study	21
2.5.1 Determinants of Foreign Direct Investments	21
2.5.1 Trade Openness	21
2.6.4 Low-Cost Labour	23
2.6.6 Political Factors	24
2.6.7 Government Policy	24
2.6.8 Economic Growth	25
2.6.9 Trade Openness	26
2.7 Conclusion	29
<b>CHAPTER THREE: RESEARCH METHODOLOGY</b>	<b>30</b>
3.1 Introduction	30
3.2 Variables Used	30
3.2.1 Moderating Variables	30
3.2.2 Mediating Variables	31
3.2.2.1 Trade Openness	32
3.2.2.2 Inflation	32
3.2.2.3 Labour	33
3.2.2.4 Capital	33
3.3 Model Specification	34
3.4 Model 1	36
3.5 Model 2	38
3.6 Data Sources	41



3.7 Justification of the Selected	41
<b>CHAPTER FOUR: RESULTS AND DISCUSSIONS</b>	<b>42</b>
4.0 Introduction	42
4.1 Descriptive Statistics.	42
4.2. Model 1	42
4.2.1 Interpretation of Analysis	43
4.3 Model 2	44
4.3.1 Interpretation of Analysis	48
4.4 Direct, Indirect and Total Effect	50
4.5 Model 3	52
<b>CHAPTER FIVE: SUMMARY, CONCLUSION AND RECOMMENDATIONS</b>	<b>62</b>
5.0 Introduction	62
5.1 Summary of the Findings	62
5.2 Conclusion	62
5.3 Policy Recommendations	64
5.4 Areas for Further Research	65
<b>REFERENCES</b>	<b>66</b>
<b>APPENDIX A</b>	<b>76</b>
<b>APPENDIX B</b>	<b>78</b>
<b>APPENDIX C</b>	<b>83</b>

## **LIST OF FIGURES**

<b>FIGURE</b>	<b>PAGE</b>
Figure 3.1 Conceptual Diagram of Moderation Effect	36
Figure 3.2 Statistical Diagram of moderating effect	37
Figure 3.3 Conceptual Diagram of Mediation Effect	38
Figure 3.4 Statistical Diagram of Mediating Effect	39
Figure 3.5 Conceptual Diagram of Moderating and Mediating Effect	40
Figure 3.6 Statistical Diagram of Moderating and Mediating Effect	40

# **CHAPTER ONE**

## **INTRODUCTION**

### **1.1 Overview**

This chapter begins the research work. It comprises of the background to the study, statement of the problem, objectives of the study, the research questions, as well as the significance of this study, limitations, and delimitations, organisation of the study and definitions of key words. All aspects will be explained into details.

### **1.2 Background to the Study**

Ghana used to be called the Gold Coast. The nation's independence was proclaimed by Kwame Nkrumah on March 6, 1957. Nkrumah was the first President of Ghana when it became a Commonwealth republic on July 1, 1960. The country of Ghana is frequently cited as an example of political and economic transformation in Africa, but 65 years after gaining its independence, Ghana has emerged as one of the continent's top destinations for foreign direct investment (FDI) as cited by (Fuller, H. 2015, Levy B. 2014) Ghana's current situation is the outcome of its long-term democratic journey, which aimed to create a solid road to draw in as many investors as possible.

Originally, gold and cocoa were the main products that attracted investors into the country. Now, after over two decades of stability and steady democracy, irrespective of the government in power, the country has put in place reliable institutions to improve and sustain its business environment (Feng et al, 2003). Also, each successive government has considerably enhanced the legal framework to protect and

encourage investments. It is evident that there is a strong tie between democracy and FDI. Foreign Direct Investment (FDI) is “the process whereby residents of the source country obtain ownership of assets for the purpose of controlling the production, distribution and other activities of a firm in the host country. It also involves the transfer of financial capital, technology and other skills such as managerial, marketing and accounting”, etc (Moosa, 2002, p.1 and Imad A.M 2002, p.1). However, the general definition of FDI, as stated by the World Bank (2000, p.337), is the net inflow of investment with the objective of acquiring a long-term management interest (i.e., minimum 10 percent of ordinary shares or voting power) in an operating enterprise located in a non-resident country of the direct investor. (Reddy, K. S., Nangia, V. K., & Agrawal, R. (2014).

Foreign direct investment (FDI) is one of the sustainable growth factors of any nation which seeks to improve the lives of its citizens and the country at a whole and this was made known by (Coy and Comican, 2014) that FDI serves as a critical factor that helps to propel the economic growth of every nation.

FDI can be put into two main categories such as foreign takeovers (or mergers and acquisitions) and green-field investments (Chaudhury, S.N.Nanda & B.Tyagi, 2021). Whereas foreign takeovers refer to the transfer of local assets into a foreign ownership, the green-field investments have to do with the creating of factories from scratch or set up corporations in another country other than the country of the investor. (Kalotay et al, 2008)

It is noteworthy that allowing FDI is one of the least expensive ways to integrate a host nation into the global economy. To draw, keep, and sustain foreign investment, a

favourable business climate and the provision of equitable possibilities (in terms of law enforcement, taxation, etc.) for both foreign and local investors are essential. For both foreign and local investors are key in attracting, retaining and sustaining investments from abroad. (Basu, A., & Srinivasan, K., 2002). Most of the countries on the African continent have relaxed their trade barriers as a means of enhancing easy participation in certain strategic areas of their economies by foreign investors. The goal of the numerous bilateral trade agreements that African nations have signed is to increase the free movement of capital into the continent. The African Growth and Opportunity Act (AGOA), the ratification of the Economic Partnership Agreements between the European Union (EU) and the countries of the African, Pacific, and Caribbean (APC), and the formerly Millennium Development Goal (MDG), now Sustainable Development Goals, are a few of these agreements (SDGs) (Amos ,S. 2010). It must be pointed out, however, that the motives behind these international capital flows are still substantially different than those related to the inflows of FDI to developing countries, in spite of the changes that have taken place over the last decades. For example, the search for agricultural or mineral resources is much less important today than it was at the beginning of the twentieth century, (Sabir et al, 2010).

On the other hand, the current movement of these flows is extremely complex, and is subject to a wide variety of factors related to the competitive environment in which the firms operate, to their specific characteristics and to economic factors in Ghana. (Aryeetey, E.,2001).

### **1.3 Statement of the Problem**

In this study, we develop a moderated mediation model as shown in Figure 3.3. Specifically, the study assessed the serial moderation with Trade Openness, Inflation and Foreign Direct Investment serially mediating the relationship between collaborative Financial Development and Economic Growth. Further, the Moderating and Mediating effect will be used to examine the relationship between the determinants of FDI inflows and the moderating role of Democracy Index and Government Policy. Finally, the moderated mediation model will be tested as suggested by Igartua, J.-J., & Hayes, A. F. (2021). Many previous studies have attempted to quantify the impact of various macroeconomic factors on FDI like (Antwi, Mills & Zhao, 2013). The goal of this study is to look into a few factors that affect FD. The impact of five variables—inflation, trade openness, market capitalization, investment rate, and interest rate—on FD has been examined. In essence, it is an expansion of earlier literary works.

This study's stand point is more absorbed on how foreign direct investment is contributing to Financial Development and Economic Growth of Ghana. Despite numerous existing empirical studies that have analyzed the role of FDI in the development path of Ghana, this study is adding to the ongoing argument on the real role of FDI in the achievements of Sustainable Trade Openness, Stable Inflation rate, Cheap Labour and Capital, (Manni, U. H., & Afzal, M. N. I. (2012). This will enable us to identify which dimension of Financial Development leads to Economic Growth and which variable received more positive or negative impact from FDI both in the short and long run. The existing literature points out the complexity of the issues relating to FDI and its determinants. There is therefore the need for targeted policies

that will regulate the inflow of FDI into each of these to increase Financial Development and Economic Growth under consideration. Targeted FDI has also been argued as one of the ways by which countries would benefit from FDI inflow to propel economic growth. In view of this, the researcher has decided to investigate these variables to know the impact it has on the economic development of Ghana and its moderating and mediating effect.

#### **1.4 Purpose of the Study**

The factors that determine foreign direct investment (FDI) are important to policy-makers, investors, the banking industry and the public at large. The overall purposes of this study are to examine the determinants of FDI, the moderating and mediating effect in Ghana between the period ranging from 1960 to 2021.

##### **1.4.1 Objectives of the Study**

1. Identify the determinants of FDI in Ghana.
2. Identify the moderating and mediating effect of FDI in Ghana.
3. To suggest the possible ways of improving FDI in Ghana.

#### **1.5 Research Questions**

The research questions seek to find answers to the following;

1. What are the determinants of FDI in Ghana?
2. What are the moderating and mediating effects of FDI in Ghana?
3. What are the possible ways of improving FDI in Ghana?

## **1.7 Significance of the Study**

Foreign direct investment (FDI) is often considered by economists and policymakers as integral to economic growth – a cornerstone of modernization, income growth and employment. The research Work is to identify the strategies associated with foreign direct investment, compare the determinants, restrictions and challenges amongst the two countries under study. This study provides an empirical analysis on FDI's role in the achievements of sustainable human development targets in Africa. We examined the impact of FDI on the various dimensions of human development improvement in Ghana as well as its social influences on sustainable development achievement in Ghana. The result and findings of this research is beneficial in two key ways: The policy makers and governments: Since we found that some financial development indicators are positively impacted by FDI while others are negatively impacted, as such it is important for Ghana to deploy targeted foreign capital related policies and strategies. These targeted policies would help to maximise the benefits of FDI inflows and minimise the negative impacts.

Academics/Research: This current study has added to the ongoing discussions about the role played by FDI which are commonly focused on economic growth and Financial Development. We have therefore, opened another door for further research into the extent to which the determinants of FDI have an impact on Economic Growth and Financial Development. This study has thus, expanded the academic debate on whether or not Government Policy and Democracy Index is indeed positively impacted by FDI in Ghana, and whether or not that impact necessarily translates into the overall welfare of the people. The findings of this study pointed out that



Government Policy and Democracy Index is multidimensional and that the impact of FDI on one dimension may differ from another.

### **1.8 Limitations of the Study**

There were problems associated with the findings of this research work and these includes; The time use for the completion of the research work was limited and it was also combined with serious academic work. All the necessary information and document needed for the research work was not easily available for use. Furthermore, getting information from journals and the internet have little or no information relating to the research work for use.

### **1.9 Delimitation of the Study**

The main motivation for this study stemmed from the fact that one of Ghana's development goals or aims is to push the country to become a higher middle-income earning country by the year 2024 despite challenges encountered with the spread of COVID 19 which has brought about economic instability. This goal can only be realized if there is a high and sustainable rate of growth which can be aided by FDI in the country. Although studies have been conducted to explore the determinants of FDI, some of the core macroeconomic variables such as inflation, interest rate, currency exchange rate, political instability, Government policies, trade barriers, labour and capital amongst few have been mentioned to regulatory measures, which are unstable and have longstanding effects on FDI but the empirical evidence based on the moderation and mediation test shows that, FDI inflows can be positively and significantly influenced. Therefore, this study contributes to the literature by exploring the moderation and mediation effect of FDI and its determinants in Ghana

and also to see the methodology that can be used to clarify the relationship between FDI and other macroeconomic variables, know their relationships and to suggest some of the possible ways of dealing with these variables in order to attract more FDI in Ghana.

### **1.10 Organization of the Study**

The study was organized into five (5) chapters as outlined below:

Chapter one provides an introductory aspect of the whole study. It comprises the background of the study, statement of the research problem, objectives of the study, research questions, significance of the study, limitations, delimitation and organisation of the study. Chapter two mainly reviews the existing theoretical and empirical literature on Foreign Direct Investment (FDI) and some related subjects. It looks at two of the theories underpinning the study such as the internationalization theory and the eclectic paradigm by Dunning (1973, 1980, and 1988). The chapter also considers the empirical literature on the concept of Foreign Direct Investment, the trend of investment, Foreign Direct Investment and Economic Growth, Moderation and Mediation Effect and the benefits of FDI in Ghana. Chapter three centres on the method adopted in the study. It expounded the econometric models that are adopted by the study for analysing the data. It also discusses the data sources and variable description as well as their justification. The chapter equally advances the motive of the choice of the methods of data analysis used. Chapter Four is used for the analysis of the data and discussion of findings. It presents the descriptive statistics, the SPSS using Andrew Hayes moderation and mediation effect to analyse the results. The discussion of all the results were thoroughly done to address the objectives of the study. Chapter five focuses on summary, conclusions and policy recommendations.

The results displayed in the preceding section were summarised, various conclusions drawn and relevant policy recommendations made for stakeholders such as governments of Ghana and Africa in a whole. (Policy Makers).

## **CHAPTER TWO**

### **LITERATURE REVIEW**

#### **2.1 Introduction**

This chapter will give a review of the literature on the determinants that influence foreign direct investment in Ghana. Each of the research topics from the previous chapter will be examined separately under a subsection in this chapter, and each part will give empirical research on the determinants. The empirical review will concentrate on existing research on the numerous determinants and strategies that influence foreign direct investment and will attempt to focus on developing nations like Ghana. The study reviews the product life cycle developed by Vernon (1996) and eclectic theory developed by Dunning (1993/2000), which explain the nature and the institution of FDI in developing countries like Ghana.

#### **2.2 Concept Review**

This chapter provides a comprehensive criticism of related studies in the area of FDI in Ghana. The Chapter is structured into key concepts, theoretical and empirical review and the conceptual framework for the study. Studies on FDI have centered on the fundamental theories of FDI, the effect of various macroeconomic factors on FDI, the role economic integration plays in the direction of flow of FDI and the advantages and disadvantages of FDI in the host country (Inekwe, 2013; Yasin, 2005; Cheng and Kwan, 2000; Barros et al., 2014). Dunning's (1980) eclectic paradigm drew a framework to assess the reasons why and where foreign enterprises invest overseas. It further grouped the determinants of FDI into factors specific to particular industries and those that affect the entire economy. According to the theory, the determinants of FDI include the benefits of ownership, location and internalization that come to

multinational corporations (MNCs) from foreign companies. FDI takes place when these benefits exceed the associated costs. Studies have also shown that the inflow of foreign capital significantly increases domestic savings, leading to investment in the host country (Ajayi et al., 2016), improved technology transfers and spillovers (Carkovic and Levine, 2002). Since FDI is market-driven, it increases productivity in the sectors they go into, and the economy as a whole, because of increased competitiveness in the local market. This engenders an increase in demand for goods and services (Ajayi et al., 2016).

## **2.3 Theoretical Review**

### **2.3.1 The Product Life Cycle Hypothesis**

The product life cycle hypothesis Vernon (1996) developed a theory of trade that attempted to explain the tendency for the production of new goods to be concentrated in the developed countries early in the life of the product, but to move to other countries later on. He also emphasized in his work that a firm tends to become multinational at a certain stage in its growth. The early stages of product cycle, initial expansion into overseas markets is by means of exports. Because countries are at different stages of economic development, separated by “technology gap,” new markets are available to receive new products through the demonstration effect of richer countries.

Grossman and Helpman (1991) followed Krugman to model other formal Product Cycle. They assume that labour is needed for both manufacturing and R&D and therefore endogenized innovation and imitation rate. As results, the steady state fraction of goods produced by Ghana is endogenous and in addition to the Krugman

effect that an increase in the supply of labour in a country lowers the relative wage of labour for a given fraction of goods produced by the country, an increase of supply of labour has an additional 2 effect: it increases the fraction of goods produced by the country and raises the demand for labour in the manufacturing sector. Prior to the standardization of the production process, the firm requires close contacts with both its product market and its suppliers. However, once the product has evolved in a standard form and competing products have developed, the firm may decide to look overseas for the lower cost locations and new markets. Here, it is not that factor inputs may be less expensive abroad but that considered scale economies from longer production runs may be obtained through the allocation of component production and assembly to different plants, (Dunning, J. H. (2015)). The product cycle hypothesis is useful on several counts. First, it offers an explanation of the concentration of innovations in developed countries, and an integrated theory of trade and FDI. This theory helps to explain our argument that FDI inflows to any country depends on adequacy of some factors.

Thus, the theory intends to address the apparent inadequacy of the comparative advantage framework in explaining trade and foreign investment and to concentrate on the issues of timing of innovation, effects of economies of scale and, to a lesser extent, the role of uncertainty. Product life cycle theory also seeks to explain how a company will begin by exporting its products and eventually undertake FDI as the product moves through its life cycle. Put differently, the theory indicates that a country's export eventually becomes its import and there are three stages in the life of a product, which are new product stage, maturing product stage and standardized

product stage. With this, FDI occurs in the latter two stages (i.e., maturing product stage and standardized product stage).

### **2.3.2 Eclectic theory**

This theory of FDI is suggested by Dunning (1993/2000) and it is often referred to as the OLI paradigm. The O, L, and I in the paradigm refer to three groups of conditions that determine whether a firm, industry or company will be a source or a host of FDI. These groups are ownership advantages, locational considerations and internalization gains. Ownership advantages are those advantages that are specific to the firm. The firm enjoys 0.5% in 2020 and 5.4% in 2021. Trend analysis of FDI from 2008-2013 in the determinants of FDI in Ghana such advantages over domestic as well as foreign competitors, so that expansion in the domestic market may be an alternative strategy. Such advantages include advantages in technology and in management and organizational skills, size and diversification, access to or control over raw materials, the ability to call on the political support of their government, access to finance on favourable terms, perhaps in foreign as well as domestic markets and the ease with which the firm can shift production between two countries, (Edwards, C. D. 2001).

Locational considerations encompass such things as transport costs facing both finished products and raw materials, import restrictions, the ease with which the firm can operate in another country, the profitability with which the ownership advantages may be combined with factor endowments in other countries, the tax policies in both source and host countries, and political stability in the host country. Internalization gains concerns those factors which make it more profitable to carry out transactions within the firm than to rely on external markets. (Asiamah, M., Ofori, D., & Afful, J., 2019)

It is to be noted that such gains result from avoiding market imperfections (uncertainty, economies of scale, problem of control, the undesirability of providing full information to a prospective purchaser and so on). However, the existence of internalization gains obviously depends to some extent on the existence of ownership advantages. The essential element in the eclectic theory of FDI is that all the three types of conditions must be met before there will be FDI. However, the eclectic theory provides no clear indication as to the relationship between trade and FDI flows. Ownership advantages, by themselves, imply less trade. If the firm invests due to ownership advantages, it is in place of exporting. Internalization, as already discussed, may lead to increased trade flows as different divisions import and export to other divisions along the verticalized process line. Location often implies a negative relationship.

(Stone & Jeon 2000). If FDI is chosen due to locational advantages, it would imply a decrease in trade. This is because exports are replaced by closer production in the host country market. Locational advantages relating to natural resources, however, imply an increase in trade as FDI extracts those resources for home country use. Yet, again, location seen in a regional context may lead to enhanced trade as the host country is used as a base through which the multinational corporations serve the entire region. In a nutshell, the main idea of eclectic paradigm is that in order to invest abroad, a firm ought to have important advantages in terms of ownership, location and internalization. Ownership-specific advantages could be competitive in nature and firms could enjoy monopoly power, “possession of a bundle of scarce, unique and sustainable resources and capabilities, which essentially reflect the superior technical



efficiency of a particular firm relative to those of its competitors” (Dunning, 2000). Location-specific advantages are the “immobile, natural or created endowments” which become an incentive to invest in a particular country. The internalization advantage gives international investors incentives to engage in foreign investment activities rather than franchising or licensing. The positive spill overs of FDI to host nations and their economies according to the theory can come in the form of an increase in national income, savings, financial resources (significant means of funding), higher employment rate, new technology and managerial know-how, improvements in human resources, increases in competition and economic development (Chowdhury and Mavrotas, 2006; Moghaddam and Redzuan, 2012). This theory helps to explain our assertion that foreign investors will be interested in extending FDI if these initial conditions are in place which every developing country needs.

## **2.4 Empirical Review**

Effect of market size (GDP), real effective exchange rate, interest rate, and inflation on FDI. Based on panel data analysis utilizing static and dynamic models 60 JABES 26,1 for 20 countries (11 developed and 9 developing), spanning the period of 2004–2013, Saini and Singhania (2017) evaluated the probable determinants of FDI in developed and developing nations. They discovered that factors such as real GDP growth, per capita income, domestic inflation, commercial interest rates, trade openness, currency rates, and external debt all have a substantial impact on how foreign capital inflows vary over time. Xaypanya, P., Paweenawat, S.W., and Rangkakulnuwat, P. In a study on the factors affecting FDI investment in ASEAN

(2015), an ordinary least square (OLS) regression analysis was used in the first differencing panel data analysis.

Their findings suggested that the key predictors of FDI inflows are market size, trade openness, interest rate, and inflation. After looking at 38 African nations, Kandiero and Chitiga (2014) discovered a negative link between FDI inflows and real exchange rate appreciation. Ibrahim and Raji (2018) investigated the factors influencing FDI in India using multiple regression. They concluded that trade openness, inflation, and currency reserves are the main factors influencing FDI inflows. GDP and FDI were negatively impacted by inflation and the currency rate, while FDI was positively impacted by foreign exchange reserves, openness, and external indebtedness.

Singhania and Gupta (2011) used a dummy variable to account for FDI policy changes along with tracing the impact of macroeconomic variables like GDP, inflation rate, foreign trade, money supply growth and patents on FDI inflows in India. The study found that only GDP, inflation rate and scientific research had impact on FDI inflows. It was also found that the dummy variable for FDI policy changes done during 1995–1997 also had a significant effect on the inflows. Kyereboah-Coleman and Agyire-Tettey (2008) tried to examine the relationship between exchange rate volatility and FDI inflows in Ghana. Their empirical results found that volatile exchange rate has a negative effect on FDI inflows which means that volatility of exchange rate which is a measure of risky reduces the inflow of FDI into the country. They conclude that exchange rate plays an important role in attracting FDI.

Ozturk (2007) carried out an extensive review of FDI literature and found evidence that financial market regulations and stable banking systems are significant determinants for FDI. The World Investment Prospects Survey 2008–2010 (UNCTAD, 2008) reported that of 226 companies surveyed, 50 percent of respondents expressed concern about the risk of a major global economic downturn and financial instability. Thus, the health of the banking system within a stable economic platform in Ireland is seen as important for foreign investment.

Bende-Nabende (2002) in a study using data on 19 SSA countries over the 1970–2000 showed that the most dominant long-run determinants of FDI in SSA were market growth, a less restrictive export-orientation strategy, the FDI policy liberalization, real effective exchange rates, market size and openness of the economy. Bende-Nabende (2002) aims to provide an empirical assessment on the macro-locational determinants of FDI in SSA through the assessment of cointegration or rather long-run relationships between FDI and its determinants.

The study comprises 19 SSA countries over the 1970–2000 period and employs both individual country data and panel data analyses techniques. The empirical evidence suggests that the most dominant long-run determinants of FDI in SSA are market growth, a less restrictive export-orientation strategy and the FDI policy liberalization. These are followed by real effective exchange rates and market size. Bottom on the list is the openness of the economy. Thus, as far as SSA is concerned, their long-run FDI positions can be improved by improving their macroeconomic management, liberalizing their FDI regimes and broadening their export bases.

Lemi and Asefa (2003) address the relationship between economic and political uncertainty and FDI flows in African countries. The authors stress the following contributions of their paper: the first study in formally dealing with the role of political and 61 Determinants of FDI in Ghana economic uncertainty in affecting FDI in Africa using generalized autoregressive heteroscedastic model to generate economic uncertainty indicators. The study analyzed FDI from all source countries including Ghana and their responses to uncertainty. Whereas previous studies disregarded how the role of uncertainty differs from industrial groups and source countries, the period of analysis and sample countries were large enough for the result to be robust, which other studies did not consider. Schoeman further analyzed how government policy (mainly deficit and taxes) affects FDI through the estimation of a long-run cointegration equation for FDI in African countries. Where there is special importance, the deficit/GDP ratio, representing fiscal discipline and the relative tax burden on prospective investors in Africa.

In the context of Ghana, Harvey & Abor (2009) employed a logistic regression model to examine the determinants of FDI in Ghana using the manufacturing sector as a case study. Firm age, capital requirement in a sector, firm size, labour cost, and the level of technology were tested to establish their relationship with FDI inflows in Ghana. Applying the GMM estimation technique, Ramasamy & Yeung (2010) assessed the determinants of FDI in services of OECD countries taking into consideration the determinants of FDI. They employed panel data spanning 1980-2003. Their findings reported that strategic asset seeking (in terms of trade openness, political factors), market seeking (in terms of GDP and GDP growth), efficiency seeking (tax regime,

investment and incentives), interest rate and exchange rate) significantly influence FDI in Ghana and Singapore.

Zhang (2011) conducted a panel data regression analysis to find out which factors significantly determine the increasing pattern of FDI inflows in Asia. Zhang considered 14 sectors with sector level data covering the period 1990-2008, and the measurable variables were market size, wage rate, employment by sector, and the degree of state ownership. The findings presented low labour cost and market size as the key FDI determinants at sector level in Asia (Singapore) Anwar et al. (2013) assessed the determinants of FDI inflows in Pakistan's agricultural sector. GDP (market size), trade openness, and government debt are significant factors determining FDI inflows in Pakistan's agricultural sector. They further revealed that inflation and exchange rate are not significant in attracting FDI to the agricultural sector. Bhasin (2014) in identifying the major determinants of services sector FDI in India, analyzed different variables using ordinary least square regression analysis. The results indicated that India service sector FDI is determined by market size, labour efficiency, and trade openness.

Donwa et al. (2015) analyzed the determinants of FDI in to the oil and gas sector of Nigeria. The study reported that FDI in the oil and gas sector is influenced by domestic market size, trade openness, inflation, exchange rate, and economic policies. Polat & Payaslıoğlu (2015) examined the determinants of FDI inflows to Turkey using sector level data spanning 2007 to 2012. Evidence from the random and fixed effects analysis showed that turnover indices and investment incentives are positively related to sector level FDI whereas country risk index, prices, and taxes established a

negative relationship with FDI. According to Rashid & Razak (2016), FDI in agriculture sector reacts positively to market size and inflation, and negatively to poverty, exchange rate and infrastructure in selected OIC Countries (Malaysia, Oman and Brunei). The study however confirmed none of the variables as significant to FDI inflows. The results also revealed that strict environmental regulations do not attract investment.

In Nigeria, Arawomo & Apanisile (2018) assessed the key factors driving FDI in the telecommunication sector. Using annual sector level data from 1986-2014 with the Autoregressive Distributed Lag (ARDL) approach, the results found that market size and trade openness have positive significant effect on FDI. Inflation and real interest rate on the other hand showed a negative significant effect on telecommunication sector FDI. The literature review presented has shown that there exist numerous theories and scholarly works on the determinants of FDI at sector level.

However, there are few contradictory findings on the subject matter. This may be due to the different approaches employed by scholars. The review has also shown that there exists only one study (by Harvey & Abor, 2009) on the determinants of sector level FDI in Ghana. This therefore presents enough room for future research works to be done on the determinants of FDI at sector level in the Ghanaian context.

## **2.5 Conceptual Framework for the Study**

### **2.5.1 Determinants of Foreign Direct Investments**

#### **2.5.1 Trade Openness**

Trade openness is one measure of the extent to which a country is engaged in the global trading system. Trade openness is usually measured by the ratio between the sum of exports and import and gross domestic product (GDP). The theoretical link between trade openness and economic growth has been well documented in the literature (see for example Grossman & Helpman, 1990, 1991; Rivera-Batiz & Romer, 1991; Ben-David & Loewy 2000, 2003; Fenando Perera-Tallo, 2003). Generally speaking, the theoretical argument has been that trade liberalization and/or outer-oriented trade strategies, and hence trade openness is good for growth (see Krueger, 1998). The rationale behind this is that trade openness promotes growth since it enhances specialization and division of labour in production. This contributes to a more efficient allocation of domestic resources and to improve productivity as much as the trade potential of the economy. Some papers supporting this positive openness-growth nexus are Harrison (1996); Edwards (1998); Greenaway, Morgan, and Wright (2002); Lee, Ricci, and Rigobon (2004); Wacziarg and Welch (2008), Squalli and Wilson (2011); Sakyi, Villaverde, and Maza (2015).

Aside from the fact that liberalizing an economy causes trade to increase and hence growth, another important benefit that comes with it is the attraction of foreign capital (Liargovas & Skandalis, 2011), of which FDI has for years remained the largest component (see UNCTAD Statistics: Following this, the pioneering works by Bhagwati (1973, 1978, 1994), Brecher and Diaz-Alejandro (1977), and Brecher and Findlay (1983), among others, have emphasized the impact of FDI on economic

growth conditional on the level of trade openness. This phenomenon known as the Bhagwati hypothesis keeps that, *ceteris paribus*, the impact of FDI on economic growth tends to be greater under an export promotion trade strategy than to an import-substitution one. This is so because, as noted by Balasubramanyam, Salisu, and Sapsford (1996), export-promotion induced FDI compared to import-substitution one has two growth enhancing effects: (i) greater volume and (ii) greater efficiency effects.

Given this, FDI firms may invest more in countries pursuing export-promotion strategies to take advantage of exporting to other countries. In addition to the attraction of foreign capital and as supported by new economic growth approaches, the inflow of FDI to host countries is also accompanied by technology transfer, innovation, improved human capital, internationalization and widening of host countries' markets, increased production efficiency, employment creation, investment and capitalization, and research and development activities (see Bosworth & Collins, 1999; Agosin & Mayer, 2000; Harzing & Sorge, 2003; Javorcik, 2004). Through all these avenues, FDI is believed to have a positive influence on economic growth.

It is interesting to note that although the theoretical link between FDI, trade openness, and economic growth is well documented, recent empirical studies for developing countries often focus on testing the impact of (i) trade openness on economic growth (see e.g., Mani & Afzal, 2012; Asiedu, 2013; Hassen, Anis, Taha, and Yosra 2013; Sakyi et al., 2014, Karam & Zaki, 2015), and (ii) FDI on economic growth (see e.g., Adams, 2009; Gudaro, Chhapra, and Sheikh, 2010; Onakoya, 2012; Yalta, 2013; Hong, 2014; Nistor, 2014; Temiz & Gokmen, 2014) separately. Moreover, empirical



studies which consider both FDI and trade openness (see e.g., Liu, Burridge, and Sinclair, 2002; Oteng-Abayie & Frimpong, 2006; Naveed & Shabbir, 2006; Constant & Yaoxing, 2010; Adelowokan & Maku, 2013; Soi, Koskei, Buigut, and Kibert, 2013; Belloumi, 2014) do not specifically test the Bhagwati hypothesis – i.e., the interaction effect of both FDI and trade openness on economic growth.

#### **2.6.4 Low-Cost Labour**

Perhaps the most defining characteristic of the recent period of globalization has been the proliferation of global capital flows, including foreign direct investment (FDI). From the nineties to date, global FDI flows expanded more than eight-fold, 250 percent faster than world gross domestic product (GDP) and more than 60 percent faster than world trade growth over this period. Foreign affiliates of multinational corporations (MNCs) now employ 69 million workers and contribute US\$7 billion in value added (UNCTAD 2012), equivalent to more than 10 percent of all global output. Industrialized countries still account for the majority of inward FDI stock, but the recent rapid expansion of global FDI flows has been driven by particularly strong growth of investment in developing economies. FDI inflows to low- and middle-income countries (LMICs) expanded by 30 times in just 20 years (a compound annual growth rate of 17.5 percent), almost six times faster than they did in high-income countries. As a result, the average annual share of inward global FDI flows in non-Organisation for Economic Co-operation and Development (OECD) countries rose from 16 percent during sometime past to reach 45 percent in 2010. This trend has been supported by liberalization in global trade and investment regimes and advances in transport and communications. Together, these developments have allowed

multinational firms to expand their market reach, exploit resource opportunities, and offshore activities across global production networks.

### **2.6.6 Political Factors**

Two political factors have featured quite prominently in surveys on FDI. The Basi and El-Haddad 2018 studies found that political instability strongly influenced the investor's decision to go abroad, as did the host government's attitude to FDI. ASEAN, the third-largest economy in Asia presents a compelling investment destination for many investors (Kirk, Ractham and Abrahams, 2016). FDI inflows and exports have been important contributors to ASEAN's economy, which, over the past few years, has seen an inflow of FDI reaching US\$137 billion in 2017. This region has developed into mechanisms of great significance in strengthening and deepening regional cooperation, particularly in economic, social, and political areas. Although there were challenges resulting from uncertainties in the global economy, in 2017 for example, the total trade between ASEAN countries amounted to US\$ 813.5 billion, which accounted for 31.6% of ASEAN's total trade.

### **2.6.7 Government Policy**

Lack of predictability in terms of the government's respect for its own laws and regulations, lack of internal cohesion and the tendency towards inter- ministerial (or inter-agency) conflicts discourage foreign investors. In some cases, lack of reliable information on recent policy changes compounds the problem.

### **2.6.8 Economic Growth**

The impacts of economic growth on financial development are first mentioned in Robinson's study (2002). Accordingly, the favourable economic growth will create conditions to stimulate financial development; it means that the financial system will be scaled up. In other words, economic growth has a positive impact on financial development. In the same opinion, Goldsmith (2009) has also found positive impacts of economic growth on financial development in countries. In another study, Rajan and Zingales (2008) suggested that economic growth creates investment opportunities, stimulates credit demand, and thus has a positive impact on financial development. Not only that, Khan and Senhadji (2003) also found positive impacts of economic growth on financial development in developing countries.

Recently, Guerra (2017) argued that economic growth has a positive impact on development in Mexico. However, some views that economic growth may have a negative impact on financial development. Accordingly, when economic growth is too high, the economy will be potentially risky and unsustainable, which can lead to negative impacts on financial development. Because, as the economy grows and the financial system grows, the banks will increase credit supply and can control poor credit quality, leading to the risk of the financial system suffered from crisis and recession in the future. In this view, Ram's (2009), Naceur et al. (2014) are included. Indeed, Ram (2009) analyzed the data from 95 countries and suggested that a negative relationship exists between economic growth and financial development. Meanwhile, Naceur et al. (2014) argued that economic growth has a negative impact on the development of the banking system.

### **2.6.9 Trade Openness**

Suggesting that it was not an important determinant of financial development for African countries. Bekaert et al. (2006) stressed that market openness brings down volatility through enhancing risk diversification process. Trade openness, one of the main aspects influencing globalization today is believed to contribute to financial development. Rajan and Zingales (2003) argued that unconstrained trade combined with capital flows served as an incentive for industrial and financial incumbents to push for financial development. This was because government's role in the financial sector declined due to unconstrained openness and industrial and financial incumbents would turn to finance from the open foreign markets to fund their projects. Incumbents would push for financial development because new opportunities emerged due to trade and financial openness could generate profits that compensated for the negative impact of increased competition. They concluded that trade openness benefits financial development positively.

Baltagi, Demetriades and Law (2007), using panel data techniques and annual data, proved that trade openness and financial openness together with economic institutions determined the financial development dissimilarity across countries. These results showed that countries that were least open could benefit greatly in terms of financial development if they opened either their trade or capital accounts. These countries could have even had greater benefits if they opened both, though opening only one could still result in banking sector development. On the other hand, countries that were most open benefited the least from added openness. Results from a study conducted by Kim, Lin and Suen (2010) consisting of 88 countries over the period 1960–2005 suggested that trade openness did play a critical role in determining the

level of financial development. They found positive long-run and negative short-run effects of trade openness on financial development indicating that trade openness eventually contributed to financial development.

However, when the countries were grouped in terms of income and inflation levels, the findings were consistent only in low-income or high inflation economies. Law and Habibullah (2009) provided evidence that shed light on the influence of institutional quality, trade openness and financial liberalisation on financial market development, using data from 27 economies (the G-7, Europe, East Asia and Latin America) during 1980-2001. The dynamic panel data analysis results demonstrated that real income per capita and institutional quality were statistically significant determinants of banking sector development and capital market development. The trade openness, however, was more prominent in promoting capital market development. In terms of financial liberalisation, the empirical results suggested that domestic financial sector reforms tended to promote banking sector development, whereas stock market liberalisation was potent in delivering stock market development.

Nevertheless, the financial liberalisation programmes were more responsive in developed economies. Mendoza et al. (2008) suggested that global financial imbalances could be the outcome of financial integration when countries differed in financial markets development. Countries with more advanced financial markets accumulated foreign liabilities in a gradual, long lasting process. Differences in financial development also affected the composition of foreign portfolios in that countries with negative net foreign asset positions maintained positive net holdings of non-diversifiable equity and FDI.

The far-reaching reforms that integrated capital markets during the 1980s and 1990s were based on the benefits that financial globalization could give in terms of efficient resource allocation and risk-sharing across countries. But these arguments generally abstracted from the fact that financial systems differed substantially across countries, and those differences had remained largely unaltered despite the globalization of capital markets. In short, financial integration was a global phenomenon, but financial development was not. The countries with different financial markets characteristics chose different compositions of foreign portfolios. Opening domestic markets to foreign goods, known as trade liberalization, can be a key driver of financial development. It can weaken the political power of entrenched business interests that might otherwise block institutional reforms, a point that is emphatically made by Rajan and Zingales (2004) in their book *Saving Capitalism from the Capitalists*. Trade liberalization, which promotes a more competitive environment, lowers the revenue of entrenched firms so that they need greater access to external sources of capital.

Thus, they become more likely to support reforms that promote a deeper and more efficient financial system. This is agreement with research findings that a deeper financial sector positively was associated with greater trade openness (Rajan & Zingales, 2003; Svaleryd & Vlachos, 2002). Free trade also promotes financial deepening by reducing corruption. High tariffs breed corruption because importers have incentives to pay customs officials to avoid tariffs by smuggling in goods. Countries that restrict international trade are found to be more corrupt (Ades & Di Tella, 2004).

Thus facilitating production for overseas markets creates a greater need for a well-functioning financial system. The argument by the World Bank (2001) and Goldberg (2004) gave a case of effects of trade globalization on financial reform in China. As Chinese enterprises increasingly entered international markets, they needed a better financial system that could ensure that the allocation of their high domestic savings was done efficiently and responsive to market developments. Although it had taken time, globalization is still helping to generate the demand for an improved financial system, which is driving the reform process. Overall, following the literature trade openness is represented by the value of exports and imports as a percentage of GDP.

## **2.7 Conclusion**

In sum, it is evident from the above that, if Ghana is to become a major FDI destination like Singapore, then the governments need to re-examine their attitudes to private investors in general, in particular revamping the strategies used in promoting FDI in both countries. Fiscal, monetary and customs regulations must be transparent and capable of implementation with, relative ease. Above all, the predictability of government policies and the dependability of existing legal frameworks are crucial in enhancing a country's image in the eyes of the foreign investors.

## **CHAPTER THREE**

### **RESEARCH METHODOLOGY**

#### **3.1 Introduction**

This chapter examines the method used by the researcher in data collection and technique used for gathering and processing data to achieve the research objectives. The chapter is presented in the following order; research design, population and sample size, sampling and data collection technique used.

#### **3.2 Variables Used**

In this study, the researcher used the moderating and the mediating variables.

##### **3.2.1 Moderating Variables**

A moderating variable is a type of variable that affects the relationship between a dependent variable and an independent variable and changes its direction or strength. Moderation occurs when the effect of an independent variable on a dependent variable varies according to the level of a third variable, termed a moderator variable, which interacts with the independent variable (Edwards & Lambert, 2007). According to Lai (2013), a moderator is an independent variable that affects the strength and or direction of the connotation between another independent and an outcome variable. In this research, two moderating variables are used. There are Government Policy and Democratic index. Government policy is a rule or principle that hopefully better guides decisions resulting in positive outcome that enhances the community or unit. Furthermore, Government Policy describes a course of action creating a starting point for change. Government policy is a rule or principle that hopefully better guides decisions, resulting in positive outcomes that enhance the community or unit.



Government policies contain the reasons things are to be done in a certain way and why. Governments establish many policies that guide businesses. The government can make changes in fiscal policy which leads to changes in taxes, trade, subsidies, regulations, interest rates, licencing and more. Businesses should be flexible enough to respond to changing rules and policies. The government policies are applicable at all the levels from the national level to local levels such as states and municipalities, and these local authorities have their own sets of rules. There are few international treaties which can influence the way companies to do business.

Democracy Index is an index compiled by the Economist Intelligence Unit (EIU), the research division of the Economist Group, a UK-based private company which publishes the weekly newspaper The Economist. Akin to a Human Development Index but centrally concerned with political institutions and freedoms, the index attempts to measure the state of democracy in 167 countries and territories, of which 166 are sovereign states and 164 are UN member states. The index is based on 60 indicators grouped in five different categories, measuring pluralism, civil liberties and political culture. In addition to a numeric score and a ranking, the index categorizes each country into one of four regime types: full democracies, flawed democracies, hybrid regimes, and authoritarian regimes. The first Democracy Index report was published in 2006. Reports were published every two years until 2010, and annually thereafter.

### **3.2.2 Mediating Variables**

A mediator variable is the variable that causes mediation in the dependent and the independent variables. In other words, it explains the relationship between the

dependent variable and the independent variable. The process of complete mediation is defined as the complete intervention caused by the mediator variable. This results in the initial variable no longer affecting the outcome variable. The process of partial mediation is defined as the partial intervention. The mediation caused by the mediator variable is developed as a mediation model. This model that develops due to the mediation is a causal model. In other words, this means that the mediator variable has been assumed to cause the affect in the outcome variable and not vice versa. Mackinnon, D. (2015) explains mediating variable as an intermediate in the casual sequence relating an independent variable to a dependent variable; such that the independent variable causes the mediating variable that causes the dependent variable. The mediating variables underlying the relationship between the independent and the dependent variables are Trade openness, Inflation rate, Labour and Capital.

### **3.2.2.1 Trade Openness**

Trade Openness is one measure of the extent to which a country is engaged in the global trading system. Trade openness is usually measured by the ratio between the sum of exports and imports and gross domestic product (GDP).

### **3.2.2.2 Inflation**

Inflation measured by consumer price index (CPI) is defined as the change in the prices of a basket of goods and services that are typically purchased by specific groups of households. Inflation is measured in terms of the annual growth rate and in index, 2015 base year with a breakdown for food, energy and total excluding food and energy. Inflation measures the erosion of living standards. A consumer price index is estimated as a series of summary measures of the period-to-period proportional

change in the prices of a fixed set of consumer goods and services of constant quantity and characteristics, acquired, used or paid for by the reference population. Each summary measure is constructed as a weighted average of a large number of elementary aggregate indices. Each of the elementary aggregate indices is estimated using a sample of prices for a defined set of goods and services obtained in, or by residents of, a specific region from a given set of outlets or other sources of consumption goods and services.

### **3.2.2.3 Labour**

Labour force as an element in the process of production and a key component in FDI. The Labour force comprises all those who work for gain, whether as employees, employers, or as self-employed, and it includes the unemployed who are seeking work. Labour economics involves the study of the factors affecting the efficiency of these workers, their deployment between different industries and occupations, and the determination of their pay.

### **3.2.2.4 Capital**

Capital formation is the net capital accumulation during an accounting period for a particular country. The term refers to additions of capital goods, such as equipment, tools, transportation assets, and electricity during an accounting period for a particular country. Generally, the higher the capital formation of an economy, the faster an economy can grow its aggregate income. To accumulate additional capital, a country needs to generate savings and investments from household savings or based on government policy. When investors purchase stocks and bonds issued by corporations, the firms can put the capital at risk to increase production and create

new innovations for consumers. The World Bank tracks gross capital formation, which it defines as outlays on additions to fixed assets, plus the net change in inventories. Flows of FDI comprise capital provided (either directly or through other related enterprises) by a foreign direct investor to an enterprise, or capital received from an investing enterprise by a foreign direct investor.

### **3.3 Model Specification**

Model specification is the process of determining which variables to include and exclude from a model. To start, we assume that variable E causes variable F in a linear causal relationship. G stands for a moderator variable, which modifies the causal relationship's strength. Therefore, we would conclude that gender (G) moderates the causal effect of psychotherapy (E) on depression. For example, psychotherapy may lessen depression more for males than for women (F). The majority of moderator analyses use a regression coefficient to determine the causal connection between E and F. A moderator can augment or even reverse the effect of a causal effect, despite the fact that traditionally, moderation indicates a lessening of that effect. Complete moderation would happen if the causal relationship between X and Y vanished when M reached a specific value.

Kraemer and colleagues (2001; 2002) used a different approach to defining and testing of moderators. Frazier, Tix, and Barron (2004) also provide a very good introduction to the topic of moderation and Marsh, Hau, Wen, Nagengast, and Morin. (2011) for a more detailed discussion of the topic. In that it asks how widespread the causal influence is, a moderation analysis is a test of external validity. The measurement of the E to F causal link for various values of G is a crucial component

of moderation. The effect of E on F for a specific value of G is referred to as the "simple effect E on F." Choosing the moderator variable mostly depends on the researcher's area of interest. If one were a gender researcher for the prior case, where gender moderates the effect of psychotherapy, one may state that psychotherapy moderates the influence of gender. The association between E and G should be absent if E is a manipulated variable, according to theory. A correlation between E and G is possible if E is not random. In contrast to mediation, E and G don't need to be correlated, and that correlation doesn't have a unique meaning. There may be collinearity difficulties with EG if E and G are too closely correlated with one another, though, if E and G are too highly associated with one another.

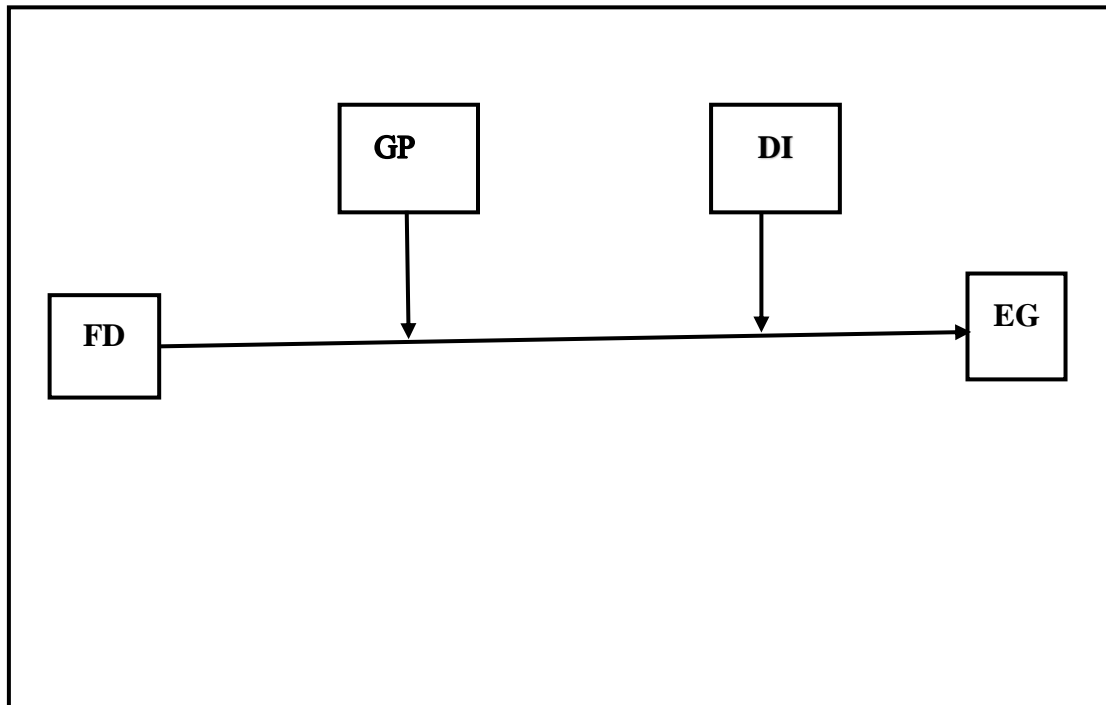
In theory, E and G shouldn't be related if E is a controlled variable. If E is not random, it might be associated with G. In contrast to mediation, there is no requirement that E and G be correlated, and that connection does not have a unique meaning. However, if E and G have an excessively high correlation, there may be collinearity problems if EG has an excessively high correlation with E and G. In general, when X and M interact to explain Y, moderator effects are indicated. The estimated value of the following multiple regression equation is:

$$\mathbf{F = i + aE + bG + cEG + E \quad (1)}$$

The moderating effect is quantified by the interaction between E and G, or coefficient c. Keep in mind that path a, when G = 0, measures the simple effect of E, also known as the main effect of E. The product name EG does not always operationalize the test of moderation, as will be observed. Given Equation 1, E's impact on F is represented by a + cG. The value of G so determines how E affects F. When G equals -a/c, which

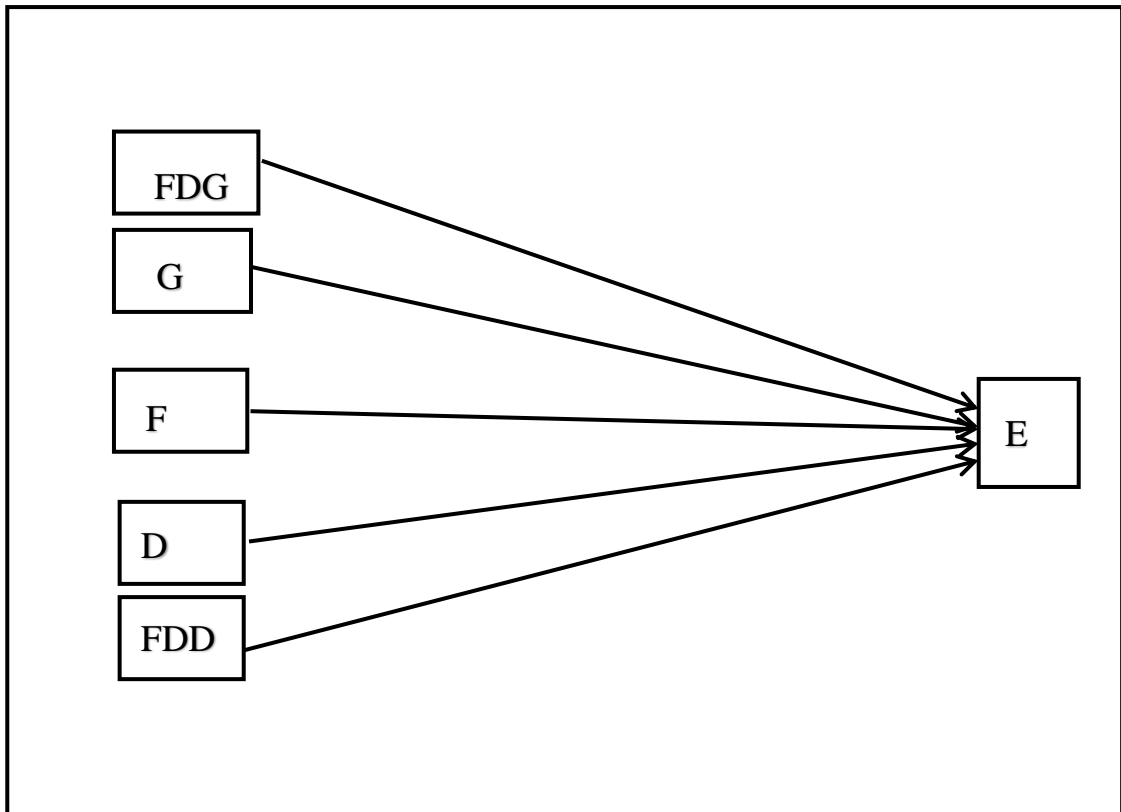
may or may not be a reasonable value for G, it is noted that the influence of E on F equals zero.

### 3.4 Model 1



**Figure 3.1 Conceptual Diagram of Moderation Effect**

In figure 3.1 of the conceptual diagram, the Economic Growth (EG) is the dependent variable, Financial Development (FD) is the independent variable, and Government Policy (GP) and the Democratic Index are the two moderating variables (DI). The purpose of this diagram is to investigate if the effect of financial development on economic growth is moderated by Government policy and democratic index.



**Figure 3.2 Statistical Diagram of moderating effect**

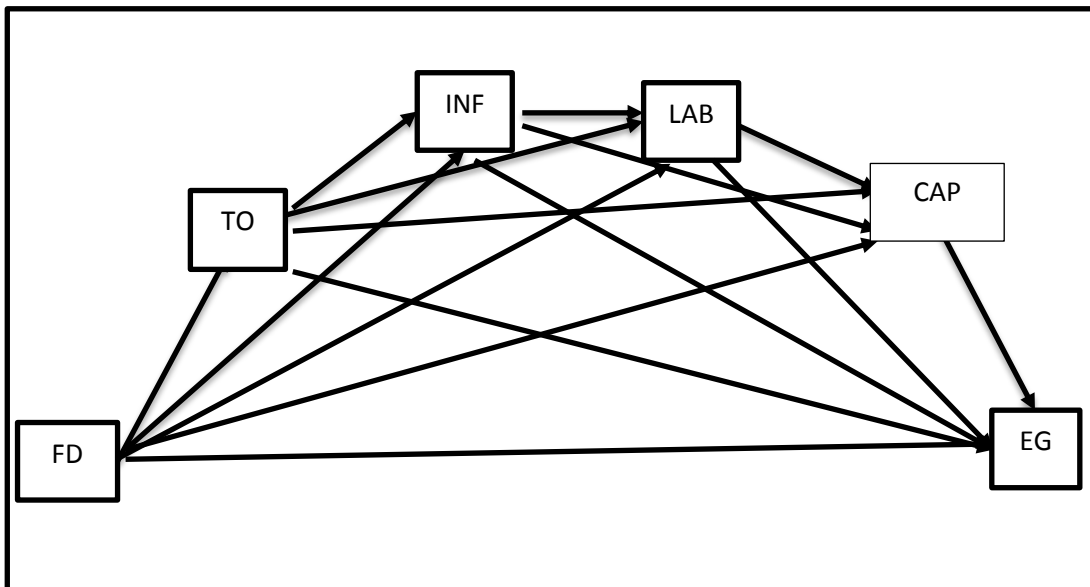
Conditional effect of FD on EG =  $b_1 + b_4GP + b_5DI$

In Figure 3.2, EG represents Economic Growth, FDGP represents Financial Development and Government Policy, DI is Democratic Index and FDDI represents Financial Development on Democracy Index which equals the moderating variables. It is a linear model of moderation of the effect of FD because the conditional effect of FD on EG changes by a constant amount  $b_5$  as DI changes by a constant amount. The conditional effect of FD estimates the difference in EG between two cases that differ by one unit on FD but with a common value of DI. Because DI is in the function defining the conditional effect of FD, FD's effect will depend on that common value of DI unless  $b_3$  is exactly zero. When  $b_5$  is zero, then FD's effect does not vary across values of DI, at least not in a linear fashion. Any value of  $b_3$  different from zero

means that FD's effect depends on DI. Thus, an inference about  $b_5$  is used to test whether linearly moderates FD's effect on EG.

### 3.5 Model 2

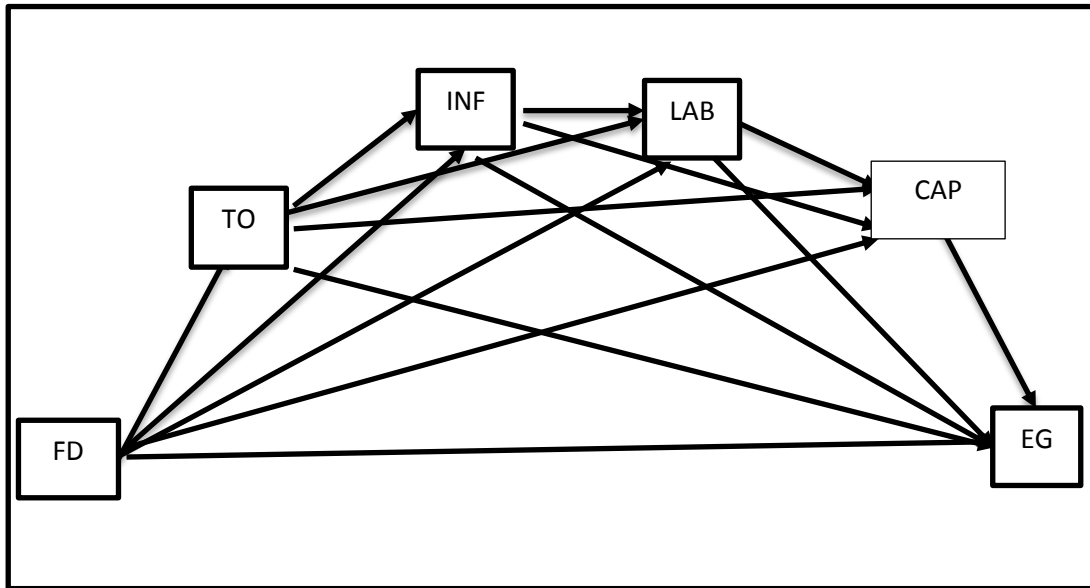
Mediation effect refers to the effect of variables that mediate the relationship between various independent variables and the outcome variable. Through the use of a mediator variable, mediation analysis divides the overall exposure-outcome relationship into a direct effect and an indirect effect.



**Figure 3.3 Conceptual Diagram of Mediation Effect**

In Figure 3.3, EG represents Economic Growth, FD represents Financial Development, TO is Trade Openness, Inf is Inflation rate, Lab is Labour and Cap is Capital.



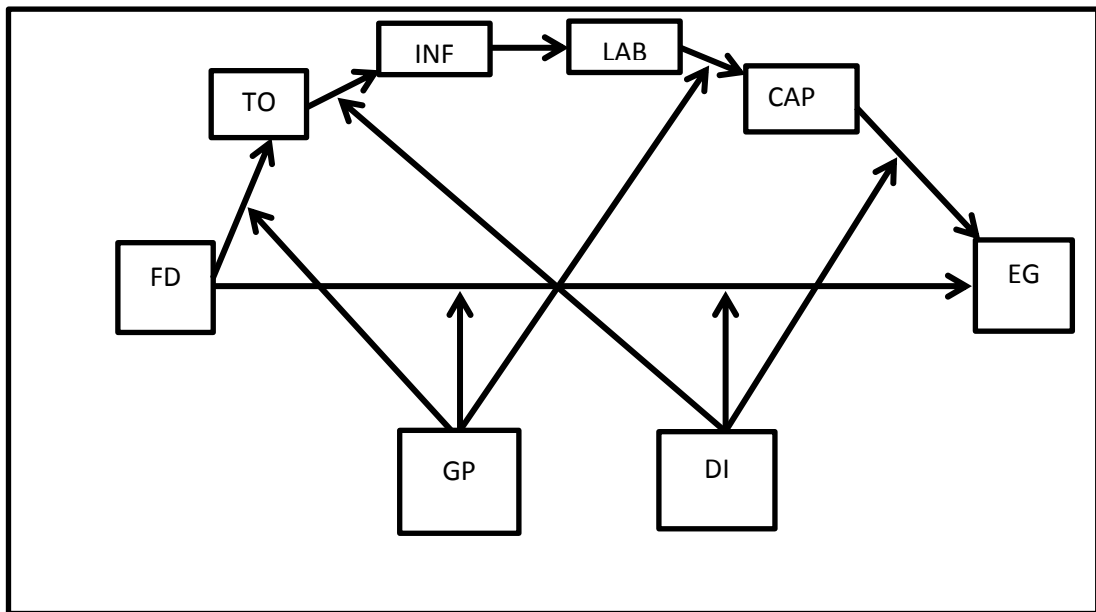


**Figure 3.4 Statistical Diagram of Mediating Effect**

The hypothetical causal model tested by mediation analysis involves one variable E having an impact on a second variable G, which then has an impact on a third variable F. Since they frequently represent the method by which an effect happens, mediators are also referred to as intermediary variables because they explain the how or why of a relationship between two other variables that is normally well-established. This is referred to as an indirect influence at times. People with higher wages, for instance, typically live longer, but this effect can be attributed to the mediating effect of access to better healthcare. Two methods of conducting this type of analysis were used:

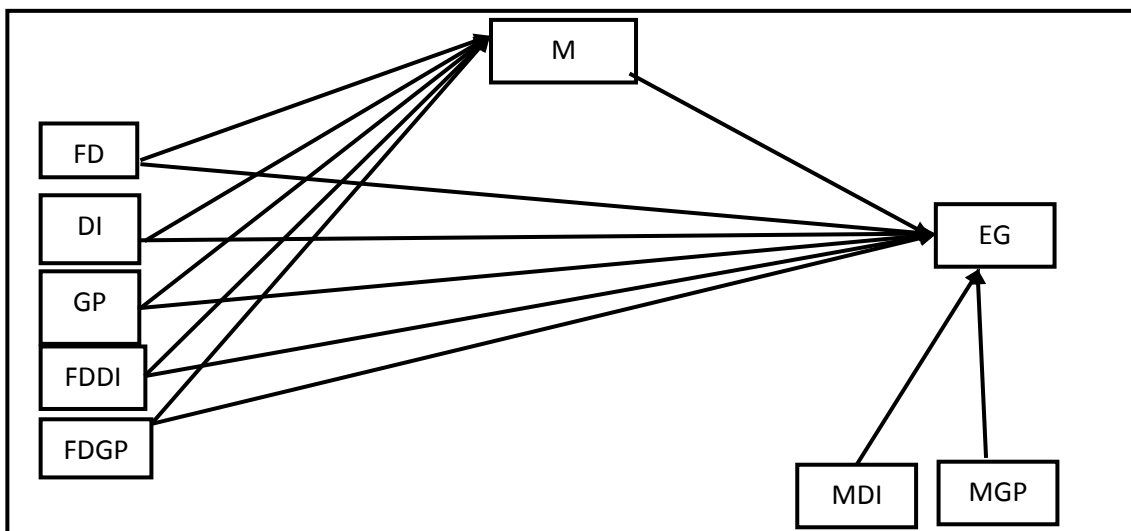
Baron & Kenny's (1986) 4 – step indirect effect method and the more recent mediation package (Tingley, Yamamoto, Keele, & Imai, 2014). You can examine the impact of a third variable, Z, on the connection between variables E and F using the moderation analysis technique. Moderation examines when or how an effect occurs rather than assessing a correlation between these other factors. A relationship's nature can be strengthened, weakened, or reversed through moderators. For example, academic self – efficacy (Confidence in own's ability to do well in school) moderates

the relationship between task importance and the amount of test anxiety a student feels (Nie, Lau, & Liao, 2011.)



**Figure 3.5 Conceptual Diagram of Moderating and Mediating Effect**

FD represents Financial Development, EG is Economic Growth, GP represents Government Policy and M represents the Mediation variables and DI is the Democracy Index



**Figure 3.6 Statistical Diagram of Moderating and Mediating Effect**

### **3.6 Data Sources**

The researcher used secondary data which was obtained from the World Bank Data Report. The data spans from 1960 to 2021 in Moderating and Mediating.

### **3.7 Justification of the Selected**

The use of moderator and mediator variable plays a useful role for the researcher, in terms of specifying the research and in terms of emphasizing on the relationships and influences of third factors or parties. The researcher uses mediating variable to emphasize on the relationship which two variables have. It helps in strengthening the understanding of the relationships and causal effects.

Similarly, researchers use moderation variables to show conditions or to specify the factors which may influence the research outcomes and variables. They make the research strong, in which the purpose does not remain to commonly and generally studying the variables and their relationships. Whereas, it helps researchers in incorporating various aspects within the research, different from the already discussed aspects.

## CHAPTER FOUR

### RESULTS AND DISCUSSIONS

#### 4.0 Introduction

#### 4.1 Descriptive Statistics.

The study first conducted the descriptive statistics of the relevant variables involved in the study which is presented in Model 4.2.

The chapter also gives a discussion of data analysis, interpretations and presentation.

The study of quantitative data was done using inferential and descriptive statistics.

Data was presented through frequency tables, percentages, and frequency distributions to understand and interpret the findings easily. The descriptive statistics show the main features of data points as indicated below as;

#### 4.2. Model 1

Run MATRIX procedure:

Model : 2  
 Y : GDP  
 X : FD  
 W : Democracy  
 Z : GP

Sample  
 Size: 23

\*\*\*\*\*  
 \*\*\*\*\*

OUTCOME VARIABLE:  
 GDP

Model Summary						
	R	R-sq	MSE	F (HC3)	df1	df2
p	.4754	.2260	6.8801	1.5899	5.0000	17.0000
	.2162					

Model						
	coeff	se (HC3)	t	p	LLCI	
ULCI						
constant	5.4968	14.4522	.3803	.7084	-24.9973	
	35.9909					
FD	.0695	1.2437	.0559	.9561	-2.5546	
	2.6936					

Democrac	2.6772	12.6724	.2113	.8352	-24.0614
29.4158					
Int_1	-.0427	1.1538	-.0370	.9709	-2.4772
2.3918					
GP	.0527	.2390	.2205	.8281	-.4515
.5569					
Int_2	-.0052	.0198	-.2648	.7944	-.0469
.0365					

Product terms key:

Int_1	:	FD	x	Democrac
Int_2	:	FD	x	GP

Test(s) of highest order unconditional interaction(s):

	R2-chng	F(HC3)	df1	df2	p
X*W	.0002	.0014	1.0000	17.0000	.9709
X*Z	.0055	.0701	1.0000	17.0000	.7944
BOTH	.0119	.1042	2.0000	17.0000	.9016

-----

Focal predict:	FD	(X)
Mod var:	Democrac	(W)
Mod var:	GP	(Z)

#### 4.2.1 Interpretation of Analysis

The Interaction term 1 was statistically insignificant ( $b = -0.0427$ ,  $se = 1.538$ ,  $p > 0.05$ ) in our model, indicating that Democracy Index was an insignificant moderator of the effect positive Financial Development on Economic Growth. This means government policy such as increase in government spending or reduction in taxes has marginal or small effect on Economic Growth. However, Interaction term 2 was statistically insignificant ( $b = -0.0052$ ,  $se = 0.0198$ ,  $p > 0.05$ ) in our model, indicating that Government Policy was insignificant moderator of the effect positive on Financial Development on Economic Growth. This means that civil liberties and fundamental political freedoms impact on economic growth is minimal as argued by (BenYishay, A., & Betancourt, R. R. (2010) in their research Civil liberties and economic development. *Journal of Institutional Economics*, 6(3), 281-304. At low level of Government Policy (GP) (24.3079) and GP (-0.3910), the effect of Financial Development on Economic Growth is insignificant. Government Policy (GP) Co-efficient is  $-0.0052$  which is negatively moderating the relationship between

Financial Development and Economic Growth. This means that the higher the Government Policy, the weaker the relationship between FD and Economic Growth. Co-efficient is  $- 0.0052$  which is negatively moderating the relationship between Financial Development and Economic Growth. This means that the higher the Government Policy, the weaker the relationship between Financial Development and Economic Growth.

### 4.3 Model 2

Run MATRIX procedure:

```

Model   : 6
  Y     : GDP
  X     : FD
  M1    : Trade
  M2    : Inflation
  M3    : Labour
  M4    : Capita

```

```

Sample
Size: 31

```

```

*****
*****

```

```

OUTCOME VARIABLE:
  Trade

```

```

Model Summary
      R      R-sq      MSE      F(HC3)      df1      df2
p      .4253      .1809      323.0890      10.5988      1.0000      29.0000
.0029

```

```

Model
      coeff      se(HC3)      t      p      LLCI
ULCI
constant      52.2256      7.2282      7.2253      .0000      37.4419
67.0093
FD      1.7981      .5523      3.2556      .0029      .6685
2.9277

```

```

*****
*****

```

OUTCOME VARIABLE:  
Inflatio

Model Summary

	R	R-sq	MSE	F(HC3)	df1	df2
p	.3141	.0987	222.1329	2.7165	2.0000	28.0000
	.0835					

Model

	coeff	se(HC3)	t	p	LLCI	
ULCI						
constant	33.5639	10.3625	3.2390	.0031	12.3367	
54.7910						
FD	-1.0956	.5022	-2.1816	.0377	-2.1244	-
.0668						
Trade	.0430	.1300	.3308	.7433	-.2234	
.3094						

Test(s) of X by M interaction:

	F(HC3)	df1	df2	p
M1*X	1.5165	1.0000	27.0000	.2288

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:  
Labour

Model Summary

	R	R-sq	MSE	F(HC3)	df1	df2
p	.9042	.8177	.0101	52.4452	3.0000	27.0000
	.0000					

Model

	coeff	se(HC3)	t	p	LLCI	
ULCI						
constant	15.7509	.1018	154.7611	.0000	15.5421	
15.9597						
FD	.0481	.0039	12.3945	.0000	.0401	
.0561						
Trade	-.0038	.0011	-3.4547	.0018	-.0061	-
.0015						
Inflatio	.0000	.0014	.0006	.9995	-.0028	
.0028						

Test(s) of X by M interaction:

	F(HC3)	df1	df2	p
M1*X	8.9608	1.0000	26.0000	.0060
M2*X	.7603	1.0000	26.0000	.3912

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:

Capita

Model Summary

	R	R-sq	MSE	F(HC3)	df1	df2
p	.5312	.2822	18.8583	4.8293	4.0000	26.0000
	.0048					

Model

	coeff	se(HC3)	t	p	LLCI
ULCI					
constant	-185.6608	112.1583	-1.6553	.1099	-416.2130
44.8914					
FD	-.5441	.4486	-1.2129	.2361	-1.4661
.3780					
Trade	.1470	.0479	3.0711	.0049	.0486
.2453					
Inflatio	.0752	.0544	1.3837	.1782	-.0365
.1870					
Labour	12.4987	7.1300	1.7530	.0914	-2.1578
27.1551					

Test(s) of X by M interaction:

	F(HC3)	df1	df2	p
M1*X	2.1380	1.0000	25.0000	.1561
M2*X	.1300	1.0000	25.0000	.7215
M3*X	.2193	1.0000	25.0000	.6436

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:

GDP

Model Summary

	R	R-sq	MSE	F(HC3)	df1	df2
p	.6724	.4521	4.2327	2.3827	5.0000	25.0000
	.0673					

Model

	coeff	se(HC3)	t	p	LLCI
ULCI					
constant	-73.0481	72.4019	-1.0089	.3227	-222.1679
76.0717					
FD	-.0594	.2162	-.2747	.7858	-.5047
.3859					
Trade	.0702	.0324	2.1641	.0402	.0034
.1370					
Inflatio	.0397	.0236	1.6850	.1044	-.0088
.0882					
Labour	5.0180	4.6949	1.0688	.2954	-4.6517
14.6878					
Capita	-.3618	.1298	-2.7878	.0100	-.6291
.0945					

Test(s) of X by M interaction:

	F(HC3)	df1	df2	p
M1*X	1.9699	1.0000	24.0000	.1733



M2*X	.0003	1.0000	24.0000	.9864
M3*X	1.0646	1.0000	24.0000	.3125
M4*X	.6960	1.0000	24.0000	.4124

\*\*\*\*\* TOTAL EFFECT MODEL  
\*\*\*\*\*

OUTCOME VARIABLE:  
GDP

Model Summary

	R	R-sq	MSE	F(HC3)	df1	df2
p	.3200	.1024	5.9772	3.1054	1.0000	29.0000
	.0886					

Model

	coeff	se(HC3)	t	p	LLCI
ULCI					
constant	3.1727	.8960	3.5408	.0014	1.3400
5.0054					
FD	.1758	.0998	1.7622	.0886	-.0282
.3798					

\*\*\*\*\* TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y  
\*\*\*\*\*

Total effect of X on Y

	Effect	se(HC3)	t	p	LLCI	ULCI
c_ps	c_cs					
.1758	.0998	1.7622	.0886	-.0282	.3798	
.0693	.3200					

Direct effect of X on Y

	Effect	se(HC3)	t	p	LLCI	ULCI
c'_ps	c'_cs					
-.0594	.2162	-.2747	.7858	-.5047	.3859	
-.0234	-.1081					

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
TOTAL	.2352	.2318	-.1531	.8066
Ind1	.1262	.0652	.0122	.2647
Ind2	-.0435	.0416	-.0993	.0833
Ind3	.2413	.2215	-.1500	.7822
Ind4	.1969	.1893	-.0858	.6497
Ind5	.0031	.0105	-.0234	.0189
Ind6	-.0343	.0296	-.0997	.0248
Ind7	-.0956	.0558	-.2257	-.0096
Ind8	.0000	.0148	-.0237	.0344
Ind9	.0298	.0299	-.0096	.1031
Ind10	-.2175	.1565	-.5833	.0033
Ind11	.0000	.0031	-.0070	.0039
Ind12	-.0021	.0097	-.0249	.0137
Ind13	.0309	.0243	-.0012	.0919
Ind14	.0000	.0141	-.0344	.0162
Ind15	.0000	.0032	-.0030	.0069

Completely standardized indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
TOTAL	.4282	.4497	-.2832	1.5898
Ind1	.2297	.1190	.0236	.4868
Ind2	-.0792	.0756	-.1693	.1577
Ind3	.4393	.4500	-.2814	1.5791
Ind4	.3584	.3202	-.1840	1.0712
Ind5	.0056	.0199	-.0475	.0355
Ind6	-.0625	.0593	-.1990	.0471
Ind7	-.1741	.0961	-.3924	-.0174
Ind8	.0000	.0280	-.0487	.0651
Ind9	.0543	.0497	-.0177	.1716
Ind10	-.3959	.2678	-1.0238	.0060
Ind11	.0000	.0062	-.0139	.0074
Ind12	-.0038	.0172	-.0448	.0250
Ind13	.0563	.0396	-.0022	.1508
Ind14	.0000	.0240	-.0577	.0302
Ind15	.0000	.0056	-.0056	.0122

Indirect effect key:

Ind1	FD	->	Trade	->	GDP		
Ind2	FD	->	Inflation	->	GDP		
Ind3	FD	->	Labour	->	GDP		
Ind4	FD	->	Capita	->	GDP		
Ind5	FD	->	Trade	->	Inflation	->	GDP
Ind6	FD	->	Trade	->	Labour	->	GDP
Ind7	FD	->	Trade	->	Capita	->	GDP
Ind8	FD	->	Inflation	->	Labour	->	GDP
Ind9	FD	->	Inflation	->	Capita	->	GDP
Ind10	FD	->	Labour	->	Capita	->	GDP
Ind11	FD	->	Trade	->	Inflation	->	Labour
	->		GDP				
Ind12	FD	->	Trade	->	Inflation	->	Capita
	->		GDP				
Ind13	FD	->	Trade	->	Labour	->	Capita
	->		GDP				
Ind14	FD	->	Inflation	->	Labour	->	Capita
	->		GDP				
Ind15	FD	->	Trade	->	Inflation	->	Labour
	->		Capita	->	GDP		

\*\*\*\*\* ANALYSIS NOTES AND ERRORS \*\*\*\*\*

### 4.3.1 Interpretation of Analysis

Financial Development has a significant impact on Trade Openness ( $b = 1.7981$ ,  $t = 3.2556$ ,  $P < 0.05$ ). The empirical results indicate that financial development affects trade openness in the long run; more precisely, it has a positive long-run impact on trade openness. However, Financial Development has a significant impact on Inflation

( $b = -1.6158$ ,  $t = -2.9824$ ,  $P > 0.05$ ). This means that financial development has a negative impact on inflation in the long-run.

Trade Openness has an insignificant impact on Inflation. ( $b = -1.0956$ ,  $t = -2.1816$ ,  $P < 0.05$ ). This means that trade openness has a negative but minimal impact on inflation in the long-run. Labour is influenced by Financial Development, Trade Openness and Inflation.

The impact of Financial Development on Labour is statistically significant 0.0000

Financial Development has significant impact on Labour ( $b = 0.481$ ,  $se = 0.0039$ ,  $P < 0.05$ ). This means financial development has a positive impact on labour and the effect is huge in the long-run.

Trade Openness has a statistically significant on LAB ( $b = -0.0038$ ,  $se = 0.0011$ ,  $P < 0.05$ ). This means Financial Development has a negative impact on Trade Openness and the effect is huge in the long-run.

Inflation has an insignificant impact on Labour ( $b = 0.0000$ ,  $se = 0.0014$ ,  $P > 0.05$ ). This means that inflation has a positive impact on labour and the effect is minimal in the long run.

Capital is influenced by Financial Development, Trade Openness, Inflation and Labour.

The impact of Capital on Economic Growth is statistically significant as Financial Development has an insignificant impact on Capital ( $b = -0.5441$ ,  $Se = 0.4486$ ,  $P < 0.05$ ). This means that Capital has a negative impact on Economic Growth and the effect is minimal in a long run.

Trade Openness has a significant impact on Capital ( $b = 0.1470$ ,  $se = 0.0479$ ,  $P > 0.05$ ). This means that Capital has a positive impact on trade and the effect is marginal in a long-run.

Inflation has an insignificant impact on Capital ( $0.0752$  se =  $0.0544$   $P > 0.05$ ). This means that inflation has a positive impact on capital and the effect is marginal.

Labour has an insignificant impact on Capital ( $b = 12.4987$  se  $7.1300$   $P > 0.05$ ). This means that labour has a positive impact on Capital and the effect will be great in a long-run.

Financial Development has an insignificant impact on Economic Growth. ( $b = -0.1603$ ,  $t = -0.7573$ ,  $P > 0.05$ ). This means that Financial Development has a negative impact on Economic Growth and the impact is minimal in the long-run.

Trade Openness has a significant impact on Economic Growth. ( $0.0611$ ,  $t = 2.2827$ ,  $P < 0.05$ ). This means that Trade openness has positive impact on economic growth and the impact is minimal. Inflation has an insignificant impact on Economic Growth. ( $b = -0.0221$ ,  $t = -0.5880$ ,  $P > 0.05$ ). This means that Inflation has a negative impact on Economic Growth and it is minimal in a long-run.

#### **4.4 Direct, Indirect and Total Effect**

The total effect of Financial Development on Economic Growth is significant with a P value of  $0.886$  less than  $0.05$ . The Direct effect of Financial Development on Economic Growth is insignificant with a P value of  $0.7858$  less than  $0.05$ . This means that Financial Development has a positive impact on Economic growth and the impact is huge in the long-run. The Indirect effect of Financial Development through Trade Openness is statistically insignificant on Economic Growth. The indirect effect of Financial Development through Inflation is statistically insignificant on Economic Growth. This means that Indirectly Financial Development is influenced positively on economic growth and the impact is minimal so applies to the other variables indicated below.

The indirect effect of Financial Development through Labour is statistically insignificant on Economic Growth. The indirect effect of Financial Development through Capital is statistically insignificant on Economic Growth. The Indirect effect of Financial Development through Inflation and Labour is statistically insignificant on Economic Growth.

The Indirect effect of Financial Development through Inflation and Capital is statistically insignificant on Economic Growth. The indirect effect of Financial Development through Trade Openness, Inflation and Labour is statistically insignificant on Economic Growth. This means that Financial Development through trade, inflation and labour will have a minimal effect on economic growth.

The indirect effect of Financial Development through Trade Openness, Inflation and Capital is statistically insignificant on Economic Growth. This means that Financial Development through trade, inflation and capital will have an indirect minimal effect on economic growth. The indirect effect of Financial Development through Trade Openness, Labour and Capital is statistically insignificant on Economic Growth. The indirect effect of Financial Development through Trade Openness, Inflation, Labour and Capital is statistically insignificant on Economic Growth.

The study assessed the serial moderation with Trade Openness, Inflation and Foreign Direct Investment serially mediating the relationship between collaborative Financial Development and Economic Growth. The results revealed a significant indirect effect of collaborative Financial Development and Economic Growth. Furthermore, the direct effect of collaborative Financial Development on Economic Growth in the

presence of the mediators was found to be insignificant. Hence there is a full serial mediation of Trade Openness, Inflation, Labour and Capital on the relationship between collaborative Financial Development and Economic Growth.

### 4.5 Model 3

Run MATRIX procedure:

```
Model : 76
      Y : GDP
      X : FD
      M1 : Trade
      M2 : Inflation
      M3 : Labour
      M4 : Capital
      W : GP
      Z : Democracy
```

```
Sample
Size: 23
```

```
*****
*****
```

```
OUTCOME VARIABLE:
Trade
```

```
Model Summary
      R      R-sq      MSE      F(HC3)      df1      df2
p      .8699      .7568      76.6353      13.7637      5.0000      17.0000
.0000
```

```
Model
      coeff      se(HC3)      t      p      LLCI
ULCI
constant      66.7347      69.2564      .9636      .3488      -79.3955
212.8650
FD      -1.0212      5.8335      -.1751      .8631      -13.3297
11.2874
GP      -.0348      .9642      -.0361      .9716      -2.0692
1.9995
Int_1      .0357      .0796      .4481      .6598      -.1323
.2037
Democracy      -10.8184      42.4579      -.2548      .8019      -100.4042
78.7673
Int_2      1.4347      4.0053      .3582      .7246      -7.0165
9.8859
```

Product terms key:

```
Int_1 :      FD      x      GP
Int_2 :      FD      x      Democracy
```

Test(s) of highest order unconditional interaction(s):

```
      R2-chng      F(HC3)      df1      df2      p
X*W      .0073      .2008      1.0000      17.0000      .6598
```

X*Z	.0048	.1283	1.0000	17.0000	.7246
BOTH(X)	.0073	.1076	2.0000	17.0000	.8986

-----

Focal predict: FD (X)  
 Mod var: GP (W)  
 Mod var: Democrac (Z)

OUTCOME VARIABLE:  
 Inflation

Model Summary

	R	R-sq	MSE	F(HC3)	df1	df2
p	.5088	.2589	247.4689	.6947	5.0000	17.0000
	.6345					

Model

	coeff	se(HC3)	t	p	LLCI
ULCI					
constant	83.7579	141.3259	.5927	.5612	-214.4383
	381.9541				
FD	-3.3291	9.1172	-.3651	.7195	-22.5663
	15.9082				
GP	-.4599	1.9632	-.2343	.8176	-4.6023
	3.6825				
Int_1	.0231	.1351	.1713	.8660	-.2619
	.3082				
Democracy	36.2331	49.3695	.7339	.4730	-67.9361
	140.4023				
Int_2	-3.1387	3.2687	-.9602	.3504	-10.0355
	3.7582				

Product terms key:

Int_1	:	FD	x	GP
Int_2	:	FD	x	Democrac

Test(s) of highest order unconditional interaction(s):

	R2-chng	F(HC3)	df1	df2	p
X*W	.0029	.0294	1.0000	17.0000	.8660
X*Z	.0217	.9220	1.0000	17.0000	.3504
BOTH(X)	.1047	1.3800	2.0000	17.0000	.2784

-----

Focal predict: FD (X)  
 Mod var: GP (W)  
 Mod var: Democrac (Z)

OUTCOME VARIABLE:  
 Labour

Model Summary

	R	R-sq	MSE	F(HC3)	df1	df2
p	.8400	.7056	.0104	18.2670	5.0000	17.0000
	.0000					

Model	coeff	se (HC3)	t	p	LLCI
ULCI					
constant	15.7863	.3894	40.5446	.0000	14.9647
16.6078					
FD	.0339	.0301	1.1269	.2754	-.0296
.0975					
GP	.0001	.0060	.0144	.9887	-.0125
.0127					
Int_1	-.0002	.0005	-.3396	.7383	-.0012
.0008					
Democrac	.2621	.2887	.9079	.3766	-.3470
.8712					
Int_2	-.0186	.0255	-.7303	.4751	-.0724
.0352					

Product terms key:

Int\_1 : FD x GP  
Int\_2 : FD x Democrac

Test(s) of highest order unconditional interaction(s):

	R2-chng	F (HC3)	df1	df2	p
X*W	.0013	.1153	1.0000	17.0000	.7383
X*Z	.0072	.5334	1.0000	17.0000	.4751
BOTH (X)	.0100	.3256	2.0000	17.0000	.7265

-----

Focal predict: FD (X)  
Mod var: GP (W)  
Mod var: Democrac (Z)

OUTCOME VARIABLE:

Capita

Model Summary

	R	R-sq	MSE	F (HC3)	df1	df2
p	.5183	.2686	22.1944	.3773	5.0000	17.0000
.8573						

Model

	coeff	se (HC3)	t	p	LLCI
ULCI					
constant	47.5508	29.3652	1.6193	.1238	-14.4094
109.5110					
FD	-2.1833	2.4192	-.9025	.3794	-7.2877
2.9212					
GP	-.4708	.5769	-.8162	.4257	-1.6880
.7463					
Int_1	.0402	.0458	.8786	.3918	-.0564
.1369					
Democracy	-16.8944	24.2269	-.6973	.4950	-68.0129
34.2242					
Int_2	1.2898	2.0242	.6372	.5325	-2.9812
5.5608					

Product terms key:

Int\_1 : FD x GP  
Int\_2 : FD x Democracy



Test(s) of highest order unconditional interaction(s):

	R2-chng	F(HC3)	df1	df2	p
X*W	.0961	.7720	1.0000	17.0000	.3918
X*Z	.0404	.4060	1.0000	17.0000	.5325
BOTH(X)	.1025	.3874	2.0000	17.0000	.6847

-----

Focal predict: FD (X)  
 Mod var: GP (W)  
 Mod var: Democracy (Z)

OUTCOME VARIABLE:

GDP

Model Summary

	R	R-sq	MSE	F(HC3)	df1	df2
p	.9711	.9430	1.7223	2.8586	17.0000	5.0000
	.1247					

Model

	coeff	se(HC3)	t	p	LLCI
ULCI					
constant	370.8339	1756.1392	.2112	.8411	-4149.6433
4891.3111					
FD	-.3658	5.0445	-.0725	.9450	-13.3510
12.6193					
Trade	-.0655	.6231	-.1051	.9204	-1.6695
1.5386					
Inflation	-.1599	.2004	-.7979	.4611	-.6757
.3559					
Labour	-23.1960	113.7552	-.2039	.8465	-316.0133
269.6213					
Capita	1.1242	1.8015	.6240	.5600	-3.5130
5.7613					
GP	-4.6460	21.1712	-.2194	.8350	-59.1426
49.8507					
Int_1	.0062	.0705	.0878	.9334	-.1752
.1876					
Int_2	.0044	.0081	.5499	.6061	-.0163
.0252					
Int_3	.0004	.0029	.1210	.9084	-.0072
.0079					
Int_4	.2831	1.3631	.2077	.8436	-3.2256
3.7918					
Int_5	-.0196	.0239	-.8190	.4501	-.0811
.0420					
Democracy	-899.9706	1641.1839	-.5484	.6070	-5124.5414
3324.6002					
Int_6	-1.2578	5.2516	-.2395	.8202	-14.7758
12.2603					
Int_7	.4916	.5620	.8747	.4217	-.9551
1.9382					
Int_8	.5240	.4061	1.2902	.2534	-.5214
1.5694					
Int_9	56.0877	106.6565	.5259	.6215	-218.4566
330.6321					
Int_10	-1.4253	1.4678	-.9711	.3761	-5.2035
2.3529					

Product terms key:

Int_1	:	FD	x	GP
Int_2	:	Trade	x	GP
Int_3	:	Inflation	x	GP
Int_4	:	Labour	x	GP
Int_5	:	Capita	x	GP
Int_6	:	FD	x	Democracy
Int_7	:	Trade	x	Democracy
Int_8	:	Inflation	x	Democracy
Int_9	:	Labour	x	Democracy
Int_10	:	Capita	x	Democracy

Test(s) of X by M interaction:

	F(HC3)	df1	df2	p
M1*X	.2603	1.0000	4.0000	.6368
M2*X	.3733	1.0000	4.0000	.5742
M3*X	.7280	1.0000	4.0000	.4416
M4*X	.0142	1.0000	4.0000	.9110

Test(s) of highest order unconditional interaction(s):

	R2-chng	F(HC3)	df1	df2	p
X*W	.0013	.0077	1.0000	5.0000	.9334
X*Z	.0126	.0574	1.0000	5.0000	.8202
BOTH(X)	.0641	.6240	2.0000	5.0000	.5729
M1*W	.0190	.3024	1.0000	5.0000	.6061
M1*Z	.0458	.7651	1.0000	5.0000	.4217
BOTH(M1)	.0648	.7015	2.0000	5.0000	.5388
M2*W	.0003	.0147	1.0000	5.0000	.9084
M2*Z	.0927	1.6645	1.0000	5.0000	.2534
BOTH(M2)	.0937	.8854	2.0000	5.0000	.4686
M3*W	.0039	.0431	1.0000	5.0000	.8436
M3*Z	.0572	.2765	1.0000	5.0000	.6215
BOTH(M3)	.0969	.3886	2.0000	5.0000	.6968
M4*W	.0499	.6707	1.0000	5.0000	.4501
M4*Z	.0969	.9429	1.0000	5.0000	.3761
BOTH(M4)	.1013	.4763	2.0000	5.0000	.6466

-----

Focal predict: FD (X)  
 Mod var: GP (W)  
 Mod var: Democrac (Z)

Conditional direct effect(s) of X on Y:

	GP	Democracy	Effect	se(HC3)	t	p
LLCI	ULCI					
24.3079	-.3910	.2764	5.4029	.0512	.9612	
-13.6311	14.1839					
24.3079	.3628	-.6717	1.5514	-.4329	.6831	
-4.6652	3.3219					
24.3079	.6503	-1.0333	.6688	-1.5449	.1830	
-2.7548	.6883					
39.0252	-.3910	.3675	4.4107	.0833	.9368	
-10.9859	11.7210					
39.0252	.3628	-.5805	.7261	-.7995	.4603	
-2.4496	1.2885					
39.0252	.6503	-.9421	1.2508	-.7532	.4852	
-4.1618	2.2775					
113.6263	-.3910	.8294	1.7867	.4642	.6620	
-3.7698	5.4285					
113.6263	.3628	-.1187	4.9085	-.0242	.9816	
-12.7537	12.5163					

113.6263	.6503	-.4803	6.3499	-.0756	.9426
-16.8257	15.8651				

Conditional indirect effects of X on Y:

INDIRECT EFFECT:

FD -> Trade -> GDP  
 Error encountered in source line #201922

Error # 12354

Subscript is out of range.

Execution of this command stops.

\*\*\*\*\* ANALYSIS NOTES AND ERRORS  
 \*\*\*\*\*

Level of confidence for all confidence intervals in output:  
 95.0000

W values in conditional tables are the 16th, 50th, and 84th percentiles.

Z values in conditional tables are the 16th, 50th, and 84th percentiles.

#### 4.5.1 Interpretation of Analysis

The impact of Financial Development through Trade Openness is significant on Economic Growth. This means financial development has a positive impact on trade and the effect is huge on economic growth.

The Interaction term 1 was statistically insignificant ( $b = 0.0357$ ,  $se = 0.4481$ ,  $P > 0.05$ ), indicating that Government Policy is an insignificant moderator of the effect on Trade Openness on Economic Growth. This means that Government Policy is positively impacted by trade and the effect is minimal on economic growth.

The interaction term 2 was statistically insignificant ( $b = 1.4347$ ,  $se = 4.0053$ ,  $P > 0.005$ ) Indicating that Democracy Index is an insignificant moderator of the effect Trade Openness on Economic Growth. This means that Democracy index has a positive impact on trade openness and the impact is minimal on economic growth.

The impact of Financial Development through Inflation is insignificant on Economic

Growth. This means that Financial Development through Inflation has a minimal impact on economic growth.

The interaction term 1 was statistically insignificant ( $b = 0.0231$ ,  $se = 0.1351$ ,  $P > 0.05$ ), indicating that Government Policy is an insignificant moderator of the effect Inflation on Economic Growth. This was argued by Shahzad, A. and Al-Swidi, A.K., 2013 examined the moderating role of political stability on the relationship between macroeconomic variables and foreign direct investment.

The Interaction term 2 was statistically insignificant ( $b = -3.1387$ ,  $se = -3.2687$ ,  $P > 0.05$ ) Indicating that Democracy Index is an insignificant moderator of the effect Inflation on Economic Growth. The impact of Financial Development through Labour is statistically significant on Economic Growth was argued by Adu, G., Marbuah, G. and Mensah, J.T., 2013. Investigated into the long run growth effect of financial development in Ghana.

The interaction term 1 was statistically insignificant ( $b = -0.002$ ,  $se = 0.005$ ,  $P > 0.05$ ), indicating Government Policy is insignificant moderator of the effect of Labour on Economic Growth. This means that Government Policy on labour has a minimal effect on economic growth.

The interaction term 2 is statistically insignificant ( $b = -0.0186$ ,  $se = 0.0255$ ,  $P > 0.05$ ), indicating that Democracy Index is an insignificant moderator of the effect of Labour on Economic Growth. This was argued by Doucouliagos, H. and Ulubaşoğlu, M.A., 2008 examined the beneficial effect of foreign direct investment determinants such as labour on democracy index on economic growth.

The impact of Financial Development through Capital is statistically insignificant on Economic Growth.

The interaction term 1 was statistically insignificant ( $b = 0.0402$ ,  $se = 0.0458$ ,  $P > 0.05$ ), indicating Government Policy is insignificant moderator of the effect of Capital on Economic Growth. Yuan, B., & Zhang, Y. (2020) examined the importance of Government Policy on capital on economic growth.

The interaction term 2 was statistically insignificant ( $b = 1.2898$ ,  $se = 2.0242$ ,  $P > 0.05$ ), indicating Government Policy is insignificant moderator of the effect of Capital on Economic Growth. Yuan, B., & Zhang, Y. (2020). Argued in his study that for a country to rely on market mechanism for achieving industrial sustainable development is an important issue for both to current scholars and policymakers.

The interaction term 1 is statistically insignificant ( $b = 0.0062$ ,  $se = 0.0705$ ,  $P > 0.05$ ) Indicating that Financial Development and Government Policy are insignificant on Economic Growth. Jalil, A., & Ma, Y. (2008) argued that financial development and government policy has a little or no effect on economic growth.

The Interaction term 2 is statistically insignificant ( $b = - 0.0044$ ,  $se = 0.0081$ ,  $P > 0.05$ ) indicating that Trade Openness and Government Policy are insignificant on Economic Growth. This was argued by Nursini, N., 2017 that the impact of trade openness on Government policy is positively impacted in the long run.

The interaction term 3 is statistically insignificant ( $b = 0.0004$ ,  $se = 0.0029$ ,  $P > 0.05$ ) indicating that Inflation and Government Policy are insignificant on Economic Growth. Chani, D., Irfan, M., Pervaiz, Z., Jan, S. A., Ali, A., & Chaudhary, A. R. (2011) argued in his research results that economic growth and investment have negative and inflation has positive impact on poverty.

The interaction term 4 is statistically insignificant ( $b = 0.2831$ ,  $se = 1.3631$ ,  $P > 0.05$ ) indicating that Labour and GP are insignificant on Economic Growth. Dolado, J. J.

(2001). Argued that labour and Government policy are marginally have an impact on the economic growth using a software cost function.

The interaction term 5 is statistically insignificant ( $b = -0.0196$ ,  $se = 0.239$ ,  $P > 0.05$ ) indicating that Capital and GP are statistically insignificant. The interaction term 6 is statistically insignificant ( $b = -1.2578$ ,  $se = 5.2516.239$ ,  $P > 0.05$ ) indicating that Financial Development and Democracy Index are statistically insignificant. Raza, S. H., Shahzadi, H., & Akram, M. (2014) examined the impact of financial development on democracy index and how it affects economic growth.

The interaction term 7 is statistically insignificant ( $b = 0.4916$ ,  $se = 0.5620$ ,  $P > 0.05$ ) indicating that Trade Openness and Democracy Index are statistically insignificant. Grossman and Helpman (1990) argued that trade structure and commercial policy might affect the long-run growth only through the channel of comparative advantage in the R&D sector.

The interaction term 8 is statistically insignificant ( $b = 0.5240$ ,  $se = 0.4061$ ,  $P > 0.05$ ) indicating that Inflation and Democracy Index are statistically insignificant. Tahir, M., & Khan, I. (2014) argued that inflation is harmful and that the effect on inflation and economic performance is overwhelming.

The interaction term 9 is statistically insignificant ( $b = 56.0877$ ,  $se = 106.6565$ ,  $P > 0.05$ ) indicating that Labour and Democracy Index are statistically insignificant. Paldam, M., & Gundlach, E. (2008) argued that the basic pattern of correlations reveals that a good deal of the short- to medium-run causality appears to be from democracy to income. Considering the long- and short-term effect.

The interaction term 10 is statistically insignificant ( $b = -1.4253$ ,  $se = 1.4678$ ,  $P > 0.05$ ) Indicating that Capital and Democracy Index are statistically insignificant. This was

argued by Rivera Batiz, F.L., 2002. Who examined how democracy affects long-run growth by influencing the quality of governance?

## **CHAPTER FIVE**

### **SUMMARY, CONCLUSION AND RECOMMENDATIONS**

#### **5.0 Introduction**

This chapter provides a detailed summary of the findings from the chapter four, conclusions and recommendations of the study based on the objectives of the study. The aim of the study is to examine the determinants of FDI in Ghana using the moderating and mediating effects.

#### **5.1 Summary of the Findings**

Earlier studies on the determinants influencing foreign direct investment in Ghana, despite their rarity. The goal of the study was to identify the determinants that contribute to Ghana's foreign direct investment. The study used secondary data for its analysis. Findings revealed that economic variables such as trade openness, inflation, capitalization, labour and capital had a significant relationship with financial development and economic growth. Further, when moderated by government policy and democracy index, the study revealed that financial development moderated the economic variables which were statistically significant.

#### **5.2 Conclusion**

The study has empirically examined the determinants of FDI in Ghana using the data from the World Bank report for the period 1960 – 2021. The empirical evidence revealed the following findings; The total effect of Financial Development on Economic Growth is significant with a P value of 0.886 less than 0.05. The Direct effect of Financial Development on Economic Growth is insignificant with a P value of 0.7858 less than 0.05. The indirect effect of Financial Development through Trade



Openness is statistically insignificant on Economic Growth. The indirect effect of Financial Development through Inflation is statistically insignificant on Economic Growth. The indirect effect of Financial Development through Labour is statistically insignificant on Economic Growth. The indirect effect of Financial Development through Capital is statistically insignificant on Economic Growth. The Indirect effect of Financial Development through Inflation and Labour is statistically insignificant on Economic Growth. The Indirect effect of Financial Development through Inflation and Capital is statistically insignificant on Economic Growth. The indirect effect of Financial Development through Trade Openness, Inflation and Labour is statistically insignificant on Economic Growth. The indirect effect of Financial Development through Trade Openness, Inflation and Capital is statistically insignificant on Economic Growth. The indirect effect of Financial Development through Trade Openness, Labour and Capital is statistically insignificant on Economic Growth. The indirect effect of Financial Development through Trade Openness, Inflation, Labour and Capital is statistically insignificant on Economic Growth.

The study assessed the serial moderation with Trade Openness, Inflation and Foreign Direct Investment serially mediating the relationship between collaborative Financial Development and Economic Growth. The results revealed a significant indirect effect of collaborative Financial Development and Economic Growth. Furthermore, the direct effect of collaborative Financial Development on Economic Growth in the presence of the mediators was found to be insignificant.

Hence there is a full serial mediation of Trade Openness, Inflation, Labour and Capital on the relationship between collaborative Financial Development and Economic Growth.

### **5.3 Policy Recommendations**

The following recommendations were proposed to improve FDI. Also research has indicated that FDI is able to economically boost countries real income and tax income and thus result in the improvement of wellbeing of individuals. These incomes generated from the foreign capital mostly help policy makers in Ghana to achieve economic growth mandates through trade openness, reduced inflation, low labour cost and capital.

To the individual, it leads to creation of jobs which helps in improving labour issues in Ghana which in a long run will enable an average worker the needed purchasing power to obtain quality health-care, standard education and training as well as goods necessary in welfare sustenance (Nair- Reichert & Weinhold, 2001; Nkechi & Okezie, 2013). While some works found that FDI positively impact Sustainable development (Reiter & Steensma, 2010; Tvaronavičienė & Lankauskienė, 2011; Kardos, 2014; Ridzuan, Ismail & Che Hamat, 2017), others found a negative impact (Yahouedeou et al., 2018). Also, the findings of some studies held that FDI has no significant impact on economic growth and financial development (Gui-Diby & Renard, 2015).

Based on these inconclusive findings in the literature, we sought to further investigate the link between FDI and its moderating and mediating effect in Ghana. Other researchers have analysed various causal links between FDI and its determinant in

moderating and mediating in the long- and short-term effect. (Soumaré & Tchana Tchana, 2015), foreign direct investment and economic growth in the presence of strong institutions (Agbloyor et al., 2016), and FDI and environmental issues (Bokpin, 2017; Tamazian, Chousa & Vadlamannati, 2009; Khan & Khan, 2018).

The government policy makers should pursue expansionary policies that can ensure economic growth. Fiscal policies in terms of public debt management should be pursued to stimulate demand for financial services. The government should craft policies that promote free trade and help attract foreign investment that opens up the economy. These policy measures shall stimulate demand for financial services and help financial institutions in acquiring the much needed investment financing from the international financial markets.

#### **5.4 Areas for Further Research**

Other factors that influence financial development should be studied since the previously studied ones only account for a portion of financial development. The researcher suggests that future research be focused on validating the findings of this study by carrying out a comparable study in Ghana through data collecting from various sources over a diverse time period.

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# APPENDIX A

## MODEL 1

Run MATRIX procedure:

Model : 2

Y : GDP

X : FD

W : Democracy

Z : GP

Sample

Size: 23

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:

GDP

Model Summary

	R	R-sq	MSE	F(HC3)	df1	df2
P	.4754	.2260	6.8801	1.5899	5.0000	17.0000
	.2162					

Model

	coeff	se(HC3)	t	p	LLCI
ULCI					
constant	5.4968	14.4522	.3803	.7084	-24.9973
35.9909					
FD	.0695	1.2437	.0559	.9561	-2.5546
2.6936					
Democrac	2.6772	12.6724	.2113	.8352	-24.0614
29.4158					
Int_1	-.0427	1.1538	-.0370	.9709	-2.4772
2.3918					
GP	.0527	.2390	.2205	.8281	-.4515
.5569					
Int_2	-.0052	.0198	-.2648	.7944	-.0469
.0365					

Product terms key:

Int_1	:	FD	x	Democrac
Int_2	:	FD	x	GP

Test(s) of highest order unconditional interaction(s):

	R2-chng	F(HC3)	df1	df2	p
X*W	.0002	.0014	1.0000	17.0000	.9709
X*Z	.0055	.0701	1.0000	17.0000	.7944
BOTH	.0119	.1042	2.0000	17.0000	.9016

-----

Focal predict: FD (X)  
Mod var: Democrac (W)  
Mod var: GP (Z)

Data for visualizing the conditional effect of the focal predictor:  
Paste text below into a SPSS syntax window and execute to produce  
plot.

DATA LIST FREE/

```

      FD          Democrac   GP          GDP          .
BEGIN DATA.
  11.7579      -.3910      24.3079      5.2484
  14.0534      -.3910      24.3079      5.1543
  17.6249      -.3910      24.3079      5.0078
  11.7579      -.3910      39.0252      5.1180
  14.0534      -.3910      39.0252      4.8470
  17.6249      -.3910      39.0252      4.4253
  11.7579      -.3910      113.6263     4.4567
  14.0534      -.3910      113.6263     3.2893
  17.6249      -.3910      113.6263     1.4729
  11.7579      .3628       24.3079      6.8880
  14.0534      .3628       24.3079      6.7199
  17.6249      .3628       24.3079      6.4585
  11.7579      .3628       39.0252      6.7575
  14.0534      .3628       39.0252      6.4126
  17.6249      .3628       39.0252      5.8761
  11.7579      .3628       113.6263     6.0963
  14.0534      .3628       113.6263     4.8550
  17.6249      .3628       113.6263     2.9236
  11.7579      .6503       24.3079      7.5133
  14.0534      .6503       24.3079      7.3171
  17.6249      .6503       24.3079      7.0118
  11.7579      .6503       39.0252      7.3829
  14.0534      .6503       39.0252      7.0098
  17.6249      .6503       39.0252      6.4294
  11.7579      .6503       113.6263     6.7216
  14.0534      .6503       113.6263     5.4521
  17.6249      .6503       113.6263     3.4770

```

```

END DATA.
GRAPH/SCATTERPLOT=
  FD          WITH      GDP          BY          Democracy /PANEL  ROWVAR= GP.

```

```

***** ANALYSIS NOTES AND ERRORS
*****

```

Level of confidence for all confidence intervals in output:  
95.0000

NOTE: A heteroscedasticity consistent standard error and covariance matrix estimator was used.

NOTE: Variables names longer than eight characters can produce incorrect output.  
Shorter variable names are recommended.

----- END MATRIX -----

## APPENDIX B

### MODEL 2

Run MATRIX procedure:

```

Model   : 6
  Y     : GDP
  X     : FD
  M1    : Trade
  M2    : Inflation
  M3    : Labour
  M4    : Capita
    
```

```

Sample
Size: 31
    
```

```

*****
*****
    
```

```

OUTCOME VARIABLE:
  Trade
    
```

```

Model Summary
      R      R-sq      MSE      F(HC3)      df1      df2
p      .4253      .1809      323.0890      10.5988      1.0000      29.0000
.0029
    
```

```

Model
      coeff      se(HC3)      t      p      LLCI
ULCI
constant      52.2256      7.2282      7.2253      .0000      37.4419
67.0093
FD      1.7981      .5523      3.2556      .0029      .6685
2.9277
    
```

```

*****
*****
    
```

```

OUTCOME VARIABLE:
  Inflatio
    
```

```

Model Summary
      R      R-sq      MSE      F(HC3)      df1      df2
p      .3141      .0987      222.1329      2.7165      2.0000      28.0000
.0835
    
```

```

Model
      coeff      se(HC3)      t      p      LLCI
ULCI
constant      33.5639      10.3625      3.2390      .0031      12.3367
54.7910
FD      -1.0956      .5022      -2.1816      .0377      -2.1244      -
.0668
Trade      .0430      .1300      .3308      .7433      -.2234
.3094
    
```

```

Test(s) of X by M interaction:
      F(HC3)      df1      df2      p
    
```



M1\*X      1.5165      1.0000      27.0000      .2288

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:

Labour

Model Summary

	R	R-sq	MSE	F(HC3)	df1	df2
p	.9042	.8177	.0101	52.4452	3.0000	27.0000
	.0000					

Model

	coeff	se(HC3)	t	p	LLCI	
ULCI						
constant	15.7509	.1018	154.7611	.0000	15.5421	
	15.9597					
FD	.0481	.0039	12.3945	.0000	.0401	
	.0561					
Trade	-.0038	.0011	-3.4547	.0018	-.0061	-
	.0015					
Inflatio	.0000	.0014	.0006	.9995	-.0028	
	.0028					

Test(s) of X by M interaction:

	F(HC3)	df1	df2	p
M1*X	8.9608	1.0000	26.0000	.0060
M2*X	.7603	1.0000	26.0000	.3912

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:

Capita

Model Summary

	R	R-sq	MSE	F(HC3)	df1	df2
p	.5312	.2822	18.8583	4.8293	4.0000	26.0000
	.0048					

Model

	coeff	se(HC3)	t	p	LLCI	
ULCI						
constant	-185.6608	112.1583	-1.6553	.1099	-416.2130	
	44.8914					
FD	-.5441	.4486	-1.2129	.2361	-1.4661	
	.3780					
Trade	.1470	.0479	3.0711	.0049	.0486	
	.2453					
Inflatio	.0752	.0544	1.3837	.1782	-.0365	
	.1870					
Labour	12.4987	7.1300	1.7530	.0914	-2.1578	
	27.1551					

Test(s) of X by M interaction:

	F(HC3)	df1	df2	p
M1*X	2.1380	1.0000	25.0000	.1561
M2*X	.1300	1.0000	25.0000	.7215
M3*X	.2193	1.0000	25.0000	.6436

\*\*\*\*\*  
 \*\*\*\*\*

OUTCOME VARIABLE:

GDP

Model Summary

	R	R-sq	MSE	F(HC3)	df1	df2
p	.6724	.4521	4.2327	2.3827	5.0000	25.0000
	.0673					

Model

	coeff	se(HC3)	t	p	LLCI	
ULCI						
constant	-73.0481	72.4019	-1.0089	.3227	-222.1679	
	76.0717					
FD	-.0594	.2162	-.2747	.7858	-.5047	
	.3859					
Trade	.0702	.0324	2.1641	.0402	.0034	
	.1370					
Inflatio	.0397	.0236	1.6850	.1044	-.0088	
	.0882					
Labour	5.0180	4.6949	1.0688	.2954	-4.6517	
	14.6878					
Capita	-.3618	.1298	-2.7878	.0100	-.6291	-
	.0945					

Test(s) of X by M interaction:

	F(HC3)	df1	df2	p
M1*X	1.9699	1.0000	24.0000	.1733
M2*X	.0003	1.0000	24.0000	.9864
M3*X	1.0646	1.0000	24.0000	.3125
M4*X	.6960	1.0000	24.0000	.4124

\*\*\*\*\* TOTAL EFFECT MODEL  
 \*\*\*\*\*

OUTCOME VARIABLE:

GDP

Model Summary

	R	R-sq	MSE	F(HC3)	df1	df2
p	.3200	.1024	5.9772	3.1054	1.0000	29.0000
	.0886					

Model

	coeff	se(HC3)	t	p	LLCI	
ULCI						
constant	3.1727	.8960	3.5408	.0014	1.3400	
	5.0054					
FD	.1758	.0998	1.7622	.0886	-.0282	
	.3798					

\*\*\*\*\* TOTAL, DIRECT, AND INDIRECT EFFECTS OF X ON Y  
 \*\*\*\*\*

Total effect of X on Y

	Effect	se(HC3)	t	p	LLCI	ULCI
c_ps	c_cs					

	.1758	.0998	1.7622	.0886	-.0282	.3798
.0693	.3200					

Direct effect of X on Y

	Effect	se(HC3)	t	p	LLCI	ULCI
c'_ps	c'_cs					
	-.0594	.2162	-.2747	.7858	-.5047	.3859
	-.0234	-.1081				

Indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
TOTAL	.2352	.2318	-.1531	.8066
Ind1	.1262	.0652	.0122	.2647
Ind2	-.0435	.0416	-.0993	.0833
Ind3	.2413	.2215	-.1500	.7822
Ind4	.1969	.1893	-.0858	.6497
Ind5	.0031	.0105	-.0234	.0189
Ind6	-.0343	.0296	-.0997	.0248
Ind7	-.0956	.0558	-.2257	-.0096
Ind8	.0000	.0148	-.0237	.0344
Ind9	.0298	.0299	-.0096	.1031
Ind10	-.2175	.1565	-.5833	.0033
Ind11	.0000	.0031	-.0070	.0039
Ind12	-.0021	.0097	-.0249	.0137
Ind13	.0309	.0243	-.0012	.0919
Ind14	.0000	.0141	-.0344	.0162
Ind15	.0000	.0032	-.0030	.0069

Partially standardized indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
TOTAL	.0927	.0959	-.0636	.3305
Ind1	.0497	.0240	.0056	.0995
Ind2	-.0171	.0168	-.0383	.0338
Ind3	.0951	.0963	-.0626	.3347
Ind4	.0776	.0679	-.0418	.2261
Ind5	.0012	.0043	-.0102	.0074
Ind6	-.0135	.0127	-.0424	.0109
Ind7	-.0377	.0197	-.0815	-.0045
Ind8	.0000	.0061	-.0105	.0144
Ind9	.0118	.0106	-.0039	.0372
Ind10	-.0857	.0552	-.2146	.0014
Ind11	.0000	.0013	-.0030	.0016
Ind12	-.0008	.0036	-.0091	.0054
Ind13	.0122	.0083	-.0006	.0313
Ind14	.0000	.0051	-.0130	.0064
Ind15	.0000	.0012	-.0012	.0026

Completely standardized indirect effect(s) of X on Y:

	Effect	BootSE	BootLLCI	BootULCI
TOTAL	.4282	.4497	-.2832	1.5898
Ind1	.2297	.1190	.0236	.4868
Ind2	-.0792	.0756	-.1693	.1577
Ind3	.4393	.4500	-.2814	1.5791
Ind4	.3584	.3202	-.1840	1.0712
Ind5	.0056	.0199	-.0475	.0355
Ind6	-.0625	.0593	-.1990	.0471
Ind7	-.1741	.0961	-.3924	-.0174
Ind8	.0000	.0280	-.0487	.0651
Ind9	.0543	.0497	-.0177	.1716
Ind10	-.3959	.2678	-1.0238	.0060
Ind11	.0000	.0062	-.0139	.0074

Ind12	-.0038	.0172	-.0448	.0250
Ind13	.0563	.0396	-.0022	.1508
Ind14	.0000	.0240	-.0577	.0302
Ind15	.0000	.0056	-.0056	.0122

Indirect effect key:

Ind1	FD	->	Trade	->	GDP	
Ind2	FD	->	Inflation	->	GDP	
Ind3	FD	->	Labour	->	GDP	
Ind4	FD	->	Capita	->	GDP	
Ind5	FD	->	Trade	->	Inflation	-> GDP
Ind6	FD	->	Trade	->	Labour	-> GDP
Ind7	FD	->	Trade	->	Capita	-> GDP
Ind8	FD	->	Inflation	->	Labour	-> GDP
Ind9	FD	->	Inflation	->	Capita	-> GDP
Ind10	FD	->	Labour	->	Capita	-> GDP
Ind11	FD	->	Trade	->	Inflation	-> Labour
->	GDP					
Ind12	FD	->	Trade	->	Inflation	-> Capita
->	GDP					
Ind13	FD	->	Trade	->	Labour	-> Capita
->	GDP					
Ind14	FD	->	Inflation	->	Labour	-> Capita
->	GDP					
Ind15	FD	->	Trade	->	Inflation	-> Labour
->	Capita	->	GDP			

\*\*\*\*\* ANALYSIS NOTES AND ERRORS \*\*\*\*\*

Level of confidence for all confidence intervals in output:  
95.0000

Number of bootstrap samples for percentile bootstrap confidence intervals:  
5000

NOTE: A heteroscedasticity consistent standard error and covariance matrix estimator was used.

NOTE: Variables names longer than eight characters can produce incorrect output.  
Shorter variable names are recommended.

----- END MATRIX -----

## APPENDIX C

### MODEL 3

Run MATRIX procedure:

```

Model   : 76
  Y     : GDP
  X     : FD
  M1    : Trade
  M2    : Inflation
  M3    : Labour
  M4    : Capital
  W     : GP
  Z     : Democracy
    
```

```

Sample
Size: 23
    
```

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:

Trade

Model Summary

	R	R-sq	MSE	F(HC3)	df1	df2
p	.8699	.7568	76.6353	13.7637	5.0000	17.0000
	.0000					

Model

	coeff	se(HC3)	t	p	LLCI
ULCI					
constant	66.7347	69.2564	.9636	.3488	-79.3955
212.8650					
FD	-1.0212	5.8335	-.1751	.8631	-13.3297
11.2874					
GP	-.0348	.9642	-.0361	.9716	-2.0692
1.9995					
Int_1	.0357	.0796	.4481	.6598	-.1323
.2037					
Democracy	-10.8184	42.4579	-.2548	.8019	-100.4042
78.7673					
Int_2	1.4347	4.0053	.3582	.7246	-7.0165
9.8859					

Product terms key:

```

Int_1   :      FD      x      GP
Int_2   :      FD      x      Democracy
    
```

Test(s) of highest order unconditional interaction(s):

	R2-chng	F(HC3)	df1	df2	p
X*W	.0073	.2008	1.0000	17.0000	.6598
X*Z	.0048	.1283	1.0000	17.0000	.7246
BOTH(X)	.0073	.1076	2.0000	17.0000	.8986

-----

```

Focal predict: FD      (X)
Mod var: GP      (W)
Mod var: Democrac (Z)
    
```

Data for visualizing the conditional effect of the focal predictor:  
 Paste text below into a SPSS syntax window and execute to produce  
 plot.

```

DATA LIST FREE/
  FD          GP          Democrac  Trade      .
BEGIN DATA.
  11.7579    24.3079     -.3910    61.7118
  14.0534    24.3079     -.3910    60.0707
  17.6249    24.3079     -.3910    57.5173
  11.7579    24.3079      .3628    66.2728
  14.0534    24.3079      .3628    67.1142
  17.6249    24.3079      .3628    68.4232
  11.7579    24.3079      .6503    68.0124
  14.0534    24.3079      .6503    69.8006
  17.6249    24.3079      .6503    72.5828
  11.7579    39.0252     -.3910    67.3727
  14.0534    39.0252     -.3910    66.9368
  17.6249    39.0252     -.3910    66.2586
  11.7579    39.0252      .3628    71.9336
  14.0534    39.0252      .3628    73.9802
  17.6249    39.0252      .3628    77.1645
  11.7579    39.0252      .6503    73.6733
  14.0534    39.0252      .6503    76.6667
  17.6249    39.0252      .6503    81.3241
  11.7579    113.6263     -.3910    96.0671
  14.0534    113.6263     -.3910    101.7406
  17.6249    113.6263     -.3910    110.5677
  11.7579    113.6263      .3628    100.6281
  14.0534    113.6263      .3628    108.7841
  17.6249    113.6263      .3628    121.4736
  11.7579    113.6263      .6503    102.3677
  14.0534    113.6263      .6503    111.4705
  17.6249    113.6263      .6503    125.6332
END DATA.
GRAPH/SCATTERPLOT=
  FD          WITH      Trade      BY          GP          /PANEL      ROWVAR=
  Democrac .

*****
*****
OUTCOME VARIABLE:
  Inflation

Model Summary
      R          R-sq          MSE          F(HC3)          df1          df2
p
.5088          .2589    247.4689          .6947          5.0000          17.0000
.6345

Model
      coeff          se(HC3)          t          p          LLCI
ULCI
constant    83.7579    141.3259          .5927          .5612    -214.4383
381.9541
FD          -3.3291          9.1172          -.3651          .7195    -22.5663
15.9082
GP          -.4599          1.9632          -.2343          .8176    -4.6023
3.6825
Int_1       .0231          .1351          .1713          .8660    -.2619
.3082

```

Democracy	36.2331	49.3695	.7339	.4730	-67.9361
140.4023					
Int_2	-3.1387	3.2687	-.9602	.3504	-10.0355
3.7582					

Product terms key:

Int_1	:	FD	x	GP
Int_2	:	FD	x	Democrac

Test(s) of highest order unconditional interaction(s):

	R2-chng	F(HC3)	df1	df2	p
X*W	.0029	.0294	1.0000	17.0000	.8660
X*Z	.0217	.9220	1.0000	17.0000	.3504
BOTH(X)	.1047	1.3800	2.0000	17.0000	.2784

-----

Focal predict: FD (X)  
 Mod var: GP (W)  
 Mod var: Democrac (Z)

Data for visualizing the conditional effect of the focal predictor:  
 Paste text below into a SPSS syntax window and execute to produce  
 plot.

DATA LIST FREE/

FD	GP	Democrac	Inflatio	.
BEGIN DATA.				
11.7579	24.3079	-.3910	40.3135	
14.0534	24.3079	-.3910	36.7802	
17.6249	24.3079	-.3910	31.2829	
11.7579	24.3079	.3628	39.8079	
14.0534	24.3079	.3628	30.8438	
17.6249	24.3079	.3628	16.8970	
11.7579	24.3079	.6503	39.6151	
14.0534	24.3079	.6503	28.5796	
17.6249	24.3079	.6503	11.4100	
11.7579	39.0252	-.3910	37.5504	
14.0534	39.0252	-.3910	34.7991	
17.6249	39.0252	-.3910	30.5184	
11.7579	39.0252	.3628	37.0448	
14.0534	39.0252	.3628	28.8627	
17.6249	39.0252	.3628	16.1325	
11.7579	39.0252	.6503	36.8520	
14.0534	39.0252	.6503	26.5985	
17.6249	39.0252	.6503	10.6455	
11.7579	113.6263	-.3910	23.5442	
14.0534	113.6263	-.3910	24.7568	
17.6249	113.6263	-.3910	26.6433	
11.7579	113.6263	.3628	23.0386	
14.0534	113.6263	.3628	18.8204	
17.6249	113.6263	.3628	12.2574	
11.7579	113.6263	.6503	22.8458	
14.0534	113.6263	.6503	16.5562	
17.6249	113.6263	.6503	6.7704	

END DATA.

GRAPH/SCATTERPLOT=

FD WITH Inflation BY GP /PANEL ROWVAR=  
 Democracy.

\*\*\*\*\*  
 \*\*\*\*\*

OUTCOME VARIABLE:

Labour

Model Summary

	R	R-sq	MSE	F(HC3)	df1	df2
p	.8400	.7056	.0104	18.2670	5.0000	17.0000
	.0000					

Model

	coeff	se(HC3)	t	p	LLCI
ULCI					
constant	15.7863	.3894	40.5446	.0000	14.9647
16.6078					
FD	.0339	.0301	1.1269	.2754	-.0296
.0975					
GP	.0001	.0060	.0144	.9887	-.0125
.0127					
Int_1	-.0002	.0005	-.3396	.7383	-.0012
.0008					
Democrac	.2621	.2887	.9079	.3766	-.3470
.8712					
Int_2	-.0186	.0255	-.7303	.4751	-.0724
.0352					

Product terms key:

Int_1	:	FD	x	GP
Int_2	:	FD	x	Democrac

Test(s) of highest order unconditional interaction(s):

	R2-chng	F(HC3)	df1	df2	p
X*W	.0013	.1153	1.0000	17.0000	.7383
X*Z	.0072	.5334	1.0000	17.0000	.4751
BOTH(X)	.0100	.3256	2.0000	17.0000	.7265

-----

Focal predict: FD (X)  
 Mod var: GP (W)  
 Mod var: Democrac (Z)

Data for visualizing the conditional effect of the focal predictor:  
 Paste text below into a SPSS syntax window and execute to produce  
 plot.

DATA LIST FREE/

```

FD          GP          Democrac  Labour  .
BEGIN DATA.
  11.7579    24.3079    -.3910    16.1241
  14.0534    24.3079    -.3910    16.2097
  17.6249    24.3079    -.3910    16.3428
  11.7579    24.3079    .3628    16.1566
  14.0534    24.3079    .3628    16.2099
  17.6249    24.3079    .3628    16.2929
  11.7579    24.3079    .6503    16.1690
  14.0534    24.3079    .6503    16.2100
  17.6249    24.3079    .6503    16.2739
  11.7579    39.0252    -.3910    16.0973
  14.0534    39.0252    -.3910    16.1774
  17.6249    39.0252    -.3910    16.3020
  11.7579    39.0252    .3628    16.1298
  14.0534    39.0252    .3628    16.1777
  17.6249    39.0252    .3628    16.2521
  11.7579    39.0252    .6503    16.1422
  
```



14.0534	39.0252	.6503	16.1778
17.6249	39.0252	.6503	16.2331
11.7579	113.6263	-.3910	15.9615
14.0534	113.6263	-.3910	16.0139
17.6249	113.6263	-.3910	16.0953
11.7579	113.6263	.3628	15.9940
14.0534	113.6263	.3628	16.0141
17.6249	113.6263	.3628	16.0454
11.7579	113.6263	.6503	16.0064
14.0534	113.6263	.6503	16.0142
17.6249	113.6263	.6503	16.0264

END DATA.

GRAPH/SCATTERPLOT=

FD WITH Labour BY GP /PANEL ROWVAR=  
Democrac .

\*\*\*\*\*  
\*\*\*\*\*

OUTCOME VARIABLE:  
Capita

Model Summary

	R	R-sq	MSE	F(HC3)	df1	df2
p	.5183	.2686	22.1944	.3773	5.0000	17.0000
	.8573					

Model

	coeff	se(HC3)	t	p	LLCI
ULCI					
constant	47.5508	29.3652	1.6193	.1238	-14.4094
109.5110					
FD	-2.1833	2.4192	-.9025	.3794	-7.2877
2.9212					
GP	-.4708	.5769	-.8162	.4257	-1.6880
.7463					
Int_1	.0402	.0458	.8786	.3918	-.0564
.1369					
Democracy	-16.8944	24.2269	-.6973	.4950	-68.0129
34.2242					
Int_2	1.2898	2.0242	.6372	.5325	-2.9812
5.5608					

Product terms key:

Int\_1 : FD x GP  
Int\_2 : FD x Democracy

Test(s) of highest order unconditional interaction(s):

	R2-chng	F(HC3)	df1	df2	p
X*W	.0961	.7720	1.0000	17.0000	.3918
X*Z	.0404	.4060	1.0000	17.0000	.5325
BOTH(X)	.1025	.3874	2.0000	17.0000	.6847

-----

Focal predict: FD (X)  
Mod var: GP (W)  
Mod var: Democracy (Z)

Data for visualizing the conditional effect of the focal predictor:  
Paste text below into a SPSS syntax window and execute to produce  
plot.

```

DATA LIST FREE/
  FD          GP          Democracy  Capital  .
BEGIN DATA.
  11.7579    24.3079    -.3910    22.6138
  14.0534    24.3079    -.3910    18.6902
  17.6249    24.3079    -.3910    12.5855
  11.7579    24.3079    .3628    21.3103
  14.0534    24.3079    .3628    19.6183
  17.6249    24.3079    .3628    16.9858
  11.7579    24.3079    .6503    20.8131
  14.0534    24.3079    .6503    19.9723
  17.6249    24.3079    .6503    18.6642
  11.7579    39.0252    -.3910    22.6488
  14.0534    39.0252    -.3910    20.0848
  17.6249    39.0252    -.3910    16.0956
  11.7579    39.0252    .3628    21.3452
  14.0534    39.0252    .3628    21.0129
  17.6249    39.0252    .3628    20.4959
  11.7579    39.0252    .6503    20.8480
  14.0534    39.0252    .6503    21.3670
  17.6249    39.0252    .6503    22.1743
  11.7579    113.6263    -.3910    22.8259
  14.0534    113.6263    -.3910    27.1541
  17.6249    113.6263    -.3910    33.8881
  11.7579    113.6263    .3628    21.5223
  14.0534    113.6263    .3628    28.0822
  17.6249    113.6263    .3628    38.2885
  11.7579    113.6263    .6503    21.0251
  14.0534    113.6263    .6503    28.4362
  17.6249    113.6263    .6503    39.9668
END DATA.
GRAPH/SCATTERPLOT=
  FD          WITH      Capita  BY      GP          /PANEL  ROWVAR=
Democracy.

*****
*****
OUTCOME VARIABLE:
  GDP

Model Summary
      R          R-sq          MSE          F(HC3)          df1          df2
p
.9711    .9430    1.7223    2.8586    17.0000    5.0000
.1247

Model
      coeff      se (HC3)          t          p          LLCI
ULCI
constant  370.8339    1756.1392    .2112    .8411 -4149.6433
4891.3111
FD          -.3658    5.0445    -.0725    .9450 -13.3510
12.6193
Trade      -.0655    .6231    -.1051    .9204 -1.6695
1.5386
Inflation  -.1599    .2004    -.7979    .4611 -.6757
.3559
Labour     -23.1960    113.7552    -.2039    .8465 -316.0133
269.6213
Capita     1.1242    1.8015    .6240    .5600 -3.5130
5.7613

```

GP	-4.6460	21.1712	-.2194	.8350	-59.1426
49.8507					
Int_1	.0062	.0705	.0878	.9334	-.1752
.1876					
Int_2	.0044	.0081	.5499	.6061	-.0163
.0252					
Int_3	.0004	.0029	.1210	.9084	-.0072
.0079					
Int_4	.2831	1.3631	.2077	.8436	-3.2256
3.7918					
Int_5	-.0196	.0239	-.8190	.4501	-.0811
.0420					
Democracy	-899.9706	1641.1839	-.5484	.6070	-5124.5414
3324.6002					
Int_6	-1.2578	5.2516	-.2395	.8202	-14.7758
12.2603					
Int_7	.4916	.5620	.8747	.4217	-.9551
1.9382					
Int_8	.5240	.4061	1.2902	.2534	-.5214
1.5694					
Int_9	56.0877	106.6565	.5259	.6215	-218.4566
330.6321					
Int_10	-1.4253	1.4678	-.9711	.3761	-5.2035
2.3529					

Product terms key:

Int_1	:	FD	x	GP
Int_2	:	Trade	x	GP
Int_3	:	Inflation	x	GP
Int_4	:	Labour	x	GP
Int_5	:	Capita	x	GP
Int_6	:	FD	x	Democracy
Int_7	:	Trade	x	Democracy
Int_8	:	Inflation	x	Democracy
Int_9	:	Labour	x	Democracy
Int_10	:	Capita	x	Democracy

Test(s) of X by M interaction:

	F(HC3)	df1	df2	p
M1*X	.2603	1.0000	4.0000	.6368
M2*X	.3733	1.0000	4.0000	.5742
M3*X	.7280	1.0000	4.0000	.4416
M4*X	.0142	1.0000	4.0000	.9110

Test(s) of highest order unconditional interaction(s):

	R2-chng	F(HC3)	df1	df2	p
X*W	.0013	.0077	1.0000	5.0000	.9334
X*Z	.0126	.0574	1.0000	5.0000	.8202
BOTH(X)	.0641	.6240	2.0000	5.0000	.5729
M1*W	.0190	.3024	1.0000	5.0000	.6061
M1*Z	.0458	.7651	1.0000	5.0000	.4217
BOTH(M1)	.0648	.7015	2.0000	5.0000	.5388
M2*W	.0003	.0147	1.0000	5.0000	.9084
M2*Z	.0927	1.6645	1.0000	5.0000	.2534
BOTH(M2)	.0937	.8854	2.0000	5.0000	.4686
M3*W	.0039	.0431	1.0000	5.0000	.8436
M3*Z	.0572	.2765	1.0000	5.0000	.6215
BOTH(M3)	.0969	.3886	2.0000	5.0000	.6968
M4*W	.0499	.6707	1.0000	5.0000	.4501
M4*Z	.0969	.9429	1.0000	5.0000	.3761
BOTH(M4)	.1013	.4763	2.0000	5.0000	.6466

```

-----
Focal predict: FD      (X)
Mod var: GP           (W)
Mod var: Democrac (Z)

```

Data for visualizing the conditional effect of the focal predictor:  
 Paste text below into a SPSS syntax window and execute to produce  
 plot.

```

DATA LIST FREE/
  FD      GP      Democrac  GDP
BEGIN DATA.
  11.7579  24.3079  -.3910   2.3979
  14.0534  24.3079  -.3910   3.0325
  17.6249  24.3079  -.3910   4.0197
  11.7579  24.3079  .3628   10.2983
  14.0534  24.3079  .3628   8.7565
  17.6249  24.3079  .3628   6.3577
  11.7579  24.3079  .6503   13.3115
  14.0534  24.3079  .6503   10.9397
  17.6249  24.3079  .6503   7.2494
  11.7579  39.0252  -.3910   1.4437
  14.0534  39.0252  -.3910   2.2874
  17.6249  39.0252  -.3910   3.6000
  11.7579  39.0252  .3628   9.3440
  14.0534  39.0252  .3628   8.0114
  17.6249  39.0252  .3628   5.9380
  11.7579  39.0252  .6503   12.3573
  14.0534  39.0252  .6503   10.1946
  17.6249  39.0252  .6503   6.8297
  11.7579  113.6263 -.3910  -3.3931
  14.0534  113.6263 -.3910  -1.4893
  17.6249  113.6263 -.3910   1.4728
  11.7579  113.6263 .3628   4.5072
  14.0534  113.6263 .3628   4.2347
  17.6249  113.6263 .3628   3.8108
  11.7579  113.6263 .6503   7.5205
  14.0534  113.6263 .6503   6.4179
  17.6249  113.6263 .6503   4.7025
END DATA.
GRAPH/SCATTERPLOT=
  FD      WITH      GDP      BY      GP      /PANEL      ROWVAR=
Democracy.
-----

```

```

Focal predict: Trade  (M1)
Mod var: GP           (W)
Mod var: Democracy (Z)

```

Data for visualizing the conditional effect of the focal predictor:  
 Paste text below into a SPSS syntax window and execute to produce  
 plot.

```

DATA LIST FREE/
  Trade      GP      Democracy  GDP
BEGIN DATA.
  65.8307  24.3079  -.3910   5.4709
  76.8248  24.3079  -.3910   3.8218
  98.4113  24.3079  -.3910   .5837
  65.8307  24.3079  .3628   5.1085
  76.8248  24.3079  .3628   7.5332
  98.4113  24.3079  .3628   12.2940

```

65.8307	24.3079	.6503	4.9703
76.8248	24.3079	.6503	8.9488
98.4113	24.3079	.6503	16.7604
65.8307	39.0252	-.3910	3.7161
76.8248	39.0252	-.3910	2.7837
98.4113	39.0252	-.3910	.9528
65.8307	39.0252	.3628	3.3537
76.8248	39.0252	.3628	6.4951
98.4113	39.0252	.3628	12.6631
65.8307	39.0252	.6503	3.2155
76.8248	39.0252	.6503	7.9107
98.4113	39.0252	.6503	17.1295
65.8307	113.6263	-.3910	-5.1789
76.8248	113.6263	-.3910	-2.4785
98.4113	113.6263	-.3910	2.8236
65.8307	113.6263	.3628	-5.5413
76.8248	113.6263	.3628	1.2329
98.4113	113.6263	.3628	14.5339
65.8307	113.6263	.6503	-5.6795
76.8248	113.6263	.6503	2.6485
98.4113	113.6263	.6503	19.0003

END DATA.

GRAPH/SCATTERPLOT=

Trade WITH GDP BY GP /PANEL ROWVAR=  
Democracy.

-----  
Focal predict: Inflation (M2)  
Mod var: GP (W)  
Mod var: Democracy (Z)

Data for visualizing the conditional effect of the focal predictor:  
Paste text below into a SPSS syntax window and execute to produce  
plot.

DATA LIST FREE/

Inflation	GP	Democracy	GDP.
12.8409	24.3079	-.3910	6.4247
16.5956	24.3079	-.3910	5.0877
29.6826	24.3079	-.3910	.4274
12.8409	24.3079	.3628	8.2345
16.5956	24.3079	.3628	8.3805
29.6826	24.3079	.3628	8.8890
12.8409	24.3079	.6503	8.9248
16.5956	24.3079	.6503	9.6364
29.6826	24.3079	.6503	12.1164
12.8409	39.0252	-.3910	5.6522
16.5956	39.0252	-.3910	4.3348
29.6826	39.0252	-.3910	-.2567
12.8409	39.0252	.3628	7.4620
16.5956	39.0252	.3628	7.6276
29.6826	39.0252	.3628	8.2049
12.8409	39.0252	.6503	8.1523
16.5956	39.0252	.6503	8.8835
29.6826	39.0252	.6503	11.4322
12.8409	113.6263	-.3910	1.7361
16.5956	113.6263	-.3910	.5186
29.6826	113.6263	-.3910	-3.7246
12.8409	113.6263	.3628	3.5459

```

16.5956 113.6263 .3628 3.8114
29.6826 113.6263 .3628 4.7370
12.8409 113.6263 .6503 4.2361
16.5956 113.6263 .6503 5.0673
29.6826 113.6263 .6503 7.9644

```

END DATA.

GRAPH/SCATTERPLOT=

```

Inflation WITH GDP BY GP /PANEL ROWVAR=
Democracy .
-----

```

```

Focal predict: Labour (M3)
Mod var: GP (W)
Mod var: Democracy (Z)

```

Data for visualizing the conditional effect of the focal predictor:  
Paste text below into a SPSS syntax window and execute to produce  
plot.

DATA LIST FREE/

```

Labour GP Democracy GDP.
BEGIN DATA.
15.9252 24.3079 -.3910 10.8608
16.1350 24.3079 -.3910 2.8371
16.3224 24.3079 -.3910 -4.3292
15.9252 24.3079 .3628 7.7789
16.1350 24.3079 .3628 8.6251
16.3224 24.3079 .3628 9.3809
15.9252 24.3079 .6503 6.6034
16.1350 24.3079 .6503 10.8327
16.3224 24.3079 .6503 14.6101
15.9252 39.0252 -.3910 9.2915
16.1350 39.0252 -.3910 2.1420
16.3224 39.0252 -.3910 -4.2435
15.9252 39.0252 .3628 6.2096
16.1350 39.0252 .3628 7.9300
16.3224 39.0252 .3628 9.4666
15.9252 39.0252 .6503 5.0341
16.1350 39.0252 .6503 10.1376
16.3224 39.0252 .6503 14.6957
15.9252 113.6263 -.3910 1.3367
16.1350 113.6263 -.3910 -1.3814
16.3224 113.6263 -.3910 -3.8091
15.9252 113.6263 .3628 -1.7452
16.1350 113.6263 .3628 4.4065
16.3224 113.6263 .3628 9.9009
15.9252 113.6263 .6503 -2.9207
16.1350 113.6263 .6503 6.6142
16.3224 113.6263 .6503 15.1301

```

END DATA.

GRAPH/SCATTERPLOT=

```

Labour WITH GDP BY GP /PANEL ROWVAR=
Democracy.
-----

```

```

Focal predict: Capita (M4)
Mod var: GP (W)
Mod var: Democracy (Z)

```

Data for visualizing the conditional effect of the focal predictor:  
Paste text below into a SPSS syntax window and execute to produce  
plot.

```

DATA LIST FREE/
  Capita      GP      Democracy  GDP
BEGIN DATA.
  16.2642    24.3079    -.3910    -3.6115
  22.9369    24.3079    -.3910     4.4318
  27.2998    24.3079    -.3910     9.6908
  16.2642    24.3079     .3628     7.8682
  22.9369    24.3079     .3628     8.7426
  27.2998    24.3079     .3628     9.3144
  16.2642    24.3079     .6503    12.2466
  22.9369    24.3079     .6503    10.3868
  27.2998    24.3079     .6503     9.1708
  16.2642    39.0252    -.3910    -2.7307
  22.9369    39.0252    -.3910     3.3893
  27.2998    39.0252    -.3910     7.3908
  16.2642    39.0252     .3628     8.7489
  22.9369    39.0252     .3628     7.7001
  27.2998    39.0252     .3628     7.0144
  16.2642    39.0252     .6503    13.1274
  22.9369    39.0252     .6503     9.3444
  27.2998    39.0252     .6503     6.8708
  16.2642    113.6263   -.3910     1.7340
  22.9369    113.6263   -.3910    -1.8950
  27.2998    113.6263   -.3910    -4.2677
  16.2642    113.6263     .3628    13.2136
  22.9369    113.6263     .3628     2.4159
  27.2998    113.6263     .3628    -4.6441
  16.2642    113.6263     .6503    17.5921
  22.9369    113.6263     .6503     4.0601
  27.2998    113.6263     .6503    -4.7877
END DATA.
GRAPH/SCATTERPLOT=
  Capita  WITH      GDP      BY      GP      /PANEL  ROWVAR=
Democracy
Error encountered in source line #200222

Error # 12417
Source operand is singular for INV.
Execution of this command stops.

***** DIRECT AND INDIRECT EFFECTS OF X ON Y
*****

Conditional direct effect(s) of X on Y:
      GP      Democracy      Effect      se(HC3)      t      p
LLCI      ULCI
  24.3079    -.3910     .2764     5.4029     .0512     .9612
-13.6311    14.1839
  24.3079     .3628    -.6717     1.5514    -.4329     .6831
-4.6652     3.3219
  24.3079     .6503   -1.0333     .6688   -1.5449     .1830
-2.7548     .6883
  39.0252    -.3910     .3675     4.4107     .0833     .9368
-10.9859    11.7210
  39.0252     .3628    -.5805     .7261    -.7995     .4603
-2.4496     1.2885
  39.0252     .6503    -.9421     1.2508    -.7532     .4852
-4.1618     2.2775
  113.6263   -.3910     .8294     1.7867     .4642     .6620
-3.7698     5.4285

```

113.6263	.3628	-.1187	4.9085	-.0242	.9816
-12.7537	12.5163				
113.6263	.6503	-.4803	6.3499	-.0756	.9426
-16.8257	15.8651				

Conditional indirect effects of X on Y:

INDIRECT EFFECT:

FD           ->    Trade           ->    GDP  
 Error encountered in source line #201922

Error # 12354

Subscript is out of range.

Execution of this command stops.

\*\*\*\*\* ANALYSIS NOTES AND ERRORS  
 \*\*\*\*\*

Level of confidence for all confidence intervals in output:  
 95.0000

W values in conditional tables are the 16th, 50th, and 84th percentiles.

Z values in conditional tables are the 16th, 50th, and 84th percentiles.

NOTE: A heteroscedasticity consistent standard error and covariance matrix estimator was used.

NOTE: Variables names longer than eight characters can produce incorrect output.

Shorter variable names are recommended.