**CORPORATE GOVERNANCE AND CORPORATE SOCIAL RESPONSIBILITY: MODERATING ROLES OF FIRM SIZE IN NIGERIA**

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**BEING AN INTERNAL DEFENSE THESIS PRESENTED TO THE DEPARTMENT OF ACCOUNTING, MALLAM SANUSI LAMIDO SANUSI COLLEGE OF BUSINESS AND MANAGEMENT STUDIES, IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF DOCTOR OF PHILOSOPHY (Ph.D.) DEGREE IN ACCOUNTING**

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**DECLARATION**

I declare that:

1. This Thesis report is based on the study undertaken by me, ATU, EFOSA COLLINS in the department of Accounting, Igbinedion University Okada under the supervision of DR. (MRS.) MARY JOSIAH and PROF. RAPHAEL IGBINOSA ADEGHE.
2. This Thesis report has not been submitted elsewhere for the award of a degree or diploma.
3. The ideas and views of the research thesis are products of research undertaken by me.

Where the ideas and views of other authors/researchers have been expressed, they have been duly acknowledged.

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# CERTIFICATION

We the undersigned certify that this research work was carried out by ATU, Efosa Collins and is adequate in scope and quality. The necessary requirements in respect of the Ph.D. (Accounting) degree have been strictly followed.

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**DEDICATION**

I dedicate this study to GOD ALMIGHTY, my amiable, loving caring, understanding and prayerful family. And to all those who believe that it is wrong to give up on a day when the night has not come.

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I first of all acknowledge my creator, My Lord and my God who never allowed my enemies to triumph over me. He made this whole exercise successful despite all odds. With the whole strength and breath in me, I cannot thank nor praise Him enough for all that He has done, all that He is doing, and all that He will be doing.

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# ABSTRACT

The study examines corporate governance and corporate social responsibility, the moderating role of firm size among non-financial companied quoted in the Nigerian Stock Exchange (NSE). The study is motivated by the dearth of research work, specifically on the moderation of firm size on firm-level governance impacting corporate social responsibility. The study adopts a quantitative research design, with a population of one hundred and eight (108) non-financial companies during the period 2014 to 2020. A sample size of seventy (70) companies was determined which was randomly selected from the population. The data was sourced from the annual reported of the sampled companies and analyzed using the panel estimation technique. The result from the panel estimation revealed that: BS exhibits positive insignificant impact

0.007 (p= 0.875) at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to increase by up to 0.7% when BS increase by one percent. BND exhibits positive significant impact 1.555 (p= 0.059) at 10%. This implies that corporate social responsibility is predicted to increase by up to 1.56 % when BND increase by one percent. BGD exhibits positive insignificant impact 1.129 (p= 0.204) at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to increase by up to 1.129% when BGD increase by one percent. BFX exhibits inverse insignificant impact -0.133 (p= 0.918) at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to decline by up to 13.3% when BFX increase by one percent. BS\*FS exhibits inverse insignificant impact -0.042 (p= 0.121) at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to decline marginal by up to 4.2% when BS increase by one percent when moderated with firm size. BND\*FS exhibits inverse significant impact -1.131 (p= 0.059) 5%. This implies that corporate social responsibility is predicted to decline marginal by up to 1.13% when BND increase by one percent when moderated with firm size. BGD\*FS exhibits positive insignificant impact 1.075 (p= 0.140) 5%. This implies that corporate social responsibility is predicted to increase marginal by up to 1.08% when BGD increase by one percent when moderated with firm size. BFX\*FS exhibits positive insignificant impact 1.397 (p= 0.238) 1%, 5% and 10%. This implies that corporate social responsibility is predicted to increase marginal by up to 1.40% when BFX increase by one percent when moderated with firm size. Based on the outcome, it can be summarised that in the Nigerian context, corporate governance plays insignificant role in determining companies’ inclination on corporate social responsibility activities. Also, the size of companies does not enhance the relationship between corporate governance and corporate social responsibility activities. The study recommends that as companies grow in size, corporate social responsibility activities should be entrenched as this has the tendencies to boost their image.

**Keywords:** Corporate governance, corporate social responsibility, board financial expertise, board composition.

# Word count: 463

**CHAPTER ONE INTRODUCTION**

# Background to the study

Corporate reporting based only on accounting standards allows companies to externalize environmental and social costs due to the fact that financial results are not placed within the context of the greater economy, society or the environment in which the business operates (Terry, 2008). According to Eccles and Krzus (2010), traditional corporate reports are increasingly less relevant and useful for analysts and investors as they are difficult for even the most sophisticated users to understand. The users of financial information today, need the data that would allow them to assess whether the entity is environmentally, socially and financially responsible. It is expected that businesses should do more than simply turn in financial statements in line with the accounting standards. They are expected to operate in a manner that is socially and ethically responsible as well as minimize negative impacts on the environment. They should also contribute positively to the community where they operate by taking into consideration the varied needs of their stakeholders. Consequently, all of these pressures have contributed to making the concept of Corporate Social Responsibility (CSR) more popular in the international business community.

According to Dahlsrud (2006), CSR generally refers to business practices that are based on ethical values, compliance with legal regulations, and respect for people and the environment. Carroll (1979) opined that there are four parts of CSR, known as the ‘’Carroll’s Pyramid of CSR’’: economic, legal, ethical and philanthropic expectations that society has toward an organization. Through Carroll point of view, CSR obligations should be taken in order from bottom to top, from economic responsibility to legal to ethical and to philanthropic. If a corporation achieve the first

responsibility efficiently, then it can move to the next one (Carini et al., 2017). The corporate social responsibility concept within which companies integrate concern for society and environment as a whole and accordingly direct interaction with shareholders and course of action for the company attracted a lot of attention in the 1970s. Numerous authors have recognized the impact that company activities have on the external environment and it was suggested that one role of accounting reports should be focused on this issue. But there were authors who believed that there is no reason why shareholders would tolerate non-profit activities of the company because it would reduce their dividends and company’s earnings. Meanwhile, Friedman (1970) is of the opinion that in the matters of any company, there is only one social responsibility – to engage their funds in activities that are designed to increase profit, but without violating the rules of the game (Crowther, 2008).

In Nigeria, the aftermath of the Niger Delta crises sparked both corporate and government interest on corporate social responsibility in the country. Since the emergence of CSR in the country, there is no law put in place by the Nigeria Government in the area of corporate social responsibility. CSR is still at the discretion of the companies. Businesses primarily exist to make profit. The profit motive has often been perceived as representing a lack of concern for all other objectives of an organization. But, today businesses are realizing that in order to stay profitable in a rapidly changing environment, they would have to become socially responsible (Osemeke, Adegbite & Adegbite, 2016). Therefore, the belief over time that beyond making profit for the shareholders of the company, business enterprises should also serve the interests of all other stakeholders. Presently, businesses continually face pressures and tension from different stakeholders, such as employee pressures to recognize certain employee rights in the workplace, consumer pressures for the business to withhold price increase and to produce safe products,

community and environmental pressures that the business operation does not threaten the safety of the local community (McWilliams & Siegel, 2011). Giving that CSR is at the discretion of companies, this study seeks to investigate how corporate governance would impact CSR, specifically considering the moderating role of firms as they grow in size.

# Statement of research problems

Organizational performance has attracted scholarly attention in corporate Governance literature over several decades. However, in the context of Non-Financial sector, it has received a little attention in developing economies. The objective of this study is to determine the relationship between Corporate Governance characteristics, and corporate social responsibility by using the firm size as a moderating role on quoted Non-financial companies.

Various research studies have been undertaken by researchers in different countries to examine corporate social responsibility and its relationship with firm size and corporate governance. However, the results have been inconclusive, inconsistent, and often contradictory. Anthonio, Lucia and Russell, (2011) found a positive relationship between Corporate governance effects and corporate social responsibility, the study used Tobins Q to measure the firm attributes by using mixed market and accounting based measures. Kader and Cigdem (2011) found significant impact between firm size, board composition and corporate social responsibility in Turkey, using the regression analysis method to analyze data gotten from the firms listed on the Istanbul stock exchange in 2007. Bernardi and Veronica (2010) assessed whether or not gender has tangible effect on the company’s firmness or weakness in Corporate Governance, of which the results of this study showed an association between the number of female directors on a corporate board and the incidence of corporate social behavior including: charitable giving, community involvement, and outside recognition of employee benefit.

Meanwhile, Hermalin and Weisbach (1991) found out no relation between firm performance and the proportion of outside directors. The study used the Tobin’s q to measure the firm performance by using mixes market-based and accounting based measures. Results from Shashank, Maria and Lazaro (2018) after using the Tobin’ Q estimation, revealed that Board independence is negatively associated with CSR.

Moreso, Yimming, Xingue and Youngguen (2018) employed the generalized least square regression method to determine the relationship between CSR and Board composition, and the results showed that the political experience, oversea experience and academic experience are positively related to firms CSR performance. Lefort and Urzua (2008) reviewed CEO Powers, CSR and firm value and the results show that CEO power is negatively correlated with firms’ choice to engage in CSR and with the level of CSR activities in the firm. The review from Healy et al (2007) concludes that very small and very large firms may be equally inclined to participate in CSR activities, however their motivations for doing so may differ. Lastly, the study from Yuyu and Zhang (2012) revealed that firms with foreign directors are less likely to engage in voluntary CSR.

In Nigeria however, to the best of the researcher’s knowledge, it appears there is no study yet that has investigated the exact relationship between Corporate Governance characteristics, corporate social responsibility and the moderating roles of firm size. Against this background, the aim of this study is to bridge the gap in knowledge as regards Corporate Governance characteristics, corporate social responsibility and the moderating roles of firm size on Quoted Non-financial companies.

# Objectives of the Study

The broad objective of this study is to investigate the relationship between corporate governance characteristics and corporate social responsibility: moderating roles of firm size in quoted non- financial companies. The specific objectives are to:

* + 1. determine the relationship between board size and corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange;
    2. examine whether board independence has any relationship with corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange;
    3. investigate the impact of board gender diversity on corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange;
    4. investigate the impact of board financial expertise on corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange; and
    5. examine the moderating role of firm size on the relationship between corporate governance and corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange.

# Research Questions

The following are the research questions:

* + 1. What is the relationship between board size and corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange?
    2. What is the relationship between board independence and corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange?
    3. What is the relationship between board gender diversity and corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange?
    4. What is the relationship between board financial expertise and corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange?
    5. What is the moderating role of firm size on the relationship between corporate governance and corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange?

# Research Hypotheses

The following are research hypotheses

**H01:** Board size has no significant impact on corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange?

**H02**: Board independence has no significant impact on corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange?

**H03**: Board gender diversity has no significant impact on corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange?

**H04**: Board financial expertise has no significant impact on corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange?

**H05:** Firm size has no significant moderating impact on the relationship between corporate governance and corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange?

# Scope of the Study

This study thrives to harness corporate governance attributes and corporate social responsibility as a tool for tracking down the moderating roles of firm size on quoted non-financial companies on the floor of the Nigerian Stock exchange market. Consequently, the study covers the seventy

(70) non-financial companies quoted on the Nigerian Stock Exchange Market (NSE, 2020) between the periods 2014 to 2020.

# Significance of the Study

As the use of corporate responsibility expands, it is becoming extremely paramount to have a socially conscious image. Customers, employees and stakeholders are beginning to priotize CSR when choosing a brand or company. Consequently it becomes also relevant to exercise due care in accessing the efficiency of a company’s corporate Governance as it is one of the most important corporate financial/non-financial policies not only from the company’s point of view but also from that of the shareholders, the consumers, employees, regulatory bodies, the Government, etc.

The relationship between corporate social responsibility (CSR) and corporate governance (CG) is important to both managers, students and researchers. A relationship between these variables could have a significant impact on how the company approach Corporate Governance, and whether or not the firm is likely to show surmountable interest. A negative relationship might provide a warning to managers to think carefully when deciding on whether to undertake CSR (Cochran, 1984).Firm size/attributes and Corporate Governance, when paired and compared with the conditions and performances of business enterprises in order to evaluate their significant effects on corporate social responsibility.

The result of this research will be relevant to the following:

It will x-ray the usefulness of firm attributes in evaluating companies’ performance towards the compliance with corporate social responsibility policies set by Management. The study will also be beneficial to all economic units, Public limited companies, stakeholders, creditors, managers,

debtors, employees, etc. It will enlighten prospective investors in companies by enabling them decipher certain firm attributes as they affect compliance with CSR policies. Researchers and other scholars in accounting and finance will also find this study useful as well in their bid to further knowledge on issues relating to trending researchable issues. It will assist management in decision making with regards to how well or not they have performed. The study will enlighten government more on the contributions of companies to the operating environment and the economy at large and finally, this study can assist existing investors to knowing whether to continue with the investment or to withdraw their interest from the company.

# Limitations of the Study

The study could not undertake a sectoral comparison on corporate social responsibility. A sectoral approach would have shared light on how corporate social responsibility respond to sectoral sensitivity. The study could not make use of CSR proxy such as disclosure survey, disclosure index and content analysis which are comprehensive measures of CSR due to the fact that they are labour intensive in generating the data set and could possibly restrict the sample size. Again, these measures were not used because it could possibly limits comparison with other studies due to the possibility of full involvement in developing these CSR measures. Therefore, this research took a middle position by surrogating corporate social responsibility by the actual amount/cost expended on CSR activities. Although this approach does not take into cognizance non-financial aspects of CSR activities, however the study is able to enhance its sample size because it is less labour intensive.

# Definition of Operational Terms Corporate social responsibility:

A company’s commitment to improving or enhancing community well-being through discretionary contributions of corporate resources (Lipton, Rosenblum & Cain, 2014)

# Corporate Governance

Processes and structure by which the business and affairs of the company are directed and managed, in order to enhance long term shareholder value through enhancing corporate performance and accountability, whilst taking into account the interests of other stakeholders. Good corporate governance therefore embodies both enterprise (performance) and accountability (conformance).

# Board Independence

The state in which all or a majority of the members of a [board of](https://financial-dictionary.thefreedictionary.com/board%2Bof%2Bdirectors)

[directors](https://financial-dictionary.thefreedictionary.com/board%2Bof%2Bdirectors) do not have a relationship with the company except as directors. For example, they may

not be relatives of the company's founders, key players or major [employees](https://financial-dictionary.thefreedictionary.com/employee) (Farlex Dictionary,

2012)

# Board Size

This could be defined as the number of Directors charged with the responsibilities of strategic decision making in a company. In most cases the Board size is inclusive of the Chief Executive officer and an Appointed Chairman of the board.

# Firm Size:

This is the total worth of a firm. It can be in form of total assets, total sales, average cost of production per unit (Carter, Simkins, & Simpson, 2003)

# Board Composition

This includes individuals with diversity of experience and viewpoints. Evaluating board composition means thinking about what the board has, and what it needs. Many boards conduct a gap analysis that compares the attributes its directors have with those the board thinks are critical for effective oversight.

# Board Financial Expertise

According to the Sarbanes-Oxley Act (SOX) of 2002, a financial expert is a person who has experience in accounting or finance or has supervisory expertise. The implicit assumption is that an understanding of generally accepted accounting principles and financial statements will lead to better board oversight and serve the interest of shareholders. In the aftermath of corporate accounting scandals, research studies argued that the lack of financial expertise of board members played a major role in banks failures. The expertise of the board members is essential to good corporate governance. Board members with relevant experience in addressing sustainable development issues are also important as they have a wider variety of resources to solve problems and encourage CSR practices.

# CHAPTER TWO LITERATURE REVIEW

# 2.1.Introduction

The purpose of this chapter is to provide an overview of the essence of Corporate Governance attributes, and corporate social responsibility as regards the moderating roles of firm size. The chapter shall be looking at the conceptual framework of Corporate Social Responsibility; then, it shall look Corporate Social Responsibility initiatives, while further extensively explaining the role of Government in Corporate Social Responsibility implementation; Furthermore, the chapter shall explain Corporate Governance in detail, and then the effects of the independent variables (Board Independence, Board size, Female Directors, Chief Executive Officer duality, Board Composition, firm size etc.). It shall also reveal the factors affecting Corporate Governance, then it shall extensively show light on the review of empirical results associated with the study. In depth, this section shall look at the review of prior studies and a review of the Theoretical framework which the study is based, i.e. Stakeholder Theory, stewardship Theory and Triple Bottom line Theory.

# Conceptual Issues

A conceptual framework represents the researcher's synthesis of literature on how to explain a phenomenon. It maps out the actions required in the course of the study given his previous knowledge of other researchers' point of view and his observations on the subject of research. (Yue, 1992).

# Corporate Social Responsibility

CSR information is gradually gaining importance in the global economy and firms have widely adopted it as the medium of communication with all stakeholders (Cho, Seong, Cheo, Ray &

Pfeiffer Jr. 2013.). Among the voluntary disclosures, CSR information is used as the most valuable information by analysts and investors (Prince’s accounting for Sustainability Project Report 2013). While there is currently no universal definition of corporate social responsibility, scholars have propitiated numerous definitions of the term. Meshane and Glinow (2003) define social responsibility as a persons or organization moral obligation towards others who are affected by his or actions. In the assertion of Holme and Watt (2001), it is the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families, as well as the local community and the society at large. It is anchored on the philosophy that businesses as natural or artificial persons should take decisions that are considered indeed to be in the interest and benefit of a large number of people, hence, have respect for the fundamental right of the public of the organization. Carroll (1999) defines corporate social responsibility as the conduct of business so that it is economically profitable, law abiding, ethical and socially supportive. McWilliams and Siege (2011) also explained corporate social responsibility as the actions that appears to further some goods beyond the interest of the firm.

The classical view of CSR was narrowly limited to philanthropy and then shifted to the emphasis on business-society relations particularly referring to the contribution that a corporation or firm provided for solving social problems. In the early twentieth century, social performance was tied up with market performance. The pioneer of this view, Oliver Sheldon (1923, cited in Bichta, 2003), however, encouraged management to take the initiative in raising both ethical standards and justice in society through the ethic of economizing, i.e. economize the use of resources under the name of efficient resource mobilization and usage. By doing so, business creates wealth in society and provides better standards of living.

The present-day CSR (also called corporate responsibility, corporate citizenship, responsible business and corporate social opportunity) is a concept whereby business organizations consider the interest of society by taking responsibility for the impact of their activities on customers, suppliers, employees, shareholders, communities and other stakeholders as well as their environment. This obligation shows that the organizations have to comply with legislation and voluntarily take initiatives to improve the well-being of their employees and their families as well as for the local community and society at large (Ehikioya, 2009).

The case for CSR was driven by debates on the regulation of Multi-National Companies (MNCs) and the globalization process that exposed MNCs to a range of new challenges (Kapelus, 2000). In particular, Beck (1992) points out that while the environmental and social hazards associated with MNCs activities increasingly dominated the public agenda, and caught the interest of the public in industrialized societies, they simultaneously became a cause for concern in developing countries. This prompted an avalanche of negative protests against MNCs, driven by a coalition of the environmental justice movement, the anti-globalization activists and the local community activists. CSR has increasingly been seized upon as a means for successful corporations to improve their social and environmental practices continuously through innovative strategies that involve improved relations with the society, and responsibility for the impacts of their business activities on the communities and the environment (Eweje, 2007)

CSR simply refers to strategies corporations or firms conduct their business in a way that is ethical and society friendly. CSR can involve a range of activities such as working in partnership with local communities, socially sensitive investment, developing relationships with employees, customers and their families, and involving in activities for environmental conservation and sustainability (Ehikoya, et al*.,* 2009*).* According to the definition of Carroll (1979), Corporate

Social Responsibility (CSR) encompasses the economic, legal, ethical and philanthropic expectations that society has of organizations at a given point in time. “Furthermore, these four categories or components of CSR might be depicted as a pyramid. To be sure, all of these kinds of responsibilities have always existed to some extent, but it has only been in recent years that ethical and philanthropic functions have taken a significant place (Carroll, 1991, p. 40). CSR information is useful to different stakeholders as it covers a wide number of topics related to economic, social and the environment (Williams & Pei 1999). The investor uses CSR information as one of the important factors while making an investing decision (Cohen, Lori, Leda, & Wood, 2011; Chau, Wai & Fong 2006) and it also reduces the information asymmetry in the firms (Dhaliwal, Suresh, Albert, Dan & Yung, 2012). However, due to the voluntary nature of CSR information, its disclosure could be purely based on the preference and motives of the managers and directors (Healy & Palepu 2001; Meek, Roberts, Gray, & Sidney, 1995).

# Corporate Social Responsibility Initiatives

The CSR initiatives of companies in Nigeria are wide-ranging and cover critical infrastructure like beautification projects, roads, electricity, markets, civic centres, among others. For example, Fidelity Bank, a large commercial bank in Nigeria, spends about USD1 million each year on CSR through diverse projects across including the renovation of schools, provision of water to prisons, facilities for widows, computers for the blind, as well as equipment for hospitals (Amaeshi, Adegbite & Rilwani, 2014). So far, there are expectations that companies offer certain benefits to their employees and the communities where their facilities are located, but these benefits are often non-specific nor focused only on a specific enterprise. In addition to being motivated by concrete needs, expectations reflect traditional views of a company’s or an

entrepreneur’s responsibilities toward employees and the community. In addition to benefiting society, CSR initiatives are often undertaken as a way of promoting a company’s image. CSR in Nigeria is philanthropic in nature and has culture of charity as companies and wealthy individuals contribute to charitable causes and use these contributions to garner positive publicity.

Moreover, CSR initiatives in Nigeria tend to be culturally oriented (Helg, 2007). Altogether, the practice blends into other activities which reflect the religious, educational, linguistic, ethnicity and traditions of the people (Amaeshi, Bongo, Olufemi & Ogbechie 2006). According to Helg (2007) CSR in Nigeria reflects the communal lifestyle of the people which involves sharing, togetherness and consensus in CSR practices. It follows that these cultural influences help to shape CSR practices in Nigeria. It is clear that CSR practices in Nigeria are still largely characterized by donations, charities and community developments. Therefore, some authors argue that CSR practices are unsustainable in Nigeria (Eweje, 2007). As a result, it is difficult to say that the Public Liability Company (PLCs) is practicing strategic CSR as evidenced by developed countries. The CSR initiatives of companies in Nigeria are wide-ranging and cover the following:

**Agriculture:** Microcredit schemes are provided to farmers’ co-operative societies and the farmers are encouraged with know-how and equipment in the areas of fish farming, poultry, and so on.

**Education:** Programmes cover infrastructure; scholarships for primary, post-secondary and post- graduate education ininstitutions. For example, Total Plc. in Port Harcourtruns programs such as the “Catch-them-Young”. Also, most MNCs (Shell, Mobil and Chevron) have been involved in

either school renovation projects or building of school blocks for communities in Nigeria (Amao & Amaeshi, 2008)

**Health:** Companies develop infrastructure by building health care centers or offer free health programmes such as HIV/AIDS awareness campaigns, malaria prevention campaigns, and the donation of drugs (Osemeke et al., 2016)

**Water supply:** Most companies provide bole-hole water to communities. Examples include the NNPC/TEPNG joint venture that supplies portable water to 17 communities across 16 locations with 300,000 gallons capacity in strict observance of WHO standards. **Employment:** Under specific Memoranda of Understanding (MOU) provisions, qualified youths from the communities are not only given employment opportunities, they are also integrated into the company’s on-going projects (Osemeke et al., 2016).

# Measures of Corporate Social Responsibility

Prior research have employed several measures of corporate social responsibility. Among these measures are questionnaire and interview methods, disclosure index and content analysis. The questionnaire and interview approach have been used by prior studies such as Botosan and Plumlee (2002), Healy, Hutton and Palepu (1999). This method examines disclosure by investigating perceptions of financial analysts, investors or other user groups about firms’ disclosure practices through questionnaires or interviews. The perception of financial analysts are investigated within three categories: annual published and other required information, quarterly and other published but not required information and other aspects of disclosure such as investor and analyst relations. The final disclosure score of a particular company is calculated as a weighted average of the three categories’ ratings. Although this method has the advantage of

being less labour intensive which could enhance the sampled size of a study, however, the quality of design of the research instrument could affect the result outcome. Also, the objectivity of the views obtained could be relative.

The disclosure index was first used by Cerf (1961) by developing a disclosure index consisting of 31 items, with a rating of on a scale of 1 to 4. A disclosure score is obtained by dividing the number of information items disclosed by the total number of items on the checklist. The degree of the researcher involvement in constructing a disclosure index varies from full involvement to no involvement. Full involvement means that the researcher controls the entire process of constructing a disclosure index from selecting the items of information to be included in the index, to scoring these items. No involvement means that the researcher depends on available disclosure indices from prior studies or professional organisations. A number of prior studies use available disclosure indices from professional organisations as measures of disclosure level (Patel, Balic & Bwakira, 2002; Richardson & Welker, 2001). According to Marston and Shrives (1991), using an existing index has an advantage in that direct comparisons with previous research work can be made unlike full involvement which could lead to several varieties of disclosure indices and this could hinder comparison. Another arguments surrounding the use of disclosure score is the issue of whether these scores should be weighted or unweighted. Although both approaches have used, however not without some shortcomings. The use of an unweighted disclosure index has been criticised on its fundamental assumption that all items are equally important, and the use of a weighted disclosure index has been criticised because it may introduce a bias towards a particular user-orientation. One shortcomings of self-constructed disclosure index studies generally employ small samples due to the labour-intensive data collection process.

Finally, content analysis has also been used to measures corporate social responsibility disclosure (Beretta & Bozzolan, 2004; Linsley & Shrives, 2006). According to Krippendorff (1980), it is a research technique for making replicable and valid inferences from data to their context. It involves counting of data items, i.e. the number of words, the number of sentences, and the number of pages (Hackston & Milne, 1996; Marston & Shrives, 1991). Content analysis could take two forms: mechanistic and interpretative. The mechanistic approach capture and describe a surrogate assumed to convey meaning and reporting intent (Campbell, 2000). Typically, these studies are ‘form oriented’, which means the focus is on volumetric or frequency capture and semiotic assumptions tend to be applied. Smith and Taffler (2000) contrasted this with ‘meaning orientation’ suggesting that ‘form orientated’ content analysis involves “routine counting of words or concrete references” whilst ‘meaning orientated’ analysis “focuses on the underlying themes in the texts under investigation. On the other hand, interpretative analysis attempts to capture meaning by disaggregating narrative into its constituent parts and then describing the contents of each disaggregated component (Milne, Tregidga, & Walton, 2003; Raar, 2002). Interpretative approach seeks to gain greater understanding of what is communicated and how (Aerts, 2005). They are, therefore, more concerned with the quality, richness or qualitative character of the narrative (Buhr & Reiter, 2006; Tregidga & Milne, 2006). One possible limitations of content analysis is that it is labor-intensive, consequently it restricts the sample size employed by most studies. From the foregoing, giving the limitations of restricted samples size of the aforementioned proxy and lack of in ability to make comparison in a situation of full involvement in developing these measures, this research took a middle position by surrogating corporate social responsibility by the actual amount/cost expended on CSR

activities. In doing this, the study will be able to enhance its sample size because it is less labour intensive.

# The Role of Government on CSR Implementation

Guarini and Nidasio (2003) explored how governments should shape policy making, performance measurement and reporting in order to facilitate the interaction with responsible business practices. He concludes that the voluntary CSR practices of private firms are not and cannot be an effective substitute for good governance. Governments also play a mandating role by defining minimum standards for business performance. Ward (2007) pointed out that the government should encourage the CSR agenda by supporting the debate over transnational legal risk management, compliance and enforcement issues. He further said, government can drive mandatory requirements through voluntary CSR practices, for instance by requiring corporations to comply with child labor laws within their procurement with suppliers.

Government can also play a facilitating partner or endorsing role, by helping to raise expectations about business behavior in stakeholders groups including employees, consumers, investors and NGOs (Fox, 2002). This can tilt the market so that socially and environmentally responsible products are more attractive to consumers (Holmes, 2001). Whereas it is a business initiative to achieve "Win-Win" goals for all stakeholders, it is argued that governments help to ensure the compatibility of CSR policy with other public policies. This distinction is important because it underlines that it is the role of government to design and deliver public policy, to which business may contribute through CSR initiatives.

Rowe (2005) further observed that the business case approach to CSR tends to view the public sector as independent and not subject to external factors, such as structural conditions that may

affect government ability to assist in the emergence and sustenance of an enabling environment for CSR. He argued that business and government have to get past the idea that the business case is all that is necessary worry about i.e. that if one can persuade business that it is in their commercial interest to be more responsible, that it will be sufficient incentive for better business practice.

# Corporate Governance

Corporate governance as a whole which means administration and control system of companies. The definition is not entirely unambiguous, but it generally refers to a system that includes the roles and responsibilities of key persons of companies and their relationship with the shareholders. These key persons are the company’s board of directors and recruited management. “Simplified corporate governance means a system for managing and controlling business activities.” (Securities Market Association 2015 a)

Corporate governance can also be described in the following way: It is a system that provides guidelines on how to manage and supervise the company to achieve its goals and create value for the company. At the same time, it will benefit all stakeholders in the long term. These stakeholders include, among others, management, shareholders, customers and the community. The system is based on principles such as honesty and fairness, being transparent in respect of all transactions. In addition, the business is carried out by making all necessary decisions and communications in compliance with the laws of each country, responsibly to the company’s stakeholders, and committed to make business ethically. It is also an important fact that those who lead the company see the difference between their own and the company’s assets. (Lermack, 2003)

In the simplest, the purpose of corporate governance is to control the management’s activities. Through that control, the owners of the company strive to ensure the best return on their investment. The aim is to get the management of the company to work best for the owners. Such a corporate governance system that aims to maximise the value of a share, is familiar from the US. The Japanese and the German system emphasize also expectations and requirements of other stakeholders. While the share of foreign capital in Finland has increased, the raise of the share value has become increasingly central in the management and control of the company (Luoma, & Goodstein, 1999).

# Board Independence

Board independence has been the focus of much corporate governance debate in recent years. Board independence is considered to be highly important with regard to the independent director’s ability to monitor shareholders’ interest because they are able to judge firm performance independently (Ahmed, Islam & Hassan, 2006). There is visible difference of ownership structure between the developed and developing countries that may affect the effectiveness of corporate governance mechanisms. In most of the developing East Asian countries, the separation of management from ownership control is rare and wealth is very concentrated in the hands of few families (Claessens, Djankov, & Lang, 2000). Significant family or management control on board matters hamper the effectiveness of independent director’s role. Besides ownership structure, culture has a significant explanatory power for earnings management around the world (Han, 2010; Doupnik, 2008). In most of the East Asian countries such as India, Singapore and China where family and community relationships are important, the loyalty ethnic may override the capacity for directors to be truly independent (Kimber & Lipton, 2005).

Given strong cultural influences and highly concentrated ownership structure, it is important to ascertain effective corporate governance from the lenses that complement agency theory. Recall that stakeholder consideration is central to the concept of corporate governance particularly in a more community based countries such as East Asian. Recent studies on independent directors’ role given more emphasize on stakeholder issues such as corporate social responsibility. According to Luo, Le, Yi-Chen and Qingliang (2012), the board of directors enjoys full discretion in revealing the information and in deciding the content of the report to be disclosed.

In such cases, the independent director plays a very important role as they are not only accountable to shareholders but also ensure the welfare of other stakeholders (Ibrahim &Angelidis 1995); they also engage in motivating firms to disclose sustainability information (Frias-Aceituno, José, Lazaro, Isabel & Garcia-Sanchez, 2013a). So, the independent director may encourage disclosure of CSR information in the firm. However, for independent directors, decisions regarding CSR reporting are closely linked to their concern for career and reputation. The independent directors rely on the manager for the information related to CSR and managers always possess a risk of receiving manipulative or misleading information (Kravet & Muslu 2013; García-Sánchez & Martinez-Ferrero, 2018). The CSR information, in which they usually do not have to be experts (Cramer & Hirschland 2006), supposes the risk that any misleading information can damage their reputation and may affect their future job opportunity in other firms (Fama & Jensen 1983; Fama 1980). Berghe and Baelden (2005) examined the issue of independence as an important factor in ensuring board effectiveness through the monitoring and strategic roles of the directors. The ultimate factor for the board independence is by acquiring enough numbers of the independent directors on board. They stated that the director’s ability, willingness and board environment might lead to the independent attitude of each director.

Kakabadse, Yang and Sanders (2010) narrated the effectiveness of non-executive directors in China is determined by their formal independence, information accessibility, incentives provided and competency. However, they found out that the non-executive director system in China was weak because there was too much intervention of controlling shareholders and there was a lack of understanding of the functions of non-executive directors. CSR issues (Cheng & Courtenay 2006) and the independent director may show some opposition to CSR information and may have a negative association with CSR disclosure of the firm. However, García-Sánchez and Martinez-Ferrero (2018) find CSR performance and disclosure are positively associated, a higher performance, better information disclosure. In this sense, greater social and environmental performance reduces independent director reputation risk associated with receiving misleading information.

According to Corporate Governance Principles (CGP) of Turkey published by Capital Markets Board of Turkey (CMB), the formation of the board of directors should be structured so as to optimize effect and efficiency. In this context, emphasizing the need for the independence of the board of directors, “it was recommended that the board of directors be constituted of at least two independent members and that at least one third of the members fulfill the criteria for independence”. Therefore, the BOD shall make deliberate decisions on strengthening the firm’s stance/reputation on the corporate social responsibility assertions. Based on the view that corporate governance enhances transparency/accountability, researchers have linked board composition to various disclosures such as mandatory reporting (financial reporting) as well as non-mandatory voluntary disclosure including CSR disclosures. The evidence indicating the link between board composition and disclosure is mixed. For instance, Chen and Jaggi (2001) found a positive association between a firm’s mandatory financial disclosures and the proportion of

independent non-executive directors. Eng and Mak’s (2003) result on the other hand indicated that non-mandatory disclosure in Singapore is significantly and negatively associated with percentage of independent directors. Ho and Wong (2001), using a direct measure of voluntary disclosure based on analyst perception, were unable to confirm a significant relationship between the level of voluntary disclosure and board independence.

# Board Size

Board size is a significant factor to the performance of a Board of Directors, the board is a very vital mix of personnel and skill to help drive the company to attain its set goals and objectives. The earliest literature on board size is by Lipton and Lorch (1992) and Jensen (1993). Jensen (1993) argued that the preference for smaller board size stems from technological and organizational change which ultimately leads to cost cutting and downsizing. Hermalin and Weisbach (2003) argued the possibility that larger boards can be less effective than small boards. When boards consist of too many members agency problems may increase, as some directors may tag along as free-riders. Lipton and Lorch (1992) recommended limiting the number of directors on a board to seven or eight, as numbers beyond that it would be difficult for the CEO to control. A large board could also result in less meaningful discussion, since expressing opinions within a large group is generally time consuming and difficult and frequently results in a lack of cohesiveness on the board (Lipton & Lorch, 1992). In addition, the problem of coordination outweighs the advantages of having more directors (Jensen, 1993) and when a board becomes too big, it often moves into a more symbolic role, rather than fulfilling its intended function as part of the management (Hermalin & Weisback, 2003).

Board size is one of the most important attributes when considering the possibility of running an effective management of a company. It helps to inflict some amount of pressure on the

effectiveness of the board’s monitoring role since a large board may have more experience, knowledge, and opinions from different sources. Two opposite stances regarding board size and efficiency can be found in the literature. One views large boards positively while the other advocates smaller boards. Large boards may enhance the board’s monitoring capabilities and reduce the discretionary power of managers (De Andres &Vallelado, 2008). Large boards may also reflect a range of backgrounds, contributing broader knowledge and different ideas to the discussion (Ahmed, Islam & Hassan 2012).

On the other hand, larger boards take more time over exchanges, decisions and reaching a consensus. This reduces the efficiency of their monitoring role. However, these benefits may be offset by the slower communication and less efficient decision making typical of large groups. The lack of a cohesive framework may cause conflict within the group and thus diminish the board’s monitoring capacity (Bulto, 2013). In this sense, Jensen (1993) found that bigger boards are less coordinated and thus more susceptible to CEO control. Small boards, on the contrary, are deemed more efficient for decision making but are influenced by managers (Jensen, 1993). According to Benson, Pfeffer and Salancik (1978), a greater board size has an impact on links with the external environment. Larger boards reflect a wider range of stakeholders. Luoma and Goodstein (1999) conducted a study on publicly traded US firms, finding that stakeholders were better represented in larger firms (Luoma& Goodstein, 1999). Several studies highlight that large boards allow companies to connect better with their environment (Hillman, Withers, & Collins, 2009). For example, the literature shows that BoD’s key role is to legitimize and boost a firm’s public image (Certo, Daily, & Dalton, 2001) and to build external relationships (Peterson, & Philpot, 2009).

# Female Directors

Generally, the incessant attention to women on the Board of directors has brought a new spot light to research. However, there have been several opinions that women directors enhance board’s strategic and operational prowess. The presence of women directors may also increase better rate in the complete development and growth of the company at large. Women and men have different cognitive patterns and, therefore, are likely to differ in beliefs, norms and behaviors (Desender, 2009). Appointment as a director of a company board often represents the pinnacle of a management career. Worldwide, it has been noted that very few women are appointed to the board of directors of companies blame for the low numbers of women of company boards can be attributable to the widely publicized glass ceiling. The fact that there are a host of desirable and zealous women is a given, the characteristics.

McGuire (1963) defines social responsibility as an obligation to society that extends beyond a company’s economic and legal responsibilities. Socially responsible behavior also benefits companies. A 1999 study showed that the most important non-financial factors for investors were social performance towards the community, women, minorities, and employees, as well as environmental and product safety (Cox, Brammer & Millignton, 2004). Additionally, corporate social responsibility can lead to increases in financial measures. Better employee motivation, customer goodwill, and lower transaction costs result from corporate social responsibility (Cox et al., 2004); however, the benefits also extend beyond the corporation. Ramirez (2003) presents an interesting view of the effect that corporations have on American society.

The benefits of having female directors translate into financial success as well. New ideas and perspectives become new strategies, products, and services, which generate sales and profits. A recent study shows that the level of diversity on a board of directors is directly associates with

shareholder value as companies with more diverse boards use these advantages to improve themselves (Carter et al. 2003). One author likens diversity and experience to intangible assets that generate returns for shareholders (Biggins, 1999). As companies increase the number of women serving on their boards, their customers tend to be more satisfied, revenues and profits tend to increase, and the companies tend to develop a more positive corporate environment.

However, gender inclusive leadership has been suggested as a solution to reducing agency costs. Boulota (2005) explain that women are thought to be more ‘communal’ and men more ‘agentic’ hence companies with agency problems are firms data that have homogenous boards. Companies with female representation on boards tend to use more financial performance measures such as innovation and social responsibility more than their male counterparts which will aid in reducing any conflict of interest that may occur (Stephenson, 2004). Post, Bear and Rahman (2010) elucidates that female endearment to CSR orientation could stem from their values, moral orientation and ethical judgment, as women are, for example, more likely to respond to the needs of others and recognize unethical actions.

A research by Catalyst (2007) has recognized that firms with the highest representation of women as board of directors financially outperform, on average, companies with the lowest. Hence, by having women as directors on organizations boards, corporate reputations are enhanced (Bramer et al, 2009), company performance are increased (Burke, 2000; Crater, Simpkins & Simpsons, 2003) favorable work atmosphere are created, positive market reaction are stirred (Chen & Zu, 2007) which invariable enhances financial performance.

The benefits of gender-inclusive leadership have also been posited to extend beyond financial performance to corporate social responsibility (CSR) and an increased concern for the environment (Soares, Marquis & Lee 2011; Fernandez et al., 2012). Pratto, (1994) suggests that

the definition of fairness and the distribution of resources to the society is what may lead corporations to engage in socially responsible activities. As such, by operating with gender- inclusive leadership, various perspectives on fairness is provided which may broaden the company’s understanding of CSR and spawn a higher level of philanthropic activities.

According to Ramirez (2003), the only means of achieving meaningful diversity in both the workplace and society as a whole is by starting with corporate governance – corporate boards of directors. Ryan and Matthew (2014) showed that electing women to a company’s board leads to more women in the company being appointed to senior management. For example, companies that began 1995 with female directors had 30 percent more women in senior executive positions than companies that had all-male boards in 1995 (Rosener, 2003). Additionally, companies with female directors tend to have benefits that are more woman-friendly, such as longer maternity leaves than companies with only male directors (Dolliver, 2004). As the board of directors becomes more receptive to women, this positive attitude tends to trickle down into all levels of the company (i.e., from executives down to the staff). For example, the presence of female board members also signals potential to current female employees about their chances for advancement within the company (Rosener, 2003; Bernardi et al., 2012).

# Board Financial Expertise

As the performance of the BOD is dependent on directors effectively executing their roles and carrying out their responsibilities, the board dynamism has been a matter of great concern lately. The decisions of BOD impact all stakeholders, and making these decisions successfully is a big challenge. The BOD needs comprehend, inter alia, the global environment, political and economic conditions, the industry’s competitiveness and market situations. In order to make this possible, the directors must come from different backgrounds. Explained by Mishra and

Jhunjhunwala (2013), a board of directors is a group of persons elected or appointed by the shareholders to oversee the activities of a company. They are entrusted with the overall direction of the enterprise. Duties of the board of directors are, to be responsible for governing the company, giving strategic direction and monitoring the progress of the company in respect of the objectives defined by shareholders.

How to ensure the BOD overcome its demanding tasks becomes a key issue because nobody is a clairvoyant. Hence the board need to be diversified along variety of attributes. According to Mishra and Jhunjhunwala (2013), board diversity refers to the heterogenous composition of the board in terms of gender, age, race, education, experience, nationality, lifestyle, culture, religion, and many other facts that make each of us unique as individuals. The Nigerian Code of Corporate Governance (2018) opines that the board should promote diversity in its membership across a variety of attributes relevant for promoting better decision-making and effective governance. These attributes include field of knowledge, skills and experience as well as age, culture and gender. The board should have a policy to govern this process and establish measurable objectives for achieving diversity in gender and other areas. However, the study is particularly focused on the diversification of the board in terms of its education background.

The demand for financial experts on the board increased after the Sarbanes-Oxley Act (SOX) of 2002. According to the SOX (Section 407), a financial expert is a person who has experience in accounting or finance or has supervisory expertise. The Blue Ribbon Commission report in 1998, SOX in 2002 and NYSE in 2004 also suggest some guidelines regarding the expertise of board members. These reports were issued in response to various accounting scandals that have occurred since the 1990s, such as Enron, HealthSouth, Tyco, WorldCom and different financial crises. Reports further include the significance of financial expertise of directors in performing

their central function of monitoring the firm’s financial performance. Following the recent wave of accounting scandals, regulators have stressed the need for more financial experts on boards. The implicit assumption is that an understanding of generally accepted accounting principles and financial statements will lead to better board oversight and serve the interest of shareholders. In the aftermath of these corporate accounting scandals, research studies argued that the lack of financial expertise of board members played a major role in banks failures (Kirkpatrick, 2009). The expertise of the board members is essential to good corporate governance. Board members with relevant experience in addressing sustainable development issues are also important as they have a wider variety of resources to solve problems and encourage CSR practices (Bear, Rahman & Post, 2010). Companies with board professionalism are more likely to have established strong CSR commitments and are better positioned to deliver CSR performance (Ceres, 2019; Minguel, 2017). Although more research studies stressed the importance of qualified members on board for delivering improved firm performance (Haniffa & Cooke, 2002; Smith, Smith & Verne, 2006), however, research on the value of the board’s financial education is scarce.

# Firm Size

Firm size is an important variable because large companies may promote CSR strategies more often than small firms. Inclusion of the concept of firm size may lead to additional insights about a relationship that may exist between firm size and CSR. As detailed in previous sections, financial performance and CSR were the subjects of previous research. However, relatively few researchers examined the possibility of a relationship between firm size and CSR. According to Udayasankar (2008), small and medium-sized firms consist of 90 percent of the global number of companies; unlike large firms, small firms have limited capital and operational capacities (Udayasanka, 2008) that may limit CSR activities. There are two critical theories relevant to firm

size: technological theories and organizational theories (Kim, Park & Wier, 2013). According to technological theories, firm size equates with the amount of resource investments into technology. According to technological theories, large firms with a stream of income and excess cash may be more capable of additional investments, but large firms often form as a corporation or legal entity (Dang & Lee, 2013). Most corporations are public firms whose stocks traded in the capital markets (Sun et al., 2016). Unlike large companies, the ownership structure for small companies is either private limited partnership or sole proprietorship (Corbetta & Salvato, 2004).

Technological theorists focus on the allocation of productive inputs such as investment in R&D and the effect it has on the size of the firm, while organizational theorists may emphasize ownership structure of the company as the defining factors for the size of a firm. Several metrics are available to measure firm size, with revenues and assets associated with the study of CSR in the peer-reviewed literature (Kim & Kim, 2016). Total assets and total revenue are the two commonly used measurements (Mohammad, Orwani & Chek 2013). Total assets indicate the total amounts of assets or investments owned by a company; total assets are resources with economic value to generate future benefits. The financial definition of total revenue is the amount of money that a firm receives over a period because of sales transactions, with revenue computed by multiplying the prices of goods and services with the total quantity of goods and services (Loring, Neil, Gillim-Ross, Bashore, & Shah, 2013).

# 2.4. Factors Affecting Corporate Governance

Studies of both the stewardship and agency theories have continued to explore how board structures affect corporate governance mechanisms. A highly independent board can increase the supervision and control over managers. Combining the chairman of the board and the CEO positions and increasing inside directors can allow the manager to function in the role of the

steward in high-trust environments. From a corporate governance perspective, the board is responsible for hiring and dismissing corporate managers, setting a reward system, and supervising the performance levels of corporate policies. Therefore, the board structure provides a critical internal control mechanism for corporate governance (Amaeshi et al., 2009)

Previous studies of the correlation between corporate governance and the quality of financial reports used agency theory as a basis for exploring how board structures affected the quality of financial reports. These scholars have maintained that when a chairman of the board served as the CEO, the dual managerial position reduced the supervisory function of the board. This increased the incentive for the manager to conduct earnings management, thereby, producing inferior quality financial reports (Core, Holthausen & Larcker, 1999; Yermack, 1996; Anderson, Mansi &Reeb*.*, 2004). Regarding board independence, agency theory maintains that the lower the ratio of inside directors, the more effective it is for the board to implement supervisory functions, because no close relationship exists between the board and the manager, which facilitates implementation of internal corporate governance and reduces the likelihood of managers manipulating earnings (Dechow, Sloan & Sweeny, 1996; Hillman & Dalziel, 2003).

However, stewardship theory maintains that managers link the success or failure of the company to themselves by using self-actualization. When they encounter the dual position problem posed by combined chairman of the board and CEOs, managers become comparatively more concerned about their commitment toward the organization (Boyd, 1995) and consequently less likely to engage in earnings management. Regarding board independence and structure, stewardship theory involves a distinct view compared with agency theory. Stewardship Theory maintains that boards should be formed by inside directors, who should familiarize themselves with company operations, aiding the directors in executing their functions (Corbetta & Salvato, 2004).

Previous studies have also indicated that the corporate governance mechanism of board structure can influence CSR investment. Johnson and Greening (1999) explored the correlation between internal corporate governance mechanisms and CSR performance levels by examining the proportion of outside directors and the ratios of shares held by managers and investors, subsequently evaluating the effectiveness of those mechanisms. The results showed that efficient internal governance mechanisms yielded a strong social responsibility performance levels. However, certain scholars have maintained that inside directors are committed to charitable activities; thus, when a high proportion of inside directors is present, a corporation is expected to perform relatively frequent charitable undertakings (Wang & Coffey, 1992). Stewardship theory maintains that when the chairman of the board acts as the CEO, he or she is expected to combine self- and corporate interests. The behavior of the CEO is influenced by social perceptions; thus, he or she is expected to heavily invest into CSR (Davis, Schorman & Donaldson, 1997).

However, according to Xhang and Watson (2015), agency theory maintains that the closer the relationship between a corporation and its stakeholders is, the more it actively invests in CSR. Thus, the concentration of authority generated by dual positions should be avoided. Previous studies have reported that the corporate governance mechanism of board structure influences CSR investments and the quality of financial reports. However, CSR may be critical to influencing the quality of financial reports; thus, its role in corporate governance and the quality of financial reports is notable.

# Review of Empirical studies

The European Commission defines Corporate Social Responsibility (CSR) as actions which allow companies to not only meet their legal obligations but also to go beyond and invest in human capital, in the environment, and in strengthening relations with stakeholders. In the spirit

of the OECD, the Green Paper defines corporate governance as the system or interface which manages and controls relations between the management, the board of directors, shareholders and other stakeholders. The standard approach of corporate governance was initially based on the objective of optimizing company value; i.e., aligning the interests of managers and shareholders at the lowest possible cost (Turnbull, 2015). For these two concepts, the notion of stakeholder is central, although its scope is more restrictive in the case of governance, which explains the reason why the relationship between quality of governance and CSR is mainly addressed in the scientific literature in light of potential conflicts of interest between different stakeholders (Aguilera & Cuervo-Cazurra 2009; Ntim et al. 2013).

In developed countries such as Nigeria, foreign directors are becoming increasingly prevalent due of the growth and development of multinational companies. Foreign directors are more likely to be conscious of the need for more transparent accountability for the broader social effect of the company due to their foreign exposure and knowledge, and therefore could be more inclined to championing and encouraging further CSR practices (Otuya & Ofeimun, 2017).

Glory and Emilia (2016) examined the effect women as board of directors have on corporate social responsible (CSR) decisions for conglomerates in Nigeria over a period from 2005 -2014. The belief was that gender diversity increases firms’ socially responsible behaviors. The findings from the analysis justified the proposition of a statistically significant relationship between female directors on a corporate board and corporate social responsibility decisions as represented by charitable giving. Issa, Abdulkadir, Sanni, Ibrahim and Ayuba (2020) investigated the impact of board diversity on corporate social responsibility in a developing country context. Board diversity was measured using four dimensions (board independence, board gender diversity, board professionalism and board nationality. Hypotheses was tested using data obtained from

annual report of eight (8) listed oil and gas firms on Nigeria Stock Exchange (NSE) from 2012 to 2018, the results suggest that board diversity can be seen as an effective mechanism to enhance CSR participation and spending as diversity of boards improves the ability of firms to meet the needs of their broader stakeholder groups.

Helen, Francis and Ardi (2018) carried out the study to ascertain the influence of corporate board diversity on sustainability reporting on a sample of quoted manufacturing firms in Nigeria. The study adopted a panel research design and results showed no significant positive influence of board member nationality. Similarly, Abubakar (2016) and Awodiran (2018) both investigated the relationship between board gender and CSR in Nigeria and found that gender diversity have significant positive influence on CSR of deposit money bank in Nigeria.

Also, Boulata, (2012) looks at whether and how female board directors may affect corporate social performance (CSP) by drawing on social role theory and feminist ethics literature based on a sample of 126 firms drawn from the S & P 500 group of companies over a five-year period. The outcome suggests that board gender diversity (BGD) significantly affects corporate social performance. However, this impact depends on the social performance metric under investigation

In the same vein, Margeretha and Isnaini (2014) examines the impact of board diversity and gender composition on CSR performance in Indonesia for a sample time frame 2000-2012. Their findings show that CSR performance and corporate governance affect corporate reputation positively, while gender leads to higher impact on corporate social responsibility. Harrison, Torres and Kukalis (1988) conducted one of the first studies to link CEO duality to turnover. Initially, they hypothesized that combined CEO–chairs would be better able to avoid turnover

because of the greater power accruing from multiple titles. However, their results actually showed the opposite. Analyzing a sample of 671 large U.S. manufacturing firms, the authors found that poor performance precipitated turnover of combined CEO– chairs, but not of CEOs or chairs holding only one position. The authors interpreted this finding as indicating that while CEO duality does increase power and responsibility, it also comes with a corresponding increase in accountability.

Waddock and Graves (1997) argue that governance has struck a balance between economic and social interests, as well as between individual and collective interests. It is by encompassing all stakeholders, instead of only considering the interests of some shareholders as suggested in the agency theory of Jensen and Meckling (1976), that many governance researchers have shifted their attentions to CSR issues. Corporate governance is thereafter studied in light of different ownership structures and governance practices, mainly related to the board of directors. In particular, presenting their resource dependency theory, Pfefer and Salancik (1978) have analyzed the link between the attributes of boards of directors and their companies’ CSR performance (Hillman & Dalziel 2003; Jo & Harjoto 2011).

Orlitzky and Benjamin (2001) examined the relationship between corporate social performance and financial performance and hypothesized that strong corporate social performance could reduce financial risks. Orlitzky and Benjamin (2001) distributed a survey to the top-level managers of 655 corporations and applied descriptive statistics and regression to analyze the responses. Orlitzky and Benjamin (2001) reported a relationship between corporate social performance and risk that appeared to be one of reciprocal causality. Implication of the study by Orlitzky and Benjamin (2001) included the idea that a higher corporate social performance may lead to lower financial risks.

Soares, Marquis and Lee (2011), investigated the correlation between gender inclusive leadership and CSR activities on fortune 500 companies for the period 1997-2007. After controlling for key factor that may affect philanthropic decisions such as Board size, financial performance and firms’ size, the study revealed that the presence of women leaders had a significant effect on CSR activities. Also, Bear et al. (2010) studied how the diversity of board resources and the number of female board members affect firms’ corporate responsibility ratings using about 700 companies listed on Fortunes most admired firms in 2009. The researchers found a statistically significant relationship between gender diversity and corporate responsibility, while other forms of resource diversity had no impact on CR performance.

Boulata (2012) also looks at whether and how female board directors may affect corporate social performance (CSP) by drawing on social role theory and feminist ethics literature based on a sample of 126 firms drawn from the S & P500 group of companies over a five-year period. The outcome suggests that board gender diversity (BGD) significantly affects corporate social performance. However, this impact depends on the social performance metric under investigation. Maskun (2013) explored the impact of leverage, company size, and profitability on disclosure of CSR of 15 LQ-45 companies in the Indonesian Stock Exchange from 2009 through 2011. The study applied multiple linear regression models to measure the impact of leverage, company size, and profitability on CSR disclosure. The result showed that companies with significant profit size maintained CSR disclosures. In regard to company size and leverage, the results indicated large companies tended to have better CSR disclosures and high leverage levels had a significant positive impact on CSR disclosures of the Indonesian companies (Maskun, 2013).

Bidhari, Salim and Aisjah (2013) involved the effects of CSR information disclosure on financial performance and firm value in banking. The study selected 15 banking firms listed at ISE, based on population criteria with observation of secondary data obtained from annual reports and financial statements from 2008 to 2011. The study applied path analysis method to analyze the data that revealed CSR information disclosure affects all financial performance measurements, namely return on assets, return on equity, and return on sales. This empirical research was relevant to this doctoral study in its examination of the potential link between CSR and financial performance. The study’s findings indicated compelling argument as to which variables are appropriate to examine the relationship between CSR and financial performance.

Ofori, Nyuur and Darko (2014) reviewed the impact of CSR on financial performance based on empirical evidence from the Ghanaian banking sector. The study included a sample of 22 banks and a structured questionnaire to obtain primary data and used secondary sources for additional numerical data (Ofori et al., 2014). The research findings revealed that banks in Ghana consider CSR practice as a strategic tool and Ofori et al. (2014) concluded there could be a positive relationship between CSR and financial performance. However, the financial performance of banks in Ghana depends significantly on other control variables such as growth, debt ratio, origin, and size (Ofori et al., 2014).

Margeretha and Isnaini (2014) examines the impact of board diversity and gender composition on CSR performance in Indonesia for a sample time frame 2000-2012. Their findings show that CSR performance and corporate governance affect corporate reputation positively, while gender leads to higher impact on corporate social responsibility. Empirical research also shows that companies with more women as board of directors pay better attention to audit functions, risk

oversights and control (Carter et al., 2003; Adams & Ferreira, 2007). This is because; women are often characterized with accuracy, egalitarianism, cooperation and bring fairness to the table.

Santos and Feliana (2014) examined the association between CSR and financial performance. Santos and Feliana (2014) posited that the implementation of CSR increases financial performance because corporate social performance can bring sustainable growth to the firm. Opponents of this proposition, however, argued that firms should have better financial performance records before commitment to CSR initiatives. Unlike the single-sector study by Nuryaman (2013), Santos and Feliana (2014) studied a sample of 800 companies from all economic sectors over a period from 2010-2012. Financial performance was measured using both accounting-based and stock market based approaches. The accounting based approach included ROA and ROE, whereas the stock-market-based approach included stock market price as proxies to measure financial performance.

Adewale and Rahmon (2014) examined the relationship between CSR and financial performance. Adewale and Rahmon (2014) reviewed the impact of CSR on the financial performance of two big banks in Nigeria, using secondary data sources, such as financial statements of the banks under study, from 1990-2010. Ordinary least square analysis techniques indicated a positive relationship between corporate social responsible cost and profit after tax. The major limitation with this study was that the sample size from the banking sector was too small to generalize the results to other firms.

Zhuang, Chang and Lee (2018) investigated the relationship between board composition and CSR performance using data collected from 839 Chinese firms spanning from 2008 to 2016. The upper echelon theory was used as the theoretical basis of the study. The result indicates that directors with academic experience and qualification have positive influence on CSR

performance. Similarly, Harjoto, Laksmana and Lee (2015) found that board expertise has a significant positive impact on CSR performance using data collected from 1489 U.S. firms from 1999 to 2011. In line with stakeholder theory, board members with more knowledge and education are likely to have wider perspectives and a more detailed understanding of corporate social responsibility.

# Theoretical framework

A number of different theories provide a sound foundation to substantiate CSR reporting. The dominant ones are explained extensively below:

# Stewardship Theory

Stewardship Theory was developed by Davis, Schooman and Donaldson (1997) by using Theories X and Y, which were established by McGregor (1960). This theory assumed that two opposite groups of people exist, one of which demonstrates passive work motivation (X theory) and the other group demonstrates active work motivation (Y theory, also sometimes known as innate goodness theory). These assumptions were used to demonstrate the reasons behind agency theory mechanisms failures in recent years. Agency Theory involves one-sided assumptions regarding managerial behavior. In the real world, certain managers achieve intrinsic satisfaction or obtain the recognition of others by completing the tasks assigned by their organizations. This aim to meet with self-interests allows for their behaviors to exceed the limitations of money and cheap incentives. Stewardship theory holds that certain managers possess innate goodness, pursuing the paramount importance to shareholders as a front line objective and valuing their commitments toward the organization. In some entities, these managers play the roles of stewards, safeguarding the benefits of the corporation. The steward theory states that a steward protects and maximizes shareholders wealth through firm Performance. Stewards are company

executives and managers working for the shareholders, protects and make profits for the shareholders. The stewards are satisfied and motivated when organizational success is attained. It stresses on the position of employees or executives to act more autonomously so that the shareholders’ returns are maximized. The employees take ownership of their jobs and work at them diligently. Manager behavior is driven by social perceptions and self-achievement. Thus, the self-interests of managers and benefits to the company and all company personnel are mutually linked, and no conflicts arise (Block, 1996; Davis et al*.*, 1997; Peggy & Hugh, 2001).

# Stakeholder Theory

The stakeholder theory is a system-oriented theory (Gray, Kouhy & Lavers, 1995), which assume that any organization is influenced by the society in which it operates and, in turn, the organization also influences society. In this study, companies are considered to engage in some form of stakeholder management. Firm’s survival and success is attributable to economic and non-economic achievements. Being socially responsible and having good relations with their stakeholders will bring about competitive advantage, making them to achieve better economic results (e.g. profit maximization) and non-economic (e.g. corporate social performance) results. The stakeholder theory argues that a firm’s financial success is dependent on its ability to formulate and execute a corporate strategy which manages its relationships with stakeholders effectively (Brammer, Pavelin, & Porter, 2006). On the other hand, legitimacy is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions (Suchman, 1995).

# Tripple Bottom Line

The Triple Bottom Line theory (TBL) was found by John Elkington in (1994) his book “Canni- bals with Forks: The Triple Bottom Line of 21st Century Business”. TBL can be considered as

CSR framework that incorporates three dimensions of performance: economic, social and environmental. As elaborated by John Elkington, the three dimension of TBL must obtain sus- tainable results. Sustainability is the main aim of the TBL concept. Companies must apply TBL in order to achieve continuous profits and long-term social and environmental projects. Many corporations and nonprofit organizations have adopted the TBL sustainability framework to per- form CSR projects. Economic dimension. According to TBL theory the most important for a company is not to make high profits but to achieve continuous profit for the long term. So Business corporations start to enroll in the TBL CSR framework as well as they draw a strategic plan through calculating expenditures and taxes, forecasting business climate factors, evaluate market benchmark and avoid maximum risk threats. Real study for all these components will lead to achieve sustainable profits.

**Social Dimension**. Business must pay attention to its social affairs as well as paying attention to its financial affairs. Achieving social sustainability by a corporation is a must in the TBL CSR framework. But since societies differ from region to another every corporation has to collect data from national authorities concerning social affairs as unemployment rates, human rights, female labor force participation, health services educational services provided by government, etc. After determining the community priorities, shareholders must take decisions to satisfy as much as possible the social needs. So for a business to be stable over the long term social activities of a business corporation must satisfy surrounding society needs as much as possible.

**Environmental Dimension**. Environmental sustainability is one of the main concepts in the TBL framework. If business companies will not respect the environmental dimension, our children will not be able to enjoy the same quality of life we are enjoying now. Corporations must pay attention to environmental changes and obey the new environmental laws with being

careful to the consumption of natural resources. Corporations have to use the alternative energy sources in order to minimize the consumption of traditional sources of energy (for example oil, gas, coal, etc.), and it has to safe air and water sources, with disposing of toxic and solid waste in an environmental manner. All these factors maintain environmental sustainability.

# CHAPTER THREE METHODOLOGY

# Introduction

This section explains at a glance the methodology that would be implemented in this study. It would narrate the entire techniques and analysis relating to the research design, population and sample, data sources, description of variables in the models, model specification, and method of data analysis. The methodology to be used for this thesis is time series as the study will be testing an event that has already taken place. Regression analysis would be used to analyze and establish the relationship between dividend policy and firm performance. The scope would be limited to those companies that have data that are relevant to the study for the Fifteen years.

# Research Design

According to Izedomni (2005), a research design specifies the methods and procedures used to acquire the information needed for the research. It enables the researcher to find out the kind of survey or sampling design adopted in the study. This study would adopt a quantitative research design and the strategy would involve a panel regression. Hence, it would enable the researcher to examine the relationship between corporate governance characteristics and corporate social responsibility and firm size as a moderating role in quoted Non-financial companies in Nigerian.

# Population of the Study

The population of this study comprises of one hundred and eight (108) Non-financial companies quoted on the Nigerian Stock Exchange Market during the period 2014 to 2020.

# Sample Size and Sampling Technique

To obtain the sample size for this study, we shall employ the formula generated by krejere and Morvan (1970) so as to overcome the common causes for missing data might majorly be on unavailability of annual reports, inconsistency in the data required, and incomplete information. This technique is used to get the sample size from the total population, it is also considered fit to for use in this study because most of the recent studies such as Ilaboya and Iyafekhe (2014) used it to estimate the sample size on quantitative data approach which involves panel regression, cross-sectional and time series data. It is -mathematically expressed as:

S= X2NP(1-P) d2(N-1) + X2P(1-P)

Where:

X2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841) S = the sample size

N = the population size

P = population proportion (assumed to be 0.60)

d = degree of accuracy (expressed as a proportion = 0.07) S = (3.841) x 108 x 0.6(1-0.6)

(0.07)2 x (108-1) + 3.841 x 0.6(1-0.6)

= 70

# Sampling Technique

The sample size of seventy companies was drawn from the population of one hundred and eight companies using the probability sampling technique (i.e. simple random sampling technique). The use of the probability sampling technique is made possible because it is possible to draw up a sampling frame from which the sample is drawn. .

# Data Type and Sources

Secondary data is use for this study. The data is sourced from the audited annual reports of the seventy sampled companies during the period 2014-2020 financial year. The researcher utilizes corporate annual reports because they contain the data of the study and they are readily available, accessible and also provide a greater potential for comparability of results.

# Method of Data Analysis

The study adopts the panel estimation technique with the aid of E-View 10 software. In panel data analysis, there is the problem of unobserved heterogeneity. The reason for its choice is due to the problem of heterogeneity associated in cross section studies. Therefore, there is the need to ascertain if this would undermines the estimation result. In analyzing the panel model equation, the error term Vit consist of two components, ‘’idiosyncratic’’ component ‘**’**U’’ and ‘’observed’’ heterogeneity component ‘’C’’. If the unobserved heterogeneity in the panel data model is correlated with one or more of the explanatory variable, Ordinary Least Square (OLS) parameter estimates are biased and inconsistent. Thus, we will employ the Hausman test to test for exogeneity of the unobserved error component. The test is necessary because the random effect ‘’C’’ needs to be uncorrelated with the explanatory variables (regressors) otherwise there is endogeneity problem and the random effect estimator will be inconsistent. Panel data analysis may be in the form of fixed effect model (FEM) or random effect model (REM). The process is to first estimate the random estimation (REM) to ascertain if the correlation between the error term and the unobserved attributes in each cross section undermine the regression result. The decision is to accept huasman probability statistic with a value above 0.05 (Huaman p- value>0.05), this indicates that the correlation between the error term and the unobserved

attributes in each of the cross sections is insignificant, therefore does not undermined the estimation result. However, if the hausman probability value is less than 0.05 (Huaman p- value<0.05), this indicates that the correlation between the error term and the unobserved attributes in each of the error term is significant to undermine the estimation result. Consequently, the fixed effect estimation is conducted, which suggest an estimation done on the basis of mean-corrected values. The decision rule is that there is a significant relationship if a variable probability value is less than 0.05 (p values <0.05) at 5%, which suggest significance, otherwise there variable is not significant. Other post diagnostic tests such as test for normality, multicollinearity, serial correlation, equality of variance and model Ramset Reset as well as co- integration were also carried out.

# Model Specification

The model specification of any relationship must be guided by existing theory and or empirical evidence from previous researches. Hence, Agency Theory, stewardship theory, Tripple Bottom Line theory, Stakeholder theory and Archie carrol’s theories of CSR/Corporate governance are the bases on which the model is specified. On the basis of the above, the researcher has decided to specify the relationship between Corporate Governance attributes and corporate social responsibility: moderating the roles of firm size in the context of the control variables. A multiple linear regression model using a set of cross-sectional data was developed for the study. The functional form of the model is;

CSR = f( BND, BS, BGD, BFX) (i)

To avoid variable omission bias, the study controlled for firm size and firm age.

Where: CSR= Corporate Social Responsibility; BND = Board Independence; BS= Board Size; and BGD= Board gender diversity.

CSR = f( BND, BS, BGD, BFX, FS, FA) (ii)

Where: FS= Firm size; and FA= Firm age.

To account for the moderating effect of firms’ size on the relationship between corporate governance and corporate social responsibility, the model is stated thus:

CSR = f( BND, BS, BGD, FS, FA, BND\*FS, BS\*FS, BGD\*FS, BFX\*FS) (iii)

The multiple regressions with an error term is as stated below:

CSRit=α+β1BNDit +β2BSit + β3BGDit + + β4BFXit + β5FSit + β6FAit + μ (iv)

β1- β6 = Unknown coefficients of explanatory variables μ = Error term over cross-section and time

i= number of cross-sections t= time

To account for the moderating effect of firm size, the econometric form is stated thus: CSRit=α+β1BNDit +β2BSit + β3BGDit + β4BFXit + β5FSit + β6FAit + β7BNDit\*FSit + β8BSit\*FSit

+ β9BGDit\*FSit + μ

(v)

α = Constant

β1- β7 = Unknown coefficients of explanatory variables

# Operationalisation of Variables

The table below shows the various measurement in respect of the variable selection. Table 3.1: Operationalisation of Variables

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **S/N** | **Variables** | **Measurement** | **Prior Studies** | **Acronyms** |
| **Dependent Variable** | | | |  |
| 1 | Corporate Social  Responsibility | Amount expended on corporate social responsibility activities | Welback, Owusu, Bekoe & Kusi, (2017) | CSR |
| **Independent Variables** | | | | |
| 2 | Board | Percentage of independent non- | Kuan, Li and Chu | BND |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Independence | executive directors to the total  number of directors on the board | (2011) |  |
| 3 | Board Size | Number of directors on the board | Kuan et al. (2011) | BS |
| 5 | Board Gender Diversity | Percentage of female directors on the board to the total number of  directors on the board | Ullah and Kamal (2017) | BGD |
| 6 | Board Financial Expertise | Ratio of the number of directors with professional accounting knowledge to total number of  directors | Baatwah, Salleh and Ahmad (2015) | BFX |
| **Control Variable** | | | | |
| 9 | Firm Size | Log of total assets | Sarlak and Ahmadi  (2016) | FS |
| 9 | Firm Age | Number of years from listing date till  now | Aburime (2008) | FA |

Source: Researcher’s Compilation (2021).

# CHAPTER FOUR

**DATA PRESENTATION AND ANALYSIS**

# Introduction

The study investigate corporate governance and corporate social responsibility among non- financial listed companies in the NSE. Specifically, the study examines board independence, board size, female directorship and board financial expertise on corporate social responsibility disclosures. In order to avoid variable omission bias, the study control for financial leverage and firm size. Therefore, the study comprises of two (2) panel regression models: firms model on corporate governance model; and the second model incorporate firm leverage and firm size. The sample consist of seventy (70) non-financial firms listed in the NSE during the period 2014 to 2020 totalling a panel of 490 observations. In this chapter, the analysis and interpretation of the secondary data collected for the purpose of this study are presented. It entails the application of both univariate and multivariate analysis to provide the basis for testing of the four (4) research hypotheses formulated for under study.

# Univariate Analyses

This sub-section presents the preliminary analysis of the data using descriptive statistics and correlation analysis of all the variables used in the study. The description was analysed based on mean, maximum, minimum and standard deviations. The Skewness-Kurtosis (Jarque-Bera) statistics was also analysed for the purposes of normality test of the data and preclusion of

outliers. The result was presented in a comparative form to reflect the sample characteristics of both countries as regards all the variables of interest. Thereafter, regression analyses are presented, and the results are then interpreted and discussed.

# Table 4.1: Descriptive Statistics

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | CSR | BND | BS | BGD | BFX | FA | FS |
| Mean | 65110.77 | 0.617 | 8.955 | 0.136 | 0.255 | 41.200 | 16.427 |
| Max | 2852000 | 1.000 | 19.000 | 0.667 | 0.667 | 97.000 | 21.428 |
| Min | 0.000000 | 0.250 | 4.000 | 0.000 | 0.000 | 3.000 | 10.955 |
| Std. | 265388.8 | 0.122 | 2.860 | 0.126 | 0.111 | 20.236 | 2.063 |
| JB | 77001.78 | 1.460 | 47.051 | 45.425 | 8.550 | 5.690 | 2.144 |
| Prob. | 0.000 | 0.481 | 0.000 | 0.000 | 0.000 | 0.000 | 0.342 |
| Obs. | 490 | 490 | 490 | 490 | 490 | 490 | 490 |

Source: Researchers Compilation (2021)

From Table 4.1, it can be observed that the mean value for corporate social responsibility (CSR) measured using amount expended stood at 65110.77. This indicates that the amount expended on CSR is about ₦65,110.77 which is quite unimpressive, perhaps because it is not mandatory. The standard deviation value of 265388.8 tends to exhibits considerable level of dispersion from the mean value. The max = 2852000 and min = 0.000.

The mean value for board independence (BND) measured using the ratio of non-executive directors to the total number of directors stood at 0.617. This indicates that non-executive directors of the sampled companies is about 61.7% which is consistent with the provision of the Nigerian Code of Corporate Governance that majority of board members should be non- executive. The standard deviation value of 0.122 is low which suggest that it tends to revolve around the mean value, the max = 1.000 and min = 0.250.

The mean value for board size (BS) measured using the number of board of directors stood at 8.955. This indicates that the average board size of the sampled firms is about 8 members. The Nigerian Code of Corporate Governance did not specify the exact number of board members, rather it stats that the board should be of a sufficient size to effectively undertake and fulfil its business; to oversee, monitor, direct and control the company’s activities and be relative to the scale and complexity of its operations. The standard deviation value of 2.860 is low which suggest that it tends to revolve around the mean value, the max = 19.000 and min = 4.000.

The mean value for board gender diversity (BGD) measured using the ratio of female directors to the total number of directors stood at 0.136. This indicates that the average number of female directors on the board is about 13.6%. The Nigerian Code of Corporate Governance did not specify the exact board gender diversity ratio, rather it stats that the board should promote diversity in its membership across a variety of attributes relevant for promoting better decision- making and effective governance. These attributes include field of knowledge, skills and experience as well as age, culture and gender. The Board should have a policy to govern this process and establish measurable objectives for achieving diversity in gender and other areas. The standard deviation value of 0.126 is low which suggests that it tends to revolve around the mean value, the max = 0.667 and min = 0.000.

The mean value for board financial expertise (BFX) measured using the number of board members who possess accounting qualification to the total number of directors stood at 0.255. This indicates that the average board member of the sampled firms with financial expertise is about 25.5% members. The Nigerian Code of Corporate Governance encourage that the board of directors of companies should be diversified along variety of factors such as field of knowledge in order to promote better decision-making and effective governance. The standard deviation

value of 0.111 is low which suggest that it tends to revolve around the mean value, the max = 0.667 and min = 0.000.

The mean value for firm age (FA) measured using the number of years from the date of listing stood at 41.200. This indicates that the average age of the sampled firms is about 41 years. The standard deviation value of 20.236 is low which suggest that it tends to revolve around the mean value, the max = 97.000 and min = 3.000. The mean value for firm size (FS) measured using the log of total asset stood at 16.427. When measured using the absolute values of total assets, the mean value stood at 48883049 which indicates that the average total assets of the sampled firm is about ₦48, 883, 049. The standard deviation value of 2.063 is low which suggest that it tends to revolve around the mean value, the max = 21.428 and min = 10.955.

# Table 4.2 Pearson Correlation Result

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | CSR | BND | BS | BGD | BFX | FA | FS |
| CSR | 1 |  |  |  |  |  |  |
| BND | 0.139\*\*  (0.013) | 1 |  |  |  |  |  |
| BS | 0.393\*\*\*  (0.000) | 0.162\*\*  (0.004) | 1 |  |  |  |  |
| BGD | 0.162\*\*  (0.004) | 0.072  (0.205) | -0.053  (0.348) | 1 |  |  |  |
| BFX | 0.134\*\*  (0.017) | 0.036  (0.516) | -0.080  (0.155) | -0.166\*\*  (0.003) | 1 |  |  |
| FA | 0.097\*  (0.087) | -0.187\*\*  (0.001) | 0.115\*\*  (0.042) | -0.043  (0.446) | 0.076  (0.180) | 1 |  |
| FS | 0.747\*\*\*  (0.000) | 0.085  (0.133) | 0.528\*\*\*  (0.000) | 0.119\*\*  (0.035) | 0.178\*\*  (0.002) | 0.091  (0.110) | 1 |

Source: Researchers Compilation (2021). P-value ( ); \*\*\*, \*\* & \* sig @ 1%, 5% and 10% respectively

The outcome of the correlation matrix is presented in Table 4.2. The emphasis is on the correlation between corporate social responsibility (CSR) and the various explanatory variables (board independence, size, gender diversity, financial expertise, firm age and firm size). As observed, CSR positively correlates with BND (r= 0.139), BS (r=0.393), BGD (r= 0.162), BFX

(r=0.134), FA (r= 0.097) and FS (r= 0.747) and were all significant at varying degrees of error term. The positive relationship could be translated to mean that board independence, board size, board gender diversity board financial expertise, firm age and firm size contribute to corporate social responsibility disclosure among non-financial companies listed in the NSE. It can also be observed there is no evidence of high-correlation among the explanatory variables. The association between board size and firm size showed the highest correlation coefficient at 0.528. Therefore, the issue of multicollinearity is likely absent among the distributions since Hair, Black, Babin and Anderson (2010) posit that multicollinearity problem is likely present when the correlation coefficient is above 0.90.

# Table 4.3 Regression Assumptions Test

|  |  |  |
| --- | --- | --- |
| **Multicollinearity test** | | |
| Variable | Coefficient Variance | Centered VIF |
| C | 0.844 | NA |
| BND | 0.597 | 1.090 |
| BS | 0.001 | 1.567 |
| BGD | 0.559 | 1.101 |
| BFX | 0.813 | 1.154 |
| FA | 1.690 | 1.070 |
| FS | 0.003 | 1.573 |

Source: Researchers Compilation (2021)

From the VIF test results presented in Table 4.3, it can be observed that all the centered VIF values of both models are below the benchmark value of 10. The decision rule of the VIF tests is that if any of the explanatory variables exhibits VIF of up the value of ten (10), then it correlates with another independent variable, but if otherwise (i.e. when < 10), then the issue of multicollinearity among the series are likely absent. Going by the above decision rule, it can be concluded that there are no issues of unstable parameter estimates in the regression lines of both models.

# Multivariate Analyses

This sub-section presents the analysis and interpretation of the panel regression models built for the purpose of this study, as specified in the third chapter. For the panel regressions, both fixed and random effects procedures were estimated for both models. However, the standard procedure for panel data analysis requires the Hausman test for the selection of the most appropriate model for statistical inference between the fixed and random effects models. The decision rule for the Hausman tests is to accept H1 when the p-value is less than 5%. The alternative hypothesis (H1) is that the Fixed Effect Model is consistent, while the null hypothesis (H0) is that Random Effect Model is consistent. The panel regression results together with the hausman test results are presented in Table 4.4.

Table 4.4: Panel Regression Result

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Variable*** | **Apriori Sign** | **Model 1**  **Model without control variables** | | **Model 2**  **Model with control variables** | |
| RE | FE | RE | FE |
| BS | + | 0.130\*\* | 0.036 | 0.007 | 0.035 |
|  |  | (2.833) | (0.670) | (0.158) | (0.661) |
|  |  | {0.005} | {0.504} | {0.875} | {0.509} |
| BND | +/- | 1.437 | 1.500 | 1.555\*\* | 1.526 |
|  |  | (1.621) | (1.570) | (1.898) | (1.604) |
|  |  | {0.106} | {0.118} | {0.059} | {0.110} |
| BGD | +/- | 2.094\*\* | 1.871\* | 1.129 | 0.460 |
|  |  | (2.104) | (1.655) | (1.273) | (0.376) |
|  |  | {0.036} | {0.099} | {0.204} | {0.707} |
| BFX | + | 2.258 | 0.743 | -0.133 | 0.220 |
|  |  | (1.411) | (0.335) | (-0.103) | (0.100) |
|  |  | {0.159} | {0.738} | {0.918} | {0.921} |
| FA | + |  |  | 0.010 | 0.096 |
|  |  | (1.341) | (2.342) |
|  |  | {0.181} | {0.020} |
| FS | + |  |  | 0.832\*\*\* | 0.167 |
|  |  | (9.674) | (0.672) |
|  |  | {0.000} | {0.502} |

*Model Parameters*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| R2 |  | 0.053 | 0.774 | 0.309 | 0.782 |
| Adjusted R2 |  | 0.040 | 0.723 | 0.295 | 0.730 |
| F-statistic |  | 4.256 | 15.252 | 22.735 | 15.250 |
| Prob(F-stat) |  | 0.002 | 0.000 | 0.000 | 0.0000 |
| Durbin-Watson |  | 1.5 | 1.5 | 1.6 | 1.8 |
| Hausman |  | 0.0040\*\* | | 0.133 | |

Source: Researcher’s compilation (2021). T-Statistic ( ); p-value { }; \*\*\*, \*\* & \* sig @ 1%, 5% and 10% respectively.

As can be observed from Table 4.4, the corresponding probability values of the chi-squared statistic probability value for model 1 (without control variables) is less than 5% (p- value=0.0040). This shows the suitability of the fixed effect model. This implies that fixed effect model is preferred to the random effect model and it is considered suitable in capturing the relationships and drawing inferences in the model. In model with control variables, the corresponding probability values of the chi-squared statistic probability value for model 2 (without control variables) is greater than 5% (p-value=0.133). This shows the suitability of the random effect model. This implies that random effect model is preferred to the fixed effect model and it is considered suitable in capturing the relationships and drawing inferences in the model.

In model 1, it can observed that the fixed effect model has *F*-statistic value of 15.252 (p = 0.000) which indicate that the model is statistically valid for drawing inferences at the 1% level of significance. The coefficient of determination (R-squared) was observed to be approximately 77.4% with an adjusted R-square of 72.3%. This implies that the explanatory variables account for a joint impact of 77.4% in the systematic change in the dependent variable (corporate social responsibility). The Durbin-Watson statistic showed a value of 1.5 which suggests that the problem of serial correlation in the model is unlikely. On the behaviours of the independent

variables on corporate social responsibility, it can be observed from the outcome that the variables BS exhibits positive insignificant impact 0.036 (p= 0.504) at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to increase by up to 3.6% when BS increase by one percent. BND exhibits positive insignificant impact 1.500 (p= 0.118) at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to increase by up to 1.50

% when BND increase by one percent. BGD exhibits positive significant impact 1.871(p= 0.099) at 10%. This implies that corporate social responsibility is predicted to increase by up to 1.871% when BGD increase by one percent. BFX exhibits positive insignificant impact 0.743 (p= 0.738) at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to increase by up to 73.8% when BFX increase by one percent.

In model 2, it can observed that the random effect model has *F*-statistic value of 22.735 (p = 0.000) which indicate that the model is statistically valid for drawing inferences at the 1% level of significance. The coefficient of determination (R-squared) was observed to be approximately 30.9% with an adjusted R-square of 29.5%. This implies that the explanatory variables account for a joint impact of 30.9% in the systematic change in the dependent variable (corporate social responsibility). The Durbin-Watson statistic showed a value of 1.6 which suggests that the problem of serial correlation in the model is unlikely. On the behaviours of the independent variables on corporate social responsibility, it can be observed from the outcome that the variables BS exhibits positive insignificant impact 0.007 (p= 0.875) at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to increase by up to 0.7% when BS increase by one percent. BND exhibits positive significant impact 1.555 (p= 0.059) at 10%. This implies that corporate social responsibility is predicted to increase by up to 1.56 % when BND increase by one percent. BGD exhibits positive insignificant impact 1.129 (p= 0.204) at 1%, 5%

and 10%. This implies that corporate social responsibility is predicted to increase by up to 1.129% when BGD increase by one percent. BFX exhibits inverse insignificant impact -0.133 (p= 0.918) at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to decline by up to 13.3% when BFX increase by one percent. On the control variables, FA exhibits positive insignificant impact 0.010 (p= 0.181) at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to increase by up to 1% when FA increase by one year. Finally, FS exhibits positive significant impact 0.832 (p= 0.00) at 1%. This implies that corporate social responsibility is predicted to increase by up to 83.2% when FS increase by one unit.

Table 4.5: Panel Regression Result with firm size as a moderating variable

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| ***Variable*** | **Apriori Sign** | **Model 1**  **Model without control variables** | | **Model 2**  **Model with control variables** | |
| RE | FE | RE | FE |
| BS | + | -0.125 | 0.387 | 0.052 | 0.783 |
|  |  | (-0.384) | (0.967) | (0.144) | (1.621) |
|  |  | {0.701} | {0.334} | {0.886} | {0.106} |
| BND | +/- | -9.133 | 14.653\* | 0.495 | 21.409\*\* |
|  |  | (-1.570) | (1.778) | (0.059) | (2.032) |
|  |  | {0.118} | {0.077} | {0.953} | {0.043} |
| BGD | +/- | -8.948 | -17.808 | -6.842 | -18.438 |
|  |  | (-1.008) | (-1.400) | (-0.769) | (-1.443) |
|  |  | {0.314} | {0.163} | {0.442} | {0.150} |
| BFX | + | -20.251\* | -37.418\* | -16.106 | -23.755 |
|  |  | (-1.769) | (-1.963) | (-1.300) | (-1.176) |
|  |  | {0.078} | {0.051} | {0.194} | {0.240} |
| FA | + |  |  | 0.010 | 0.103\*\* |
|  |  | (1.412) | (2.511) |
|  |  | {0.159} | {0.013} |
| FS | + |  |  | 0.558 | 0.848 |
|  |  | (1.385) | (1.395) |
|  |  | {0.167} | {0.164} |
| BS\*FS | + | 0.008 | -0.019 | -0.002 | -0.042 |
|  |  | (0.477) | (-0.863) | (-0.115) | (-1.553) |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | {0.633} | {0.389} | {0.908} | {0.121} |
| BND\*FS | + | 0.601\* | -0.769 | 0.058 | -1.131\* |
|  |  | (1.818) | (-1.650) | (0.120) | (-1.899) |
|  |  | {0.070} | {0.100} | {0.904} | {0.059} |
| BGD\*FS | + | 0.599 | 1.047 | 0.468 | 1.075 |
|  |  | (1.159) | (1.448) | (0.902) | (1.479) |
|  |  | {0.247} | {0.149} | {0.367} | {0.140} |
| BFX\*FS | + | 1.209\* | 2.240\*\* | 0.938 | 1.397 |
|  |  | (1.814) | (2.023) | (1.294) | (1.182) |
|  |  | {0.071} | {0.044} | {0.197} | {0.238} |

*Model Parameters*

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| R2 |  | 0.309 | 0.796 | 0.313 | 0.788 |
| Adjusted R2 |  | 0.291 | 0.740 | 0.290 | 0.734 |
| F-statistic |  | 16.946 | 14.188 | 13.734 | 14.635 |
| Prob(F-stat) |  | 0.000 | 0.000 | 0.000 | 0.0000 |
| Durbin-Watson |  | 1.4 | 1.6 | 1.4 | 1.6 |
| Hausman |  | 0.065\* | | 0.019\*\* | |

Source: Researcher’s compilation (2021). T-Statistic ( ); p-value { }; \*\*\*, \*\* & \* sig @ 1%, 5% and 10% respectively.

Table 4.5 presents the regression result on the moderating effect of firm size on the relationship between corporate governance and corporate social responsibility. As can be observed, the corresponding probability values of the chi-squared statistic probability value for model 1 (without control variables) is less than 10% (p-value=0.065). This shows the suitability of the fixed effect model. This implies that fixed effect model is preferred to the random effect model and it is considered suitable in capturing the relationships and drawing inferences in the model. In model with control variables, the corresponding probability values of the chi-squared statistic probability value for model 2 (without control variables) is less than 5% (p-value=0.019). This shows the suitability of the fixed effect model. This implies that fixed effect model is preferred to the random effect model and it is considered suitable in capturing the relationships and drawing inferences in the model.

In model 1, it can observed that the fixed effect model has *F*-statistic value of 14.188 (p = 0.000) which indicate that the model is statistically valid for drawing inferences at the 1% level of significance. The coefficient of determination (R-squared) was observed to be approximately 79.6% with an adjusted R-square of 74%. This implies that the explanatory variables account for a joint impact of 79.6% in the systematic change in the dependent variable (corporate social responsibility). The Durbin-Watson statistic showed a value of 1.6 which suggests that the problem of serial correlation in the model is unlikely. On the behaviours of the independent variables on corporate social responsibility, it can be observed from the outcome that the variables BS exhibits positive insignificant impact 0.387 (p=0.334) at 1%, 5% and 10% on corporate social responsibility. This implies that corporate social responsibility is predicted to increase by up to 38.7% when BS increase by one percent. When compared with the result in table 4.4 (0.036; p= 0.504, at 1%, 5% and 10%), it can be observed that the coefficient value BS has on corporate social responsibility is stronger, although it remained insignificant. This could be attributed to the moderating effect of firm size. BND exhibits positive significant impact 14.653 (p= 0.077) at 10% on corporate social responsibility. This implies that corporate social responsibility is predicted to increase by up to 14.7% when BND increase by one percent and this is significant. When compared with the result in table 4.4 (1.500; p= 0.118, at 1%, 5% and 10%), it can be observed that the coefficient value BND has on corporate social responsibility is stronger and it turned significant. This could be attributed to the moderating effect of firm size. BGD exhibits inverse insignificant impact -17.802 (p=0.163) at 1%, 5% and 10% on corporate social responsibility. This implies that corporate social responsibility is predicted to decline by up to 17.802% when BGD increase by one percent. When compared with the result in table 4.4 (1.871; p= 0.099, at 10%), it can be observed that the coefficient sign turned negative with a

stronger impact and also insignificant unlike the previous case were it was positive and significant. This change is sign and significance may not be unconnected with the introduction of firm size as a moderating variable. BFX exhibits inverse significant impact 37.418 (p=0.051) on corporate social responsibility. This implies that corporate social responsibility is predicted to decline by up to 37.42% when BFX increase by one percent. When compared to the result in table. 4.4 (0.743; p= 0.738, at 1%, 5% and 10%), it can be observed that the coefficient sign changed to positive and it is also significant unlike the previous case were it was positive and insignificant. This change is sign and significance may not be unconnected with the introduction of firm size as a moderating variable.

On the marginal impact BS, BN, BGD and BFX have on corporate social responsibility due to the moderation of firm size, it can be observed that BS\*FS exhibits inverse insignificant impact

0.019 (p= 0.389) on corporate social responsibility at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to decline marginal by up to 1.9% when BS increase by one percent when moderated with firm size. BND\*FS exhibits inverse insignificant impact 0.769 (p= 0.100) on corporate social responsibility at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to decline marginal by up to 176.9% when BND increase by one percent when moderated with firm size. BGD\*FS exhibits positive insignificant impact 1.047 (p= 0.149) on corporate social responsibility at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to decline marginal by up to 1.05% when BGD increase by one percent when moderated with firm size. Finally, BFX\*FS exhibits positive significant impact 2.240 (p= 0.044) on corporate social responsibility at 5%. This implies that corporate social responsibility is predicted to increase marginal by up to 2.24% when BFX increase by one percent when moderated with firm size.

In model 2, it can observed that the fixed effect model has *F*-statistic value of 14.635 (p = 0.000) which indicate that the model is statistically valid for drawing inferences at the 1% level of significance. The coefficient of determination (R-squared) was observed to be approximately 78.8% with an adjusted R-square of 73.4%. This implies that the explanatory variables account for a joint impact of 78.8% in the systematic change in the dependent variable (corporate social responsibility). The Durbin-Watson statistic showed a value of 1.6 which suggests that the problem of serial correlation in the model is unlikely. On the behaviours of the independent variables on corporate social responsibility, it can be observed from the outcome that the variables BS exhibits positive insignificant impact 0.783 (p=0.106) at 1%, 5% and 10% on corporate social responsibility. This implies that corporate social responsibility is predicted to increase by up to 78.3% when BS increase by one percent. When compared with the result in table 4.4 (0.007; p= 0.875, at 1%, 5% and 10%), it can be observed that the coefficient value BS has on corporate social responsibility is stronger, although it remained insignificant. The strong coefficient sign could be attributed to the moderating effect of firm size. BND exhibits positive significant impact 21.409 (p= 0.043) at 5% on corporate social responsibility. This implies that corporate social responsibility is predicted to increase by up to 21.41% when BND increase by one percent and this is significant. When compared with the result in table 4.4 (1.555; p= 0.059, at 10%), it can be observed that the coefficient value BND has on corporate social responsibility is stronger, although it remained significant. The strong coefficient sign could be attributed to the moderating effect of firm size. BGD exhibits inverse insignificant impact 18.438 (p=0.150) at 1%, 5% and 10% on corporate social responsibility. This implies that corporate social responsibility is predicted to decline by up to 18.438% when BGD increase by one percent. When compared with the result in table 4.4 (1.129; p= 0.204, at 1%, 5% and 10%), it can be

observed that the coefficient sign turned negative with a stronger impact, although it remained insignificant. This change is sign may not be unconnected with the introduction of firm size as a moderating variable. BFX exhibits inverse insignificant impact 23.755 (p=0.240) on corporate social responsibility. This implies that corporate social responsibility is predicted to decline by up to 23.76% when BFX increase by one percent. When compared to the result in table. 4.4 (- 0.133; p= 0.918, at 1%, 5% and 10%), it can be observed that the coefficient sign changed to positive, although it remained insignificant. This change is sign may not be unconnected with the introduction of firm size as a moderating variable.

On the marginal impact BS, BN, BGD and BFX have on corporate social responsibility due to the moderation of firm size, it can be observed that BS\*FS exhibits inverse insignificant impact

0.042 (p= 0.121) on corporate social responsibility at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to decline marginal by up to 4.2% when BS increase by one percent when moderated with firm size. BND\*FS exhibits inverse significant impact

1.131 (p= 0.059) on corporate social responsibility at 5%. This implies that corporate social responsibility is predicted to decline marginal by up to 1.13% when BND increase by one percent when moderated with firm size. BGD\*FS exhibits positive insignificant impact 1.075 (p= 0.140) on corporate social responsibility at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to increase marginal by up to 1.08% when BGD increase by one percent when moderated with firm size. Finally, BFX\*FS exhibits positive insignificant impact

1.397 (p= 0.238) on corporate social responsibility at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to increase marginal by up to 1.40% when BFX increase by one percent when moderated with firm size.

# Test of Hypotheses

The five hypotheses formulated in the course of this study were tested in this sub-section. The study adopted the three typical values of test of significance (1%, 5% and 10%). The decision rule is to accept H0 (null hypotheses) when the probability value exceeds the three typical significance test values of 0.01, 0.05 and 0.1, but if the probability value is less than any of the three, we can reject H0. The result in table 4.4 and 4.5, model 2, fixed effect estimation result forms the bases of the hypotheses testing. Hypotheses one to five are tested using the result in table 4.4, model 2 (fixed effect estimation) while hypothesis five is tested using the result in table 4.5, model 2 (fixed effect estimation). Thus, the five hypotheses are re-stated and tested below:

## Hypothesis 1:

**H01:** There is no significant relationship between board size and corporate social responsibility of non-financial companies listed in the Nigerian Stock Exchange.

The first hypothesis of this study states that there is no significant relationship between board size and corporate social responsibility of non-financial companies listed in the Nigerian Stock Exchange. The evidence provided by the regression result of fixed effect in model 2 showed that the variable of BS exhibits positive insignificant impact 0.007 (p= 0.875) at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to increase by up to 0.7% when BS increase by one percent. Based on the insignificant criterion (p=0.875> 0.01; 0.05; 0.1), the null hypothesis H01 that there is no significant relationship between board size and corporate social responsibility of non-financial companies listed in the Nigerian Stock Exchange is accepted.

## Hypothesis 2:

**H02:** There is no significant relationship between board independence and corporate social responsibility of non-financial companies listed in the Nigerian Stock Exchange.

The second hypothesis of this study states that there is no significant relationship between board independence and corporate social responsibility of non-financial companies listed in the Nigerian Stock Exchange. The evidence provided by the regression result of fixed effect in model 2 showed that the variable of BND exhibits positive significant impact 1.555 (p= 0.059) at 10%. This implies that corporate social responsibility is predicted to increase by up to 1.56 % when BND increase by one percent. Based on the significant criterion (p=0.059<0.1), the null hypothesis H02 that there is no significant relationship between board independence and corporate social responsibility of non-financial companies listed in the Nigerian Stock Exchange is rejected.

## Hypothesis 3:

**H03:** There is no significant relationship between board gender diversity and corporate social responsibility of non-financial companies listed in the Nigerian Stock Exchange.

The third hypothesis of this study states that there is no significant relationship between board gender and corporate social responsibility of non-financial companies listed in the Nigerian Stock Exchange. The evidence provided by the regression result of fixed effect in model 2 showed that the variable of BGD exhibits positive insignificant impact 1.129 (p= 0.204) at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to increase by up to 1.129% when BGD increase by one percent. Based on the insignificant criterion (p=0.204>0.01; 0.05; 0.1), the null hypothesis H03 that there is no significant relationship between board gender diversity and corporate social responsibility of non-financial companies listed in the Nigerian Stock Exchange is accepted.

## Hypothesis 4:

**H04:** There is no significant relationship between board financial expertise and corporate social responsibility of non-financial companies listed in the Nigerian Stock Exchange.

The fourth hypothesis of this study states that there is no significant relationship between board financial expertise and corporate social responsibility of non-financial companies listed in the Nigerian Stock Exchange. The evidence provided by the regression result of fixed effect in model 2 showed that the variable of BFX exhibits inverse insignificant impact -0.133 (p= 0.918) at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to decline by up to 13.3% when BFX increase by one percent. Based on the insignificant criterion (p= = 0.918>0.01; 0.05; 0.1), the null hypothesis H04 that there is no significant relationship between board financial expertise and corporate social responsibility of non-financial companies listed in the Nigerian Stock Exchange is accepted.

## Hypothesis 5:

**H05:** There is no significant relationship between corporate governance and corporate social responsibility when moderated with firm size of non-financial companies listed in the Nigerian Stock Exchange.

In order to test this hypothesis, it was further sub-divided into five sub-hypotheses.

**H05a:** There is no significant relationship between board size and corporate social responsibility when moderated with firm size of non-financial companies listed in the Nigerian Stock Exchange.

The fifth (**H05a**) hypothesis of this study states that there is no significant relationship between board size and corporate social responsibility when moderated with firm size of non-financial

companies listed in the Nigerian Stock Exchange. The evidence provided by the regression result of fixed effect in model 2 showed that the variable of BS\*FS exhibits inverse insignificant impact -0.042 (p= 0.121) at 1%, 5% and 10%. This implies that corporate social responsibility is predicted to decline marginal by up to 4.2% when BS increase by one percent when moderated with firm size. Based on the insignificant criterion (p= 0.121>0.01; 0.05; 0.1), the null hypothesis H05a that that there is no significant relationship between board size and corporate social responsibility when moderated with firm size of non-financial companies listed in the Nigerian Stock Exchange is accepted.

**H05b:** There is no significant relationship between board independence and corporate social responsibility when moderated with firm size of non-financial companies listed in the Nigerian Stock Exchange.

The fifth (**H05b**) hypothesis of this study states that there is no significant relationship between board independence and corporate social responsibility when moderated with firm size of non- financial companies listed in the Nigerian Stock Exchange. The evidence provided by the regression result of fixed effect in model 2 showed that the variable of BND\*FS exhibits inverse significant impact -1.131 (p= 0.059) 5%. This implies that corporate social responsibility is predicted to decline marginal by up to 1.13% when BND increase by one percent when moderated with firm size. Based on the significant criterion (p= 0.059<0.05), the null hypothesis H05b that there is no significant relationship between board independence and corporate social responsibility when moderated with firm size of non-financial companies listed in the Nigerian Stock Exchange is rejected.

**H05c:** There is no significant relationship between board gender diversity and corporate social responsibility when moderated with firm size of non-financial companies listed in the Nigerian Stock Exchange.

The fifth (**H05c**) hypothesis of this study states that there is no significant relationship between board gender diversity and corporate social responsibility when moderated with firm size of non- financial companies listed in the Nigerian Stock Exchange. The evidence provided by the regression result of fixed effect in model 2 showed that the variable of BGD\*FS exhibits positive insignificant impact 1.075 (p= 0.140) 5%. This implies that corporate social responsibility is predicted to increase marginal by up to 1.08% when BGD increase by one percent when moderated with firm size. Based on the insignificant criterion (p= 0.140>0.05), the null hypothesis H05c that there is no significant relationship between board gender diversity and corporate social responsibility when moderated with firm size of non-financial companies listed in the Nigerian Stock Exchange is accepted.

**H05d:** There is no significant relationship between board financial expertise and corporate social responsibility when moderated with firm size of non-financial companies listed in the Nigerian Stock Exchange.

The fifth (**H05d**) hypothesis of this study states that there is no significant relationship between board financial expertise and corporate social responsibility when moderated with firm size of non-financial companies listed in the Nigerian Stock Exchange. The evidence provided by the regression result of fixed effect in model 2 showed that the variable of BFX\*FS exhibits positive insignificant impact 1.397 (p= 0.238) 1%, 5% and 10%. This implies that corporate social responsibility is predicted to increase marginal by up to 1.40% when BFX increase by one

percent when moderated with firm size. Based on the insignificant criterion (p= 0.238>0.01, 0.05 and 0.1), the null hypothesis H05d that there is no significant relationship between board financial expertise and corporate social responsibility when moderated with firm size of non-financial companies listed in the Nigerian Stock Exchange is accepted.

# CHAPTER FIVE DISCUSSION OF FINDINGS

# Discussion of Findings

# Board Size and Corporate Social Responsibility

As observed from the first hypothesis test, the null hypothesis that board size has no significant relationship with corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange was accepted. The probability value is statistically insignificant which led to the acceptance the null hypothesis. The evidence provided by the regression result showed that board size exhibits positive, though insignificant impact on corporate social responsibility. The positive relationship is in tandem with the stakeholder theory, however caution should be taken in drawing inferences from it because it is not significant. Therefore, the size of the board is insignificant in determining sustainability issues such as corporate social responsibility activities. No specific number of board size is stipulated in the Nigerian Code of Corporate Governance, rather it states that the board should be of a sufficient size to effectively undertake and fulfil its business; to oversee, monitor, direct and control the company’s activities and be relative to the scale and complexity of its operations. Consequently, no threshold exist on what determines large or small board size. Lipton and Lorch (1992) recommended limiting the number of directors on a board to seven or eight, as numbers beyond that it would be difficult for the CEO to control. On the premised of Lipton and Lorch (1992), the average board size of eight (8) members could suggests that Nigerian companies have large board size, however relative to their activities and complexities of their operation. The positive relationship as revealed in this study (although caution should be exercised in making inferences from the estimates because it didn’t

pass the test of significant) could be due to the fact that such a board may enhance the board’s monitoring capabilities and reduce the discretionary power of managers (De Andres & Vallelado, 2008). Large boards may also reflect a range of backgrounds, contributing broader knowledge and different ideas to the discussion (Ahmed, Islam & Hassan 2012). According to Benson, Pfeffer and Salancik (1978), a greater board size has an impact on links with the external environment. Larger boards reflect a wider range of stakeholders. Luoma and Goodstein conducted a study on publicly traded US firms, finding that stakeholders were better represented in larger firms (Luoma & Goodstein, 1999). Several studies highlight that large boards allow companies to connect better with their environment (Hillman, Withers, & Collins, 2009). For example, the literature shows that BoD’s key role is to legitimize and boost a firm’s public image (Certo, Daily, & Dalton, 2001) and to build external relationships (Peterson, & Philpot, 2009).

# Board Independence and Corporate Social Responsibility

As observed from the second hypothesis test, the null hypothesis that board independence has no significant relationship with corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange is rejected. The probability value is statistically significant which led to the rejection of the null hypothesis. The evidence provided by the regression result showed that board independence exhibits significant positive relationship with corporate social responsibility. The positive relationship is in tandem with the stakeholder theory and it is significant. The positive relationship suggests that board independence is germane in determining corporate social responsibility activities. Due to the voluntary nature of CSR information, its disclosure could be purely based on the preference and motives of the managers and directors (Healy & Palepu 2001; Meek et al., 1995). The board of directors enjoys full discretion in revealing the information and in deciding the content of the report to be disclosed

(Luo, Le, Yi-Chen, &Qingliang, 2012). Independent director plays a very important role as they are not only accountable to shareholders only but also ensure the welfare of other stakeholders (Ibrahim &Angelidis 1995). According to Frias-Aceituno et al. (2013a), independent directors also engage in motivating firms to disclose sustainability information, consequently encouraging disclosure of CSR information in the firm.

# Board Gender Diversity and Corporate Social Responsibility

As observed from the third hypothesis test, the null hypothesis that board gender diversity has no significant relationship with corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange is accepted. The probability value is statistically insignificant which led to the acceptance of the null hypothesis. The evidence provided by the regression result showed that board gender diversity exhibits insignificant positive relationship with corporate social responsibility. The positive relationship is in tandem with the stakeholder theory, however caution should be taken in drawing inferences from it because it is not significant. Gender inclusive leadership has been suggested as a solution to reducing agency costs. Boulota (2005) explain that women are thought to be more ‘communal’ and men more ‘agentic’. Companies with female representation on boards tend to use non-financial measures such as innovation and social responsibility more than their male counterparts which will aid in reducing any conflict of interest that may occur (Stephenson, 2004). Post et al. (2010) posit that female endearment to CSR orientation could stem from their values, moral orientation and ethical judgment, as women are, for example, more likely to respond to the needs of others and recognize unethical actions. The positive relationship is in tandem with the studies of Glory and Emilia (2016), Issa et al. (2020) who found that board gender diversity enhances corporate social responsibility.

# Board Financial Expertise and Corporate Social Responsibility

As observed from the fourth hypothesis test, the null hypothesis that board financial expertise has no significant relationship with corporate social responsibility among non-financial listed companies in the Nigerian Stock Exchange is accepted. The probability value is statistically insignificant which led to the acceptance of the null hypothesis. The evidence provided by the regression result showed that board financial expertise exhibits insignificant inverse relationship with corporate social responsibility. The inverse relationship is not in tandem with the stakeholder theory. The result suggests that board financial expertise reduces corporate social responsibility disclosures, although insignificant which implies that proportion of directors with financial professional qualification has no impact on corporate social responsibility activities. The studies conducted by Harjoto et al. (2015) and Zhuang et al. (2018) goes contrary to the findings of this study as they concluded that board professionalism had a positive effect on CSR.

# The moderating Role of Firm Size on the Relationship between Corporate Governance and Corporate Social Responsibility

As observed from the fifth hypothesis test, the null hypothesis that there is no significant relationship between corporate governance and corporate social responsibility when moderated with firm size of non-financial companies listed in the Nigerian Stock Exchange is accepted. This is ascertain by further splitting the hypothesis into four and each was tested: (i) firm size moderating the relationship between board size and corporate social responsibility; (ii) firm size moderating the relationship between board independence and corporate social responsibility; (iii) firm size moderating the relationship between board gender diversity and corporate social responsibility; and (iv) firm size moderating the relationship between board financial expertise and corporate social responsibility disclosures. For firm size moderating the relationship between board size and corporate social responsibility, the probability value is statistically insignificant

which led to the acceptance of the null hypothesis. The evidence provided by the regression result showed that the moderation of firm size on the relationship between board size and corporate social responsibility disclosure exhibits inverse insignificant impact. The inverse relationship is not in tandem with the stakeholder theory. For firm size moderating the relationship between board independence and corporate social responsibility, the probability value is statistically insignificant which led to the acceptance of the null hypothesis. The evidence provided by the regression result showed that the moderation of firm size on the relationship between board size and corporate social responsibility disclosure exhibits inverse insignificant impact. The inverse relationship is not in tandem with the stakeholder theory. For firm size moderating the relationship between board gender diversity and corporate social responsibility, the probability value is statistically insignificant which led to the acceptance of the null hypothesis. The evidence provided by the regression result showed that the moderation of firm size on the relationship between board size and corporate social responsibility disclosure exhibits positive insignificant impact. The positive relationship is in tandem with the stakeholder theory, however, caution showed be taken because it didn’t pass the test of significance. Finally, for firm size moderating the relationship between board financial expertise and corporate social responsibility, the probability value is statistically insignificant which led to the acceptance of the null hypothesis. The evidence provided by the regression result showed that the moderation of firm size on the relationship between board financial expertise and corporate social responsibility disclosure exhibits positive insignificant impact. The positive relationship is in tandem with the stakeholder theory, however, caution showed be taken because it didn’t pass the test of significance.

# CHAPTER SIX

**SUMMARY OF FINDINGS, CONCLUSION AND RECOMMENDATION**

# 6.1. Summary of Findings

1. The evidence provided by the regression result of fixed effect in model 2, table 4.4 showed that the variable of BS exhibits positive insignificant impact 0.007 (p= 0.875) at 1%, 5% and 10%.
2. The evidence provided by the regression result of fixed effect in model 2, table 4.4 showed that the variable of BND exhibits positive significant impact 1.555 (p= 0.059) at 10%.
3. The evidence provided by the regression result of fixed effect in model 2, table 4.4 showed that the variable of BGD exhibits positive insignificant impact 1.129 (p= 0.204) at 1%, 5% and 10%.
4. The evidence provided by the regression result of fixed effect in model 2, table 4.4 showed that the variable of BFX exhibits inverse insignificant impact -0.133 (p= 0.918) at 1%, 5% and 10%.
5. (a) The evidence provided by the regression result of fixed effect in model 2, table 4.5 showed that the variable of BS\*FS exhibits inverse insignificant impact -0.042 (p= 0.121) at 1%, 5% and 10%; (b) The evidence provided by the regression result of fixed effect in model 2, table

4.5 showed that the variable of BND\*FS exhibits inverse significant impact -1.131 (p= 0.059) 5%; (c) The evidence provided by the regression result of fixed effect in model 2, table 4.5 showed that the variable of BGD\*FS exhibits positive insignificant impact 1.075 (p= 0.140) 5%;

and (d) The evidence provided by the regression result of fixed effect in model 2 showed that the variable of BFX\*FS exhibits positive insignificant impact 1.397 (p= 0.238) 1%, 5% and 10%.

# Conclusion

The commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce, as well as their host community has continued to gain momentum. Businesses continually face pressures and tension from different stakeholders, such as employee pressures to recognize certain employee rights in the workplace, consumer pressures for the business to withhold price increase and to produce safe products, community and environmental pressures that the business operation does not threaten the safety of the local community. The belief over time that beyond making profit for the shareholders of the company, business enterprises should also serve the interests of all other stakeholders, which has led to the concept of CSR.

Giving that corporate social responsibility is voluntary in nature, past studies have sort to identify its drivers such as firm attributes, corporate governance attributes etc. However, much emphasis has not been giving to the moderating effect firm size has on the relationship between a set of CSR drivers and CSR. In a bid to contribute to knowledge, the study investigate corporate governance and corporate social responsibility, the moderating role of firm size. The study specifically examined board size, board independence, board gender diversity, board financial expertise and the moderating role of firm size on the relationship between the aforementioned variables and CSR. The study used seventy (70) non-financial firms sampled randomly from the population during the period 2014 to 2020 amounting to four hundred and ninety (490) observations. In a bid to provide answers to the research questions, the study raised five hypotheses, both univariate and multivariate analyses were performed. The univariate analyses

include the descriptive and correlation result while the multivariate include the panel estimation result. .For the purpose of selecting the model for making inferences on the research hypotheses, the outcome of the Hausman test suggested the suitability of both the random and the fixed technique for table 4.4 and 4.5 respectively. Relying on the preferred models for the hypotheses tests, the result showed that among four of the corporate governance variables of the study, one (board independence) exhibits positive significant impact on corporate social responsibility at 10% while the interaction of firm size and corporate governance variables with exception of firm size moderating board independence, showed no significant impact on corporate social responsibility. Based on the outcome, it can be summarised that in the Nigerian context, corporate governance plays insignificant role in determining companies’ inclination on CSR activities.

# Recommendations

In view of the findings and conclusions drawn from the results of the study, the following recommendations were proffered by the study:

* + 1. Though board size has insignificant impact on corporate social responsibility, however companies should ensure that their board is of sufficient size in line with company scale of operations. Also, the board should include members who has initiative/inclination for CSR.
    2. Board independence exhibits significant impact on corporate social responsibility. In line with the NCCG (2018), the study recommends that majority of board members should be non-executive directors.
    3. Though board gender diversity has insignificant impact on corporate social responsibility, however the board should promote diversity in its membership and one of such areas is gender diversity. Having gender inclusiveness in the board could promote corporate social responsibility disclosure.
    4. Though board financial expertise has no significant impact on corporate social responsibility, however the study recommends financial literacy of the board members which is a key requirement for corporate board.
    5. On the moderation of firm size on the relationship between corporate governance variables and corporate social responsibility, it was found to have insignificant impact on corporate social responsibility. However, the study recommends that as companies grow in size, CSR activities should be entrenched as this has the tendencies to boost their image.

# Contribution to Knowledge

The study made the following contribution to knowledge: (i) the study bridge the existing gap in literature by examining the moderating role of firms size on the relationship between corporate governance and corporate social responsibility; (ii) It provides a current and elaborate basis upon which managers of companies can take decisions relating to corporate social responsibility activities; (iii) researchers and other scholars in accounting and finance will also find this study useful in their bid to further knowledge on issues relating to trending researchable issues; (iv) the study also enlighten government more on the contributions of companies to the operating environment and the economy at large.

# Areas for Further Studies

Future studies should be done on the determinants of corporate social responsibility as well as the extent of its disclosures making a sectoral comparison. The aim of such comparison is to ascertain if CSR activities respond to sectoral sensitivity.

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# APPENDIX

Dependent Variable: LCSR

Method: Panel EGLS (Cross-section random effects) Date: 08/01/21 Time: 08:44

Sample: 2014 2020

Periods included: 7

Cross-sections included: 54

Total panel (unbalanced) observations: 312

Swamy and Arora estimator of component variances

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 5.975159 | 0.854844 | 6.989767 | 0.0000 |
| BS | 0.129567 | 0.045724 | 2.833703 | 0.0049 |
| BND | 1.437438 | 0.886796 | 1.620933 | 0.1061 |
| BGD | 2.093600 | 0.994794 | 2.104555 | 0.0361 |
| BFX | 2.258151 | 1.599430 | 1.411848 | 0.1590 |

Effects Specification

S.D. Rho

Cross-section random 1.580108 0.6460

Idiosyncratic random 1.169704 0.3540

Weighted Statistics

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.052538 | Mean dependent var | 2.641029 |
| Adjusted R-squared | 0.040193 | S.D. dependent var | 1.181069 |
| S.E. of regression | 1.197988 | Sum squared resid | 440.5990 |
| F-statistic | 4.255880 | Durbin-Watson stat | 1.484312 |
| Prob(F-statistic) | 0.002289 |  |  |
|  | Unweighted Statistics | |  |
| R-squared | 0.147065 Mean dependent var | | 9.302143 |
| Sum squared resid | 1310.967 Durbin-Watson stat | | 0.622712 |

|  |  |  |  |
| --- | --- | --- | --- |
| Correlated Random Effects - Hausman Tes Equation: Untitled  Test cross-section random effects | t |  | |
| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
| Cross-section random | 15.351151 | 4 | 0.0040 |

Cross-section random effects test comparisons:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Fixed | Random | Var(Diff.) | Prob. |
| BND | 1.499720 | 1.437438 | 0.126599 | 0.8610 |
| BS | 0.035785 | 0.129567 | 0.000763 | 0.0007 |
| BGD | 1.871125 | 2.093600 | 0.288750 | 0.6789 |
| BFX | 0.742717 | 2.258151 | 2.365437 | 0.3245 |

Cross-section random effects test equation: Dependent Variable: LCSR

Method: Panel Least Squares Date: 08/03/21 Time: 06:36 Sample: 2014 2020

Periods included: 7

Cross-sections included: 54

Total panel (unbalanced) observations: 312

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 7.546785 | 1.006581 | 7.497446 | 0.0000 |
| BND | 1.499720 | 0.955514 | 1.569543 | 0.1178 |
| BS | 0.035785 | 0.053420 | 0.669881 | 0.5035 |
| BGD | 1.871125 | 1.130648 | 1.654913 | 0.0992 |
| BFX | 0.742717 | 2.218921 | 0.334720 | 0.7381 |

Effects Specification

Cross-section fixed (dummy variables)

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.773895 | Mean dependent var | 9.302143 |
| Adjusted R-squared | 0.723155 | S.D. dependent var | 2.223094 |
| S.E. of regression | 1.169704 | Akaike info criterion | 3.317504 |
| Sum squared resid | 347.5244 | Schwarz criterion | 4.013318 |
| Log likelihood | -459.5306 | Hannan-Quinn criter. | 3.595600 |
| F-statistic | 15.25217 | Durbin-Watson stat | 1.600606 |
| Prob(F-statistic) | 0.000000 |  |  |

Dependent Variable: LCSR Method: Panel Least Squares Date: 08/03/21 Time: 06:37 Sample: 2014 2020

Periods included: 7

Cross-sections included: 54

Total panel (unbalanced) observations: 312

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 7.546785 | 1.006581 | 7.497446 | 0.0000 |
| BND | 1.499720 | 0.955514 | 1.569543 | 0.1178 |
| BS | 0.035785 | 0.053420 | 0.669881 | 0.5035 |
| BGD | 1.871125 | 1.130648 | 1.654913 | 0.0992 |
| BFX | 0.742717 | 2.218921 | 0.334720 | 0.7381 |

Effects Specification

Cross-section fixed (dummy variables)

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.773895 | Mean dependent var | 9.302143 |
| Adjusted R-squared | 0.723155 | S.D. dependent var | 2.223094 |
| S.E. of regression | 1.169704 | Akaike info criterion | 3.317504 |
| Sum squared resid | 347.5244 | Schwarz criterion | 4.013318 |
| Log likelihood | -459.5306 | Hannan-Quinn criter. | 3.595600 |
| F-statistic | 15.25217 | Durbin-Watson stat | 1.600606 |
| Prob(F-statistic) | 0.000000 |  |  |

Dependent Variable: LCSR

Method: Panel EGLS (Cross-section random effects) Date: 08/01/21 Time: 08:48

Sample: 2014 2020

Periods included: 7

Cross-sections included: 54

Total panel (unbalanced) observations: 312

Swamy and Arora estimator of component variances

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | -6.709155 | 1.407691 | -4.766072 | 0.0000 |
| BS | 0.006855 | 0.043352 | 0.158116 | 0.8745 |
| BND | 1.554525 | 0.819443 | 1.897051 | 0.0588 |
| BGD | 1.128683 | 0.886854 | 1.272682 | 0.2041 |
| BFX | -0.133135 | 1.298044 | -0.102566 | 0.9184 |
| FA | 0.009556 | 0.007125 | 1.341047 | 0.1809 |
| FS | 0.831891 | 0.085984 | 9.674945 | 0.0000 |

Effects Specification

S.D. Rho

Cross-section random 0.961098 0.4091

Idiosyncratic random 1.155188 0.5909

Weighted Statistics

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.309036 | Mean dependent var | 4.017698 |
| Adjusted R-squared | 0.295443 | S.D. dependent var | 1.302696 |
| S.E. of regression | 1.166310 | Sum squared resid | 414.8849 |
| F-statistic | 22.73538 | Durbin-Watson stat | 1.591838 |
| Prob(F-statistic) | 0.000000 |  |  |
|  | Unweighted Statistics | |  |
| R-squared | 0.565937 Mean dependent var | | 9.302143 |
| Sum squared resid | 667.1585 Durbin-Watson stat | | 1.093044 |

|  |  |  |  |
| --- | --- | --- | --- |
| Correlated Random Effects - Hausman Test Equation: Untitled  Test cross-section random effects |  | | |
| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
| Cross-section random | 9.802994 | 6 | 0.1332 |

Cross-section random effects test comparisons:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Fixed | Random | Var(Diff.) | Prob. |
| BS | 0.035912 | 0.006855 | 0.001072 | 0.3748 |
| BND | 1.525519 | 1.554525 | 0.233156 | 0.9521 |
| BGD | 0.460008 | 1.128683 | 0.706321 | 0.4262 |
| BFX | 0.220493 | -0.133135 | 3.194102 | 0.8431 |
| FA | 0.096459 | 0.009556 | 0.001645 | 0.0321 |
| FS | 0.167754 | 0.831891 | 0.054813 | 0.0046 |

Cross-section random effects test equation: Dependent Variable: LCSR

Method: Panel Least Squares Date: 08/01/21 Time: 08:49 Sample: 2014 2020

Periods included: 7

Cross-sections included: 54

Total panel (unbalanced) observations: 312

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 0.832731 | 3.949108 | 0.210866 | 0.8332 |
| BS | 0.035912 | 0.054327 | 0.661039 | 0.5092 |
| BND | 1.525519 | 0.951127 | 1.603907 | 0.1100 |
| BGD | 0.460008 | 1.221814 | 0.376496 | 0.7069 |
| BFX | 0.220493 | 2.208851 | 0.099822 | 0.9206 |
| FA | 0.096459 | 0.041182 | 2.342276 | 0.0199 |
| FS | 0.167754 | 0.249412 | 0.672596 | 0.5018 |

Effects Specification

Cross-section fixed (dummy variables)

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.781209 | Mean dependent var | 9.302143 |
| Adjusted R-squared | 0.729984 | S.D. dependent var | 2.223094 |
| S.E. of regression | 1.155188 | Akaike info criterion | 3.297444 |

|  |  |  |  |
| --- | --- | --- | --- |
| Sum squared resid | 336.2836 | Schwarz criterion | 4.017253 |
| Log likelihood | -454.4013 | Hannan-Quinn criter. | 3.585130 |
| F-statistic | 15.25056 | Durbin-Watson stat | 1.815832 |
| Prob(F-statistic) | 0.000000 |  |  |

Dependent Variable: LCSR Method: Panel Least Squares Date: 08/01/21 Time: 08:50 Sample: 2014 2020

Periods included: 7

Cross-sections included: 54

Total panel (unbalanced) observations: 312

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 7.546785 | 1.006581 | 7.497446 | 0.0000 |
| BS | 0.035785 | 0.053420 | 0.669881 | 0.5035 |
| BND | 1.499720 | 0.955514 | 1.569543 | 0.1178 |
| BGD | 1.871125 | 1.130648 | 1.654913 | 0.0992 |
| BFX | 0.742717 | 2.218921 | 0.334720 | 0.7381 |

Effects Specification

Cross-section fixed (dummy variables)

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.773895 | Mean dependent var | 9.302143 |
| Adjusted R-squared | 0.723155 | S.D. dependent var | 2.223094 |
| S.E. of regression | 1.169704 | Akaike info criterion | 3.317504 |
| Sum squared resid | 347.5244 | Schwarz criterion | 4.013318 |
| Log likelihood | -459.5306 | Hannan-Quinn criter. | 3.595600 |
| F-statistic | 15.25217 | Durbin-Watson stat | 1.822913 |
| Prob(F-statistic) | 0.000000 |  |  |

Dependent Variable: LCSR Method: Panel Least Squares Date: 08/01/21 Time: 08:50 Sample: 2014 2020

Periods included: 7

Cross-sections included: 54

Total panel (unbalanced) observations: 312

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 0.832731 | 3.949108 | 0.210866 | 0.8332 |
| BS | 0.035912 | 0.054327 | 0.661039 | 0.5092 |
| BND | 1.525519 | 0.951127 | 1.603907 | 0.1100 |
| BGD | 0.460008 | 1.221814 | 0.376496 | 0.7069 |
| BFX | 0.220493 | 2.208851 | 0.099822 | 0.9206 |
| FA | 0.096459 | 0.041182 | 2.342276 | 0.0199 |
| FS | 0.167754 | 0.249412 | 0.672596 | 0.5018 |

Effects Specification

Cross-section fixed (dummy variables)

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.781209 | Mean dependent var | 9.302143 |
| Adjusted R-squared | 0.729984 | S.D. dependent var | 2.223094 |
| S.E. of regression | 1.155188 | Akaike info criterion | 3.297444 |
| Sum squared resid | 336.2836 | Schwarz criterion | 4.017253 |
| Log likelihood | -454.4013 | Hannan-Quinn criter. | 3.585130 |
| F-statistic | 15.25056 | Durbin-Watson stat | 1.815832 |
| Prob(F-statistic) | 0.000000 |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | CSRD | LCSR | BS | BND | BGD | BFX | FS | FA |
| Mean | 0.499135 | 9.302143 | 9.807692 | 0.636746 | 0.141062 | 0.249761 | 17.21230 | 42.90385 |
| Median | 0.545000 | 9.239851 | 10.00000 | 0.636364 | 0.125000 | 0.250000 | 17.33993 | 45.00000 |
| Maximum | 0.930000 | 14.86353 | 19.00000 | 1.000000 | 0.666667 | 0.500000 | 21.42758 | 97.00000 |
| Minimum | 0.000000 | 4.219508 | 4.000000 | 0.333333 | 0.000000 | 0.000000 | 12.06417 | 3.000000 |
| Std. Dev. | 0.261504 | 2.223094 | 2.911592 | 0.112774 | 0.117102 | 0.099395 | 1.876492 | 21.00506 |
| Skewness | -0.519016 | 0.022651 | 0.594893 | -0.047718 | 0.755195 | 0.026153 | -0.194963 | 0.089109 |
| Kurtosis | 2.183861 | 2.724461 | 3.106910 | 2.897501 | 4.024398 | 3.078452 | 2.670257 | 2.661337 |
| Jarque-Bera | 22.66670 | 1.013665 | 18.55128 | 0.254985 | 43.29873 | 0.115578 | 3.390040 | 1.903899 |
| Probability | 0.000012 | 0.602401 | 0.000094 | 0.880300 | 0.000000 | 0.943849 | 0.183596 | 0.385988 |
| Sum | 155.7300 | 2902.269 | 3060.000 | 198.6648 | 44.01131 | 77.92551 | 5370.239 | 13386.00 |
| Sum Sq. Dev. | 21.26747 | 1537.007 | 2636.462 | 3.955310 | 4.264680 | 3.072466 | 1095.100 | 137217.1 |
| Observations | 312 | 312 | 312 | 312 | 312 | 312 | 312 | 312 |

Dependent Variable: LCSR Method: Least Squares Date: 08/01/21 Time: 09:08 Sample: 1 490

Included observations: 312

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 3.886620 | 0.766919 | 5.067838 | 0.0000 |
| BS | 0.315591 | 0.038996 | 8.092981 | 0.0000 |
| BND | 0.970982 | 1.005020 | 0.966132 | 0.3347 |
| BGD | 4.072108 | 0.969553 | 4.199984 | 0.0000 |
| BFX | 4.514764 | 1.142035 | 3.953264 | 0.0001 |
| R-squared | 0.231550 | Mean dependent var | | 9.302143 |
| Adjusted R-squared | 0.221538 | S.D. dependent var | | 2.223094 |
| S.E. of regression | 1.961447 | Akaike info criterion | | 4.201138 |
| Sum squared resid | 1181.113 | Schwarz criterion | | 4.261122 |
| Log likelihood | -650.3775 | Hannan-Quinn criter. | | 4.225111 |
| F-statistic | 23.12640 | Durbin-Watson stat | | 0.746397 |
| Prob(F-statistic) | 0.000000 |  | |  |

Dependent Variable: LCSR Method: Least Squares Date: 08/01/21 Time: 09:07 Sample: 1 490

Included observations: 312

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | -6.995063 | 0.919133 | -7.610502 | 0.0000 |
| BS | -0.003692 | 0.035859 | -0.102972 | 0.9181 |
| BND | 1.607551 | 0.772016 | 2.082278 | 0.0382 |
| BGD | 1.394908 | 0.747456 | 1.866206 | 0.0630 |
| BFX | 0.231338 | 0.901620 | 0.256580 | 0.7977 |
| FS | 0.861661 | 0.055753 | 15.45494 | 0.0000 |
| FA | 0.005223 | 0.004109 | 1.271190 | 0.2046 |
| R-squared | 0.570701 | Mean dependent var | | 9.302143 |
| Adjusted R-squared | 0.562255 | S.D. dependent var | | 2.223094 |
| S.E. of regression | 1.470849 | Akaike info criterion | | 3.631738 |
| Sum squared resid | 659.8364 | Schwarz criterion | | 3.715715 |
| Log likelihood | -559.5511 | Hannan-Quinn criter. | | 3.665301 |
| F-statistic | 67.57664 | Durbin-Watson stat | | 1.109118 |
| Prob(F-statistic) | 0.000000 |  | |  |

Variance Inflation Factors Date: 08/01/21 Time: 09:08 Sample: 1 490

Included observations: 312

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Coefficient Variance | Uncentered VIF | Centered VIF |
| C | 0.844805 | 121.8358 | NA |
| BS | 0.001286 | 19.40490 | 1.567026 |
| BND | 0.596008 | 35.93971 | 1.089673 |
| BGD | 0.558691 | 2.704618 | 1.101340 |
| BFX | 0.812919 | 8.467850 | 1.154511 |
| FA | 1.69E-05 | 5.553251 | 1.070936 |
| FS | 0.003108 | 134.3845 | 1.573458 |

Heteroskedasticity Test: ARCH

|  |  |  |
| --- | --- | --- |
| F-statistic | 21.47237 Prob. F(1,276) | 0.0000 |
| Obs\*R-squared | 20.06680 Prob. Chi-Square(1) | 0.0000 |

Test Equation:

Dependent Variable: RESID^2 Method: Least Squares

Date: 08/01/21 Time: 09:10 Sample (adjusted): 2 490

Included observations: 278 after adjustments

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 1.617148 | 0.284227 | 5.689636 | 0.0000 |
| RESID^2(-1) | 0.270490 | 0.058373 | 4.633829 | 0.0000 |
| R-squared | 0.072183 | Mean dependent var | | 2.176230 |
| Adjusted R-squared | 0.068821 | S.D. dependent var | | 4.446584 |
| S.E. of regression | 4.290847 | Akaike info criterion | | 5.758014 |
| Sum squared resid | 5081.537 | Schwarz criterion | | 5.784112 |
| Log likelihood | -798.3639 | Hannan-Quinn criter. | | 5.768484 |
| F-statistic | 21.47237 | Durbin-Watson stat | | 2.261155 |
| Prob(F-statistic) | 0.000006 |  | |  |

Breusch-Godfrey Serial Correlation LM Test:

|  |  |  |
| --- | --- | --- |
| F-statistic | 32.98255 Prob. F(2,303) | 0.0000 |
| Obs\*R-squared | 55.78065 Prob. Chi-Square(2) | 0.0000 |

Test Equation:

Dependent Variable: RESID Method: Least Squares Date: 08/01/21 Time: 09:11 Sample: 1 490

Included observations: 312

Presample and interior missing value lagged residuals set to zero.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | -0.186009 | 0.836915 | -0.222256 | 0.8243 |
| BS | -0.004602 | 0.032617 | -0.141097 | 0.8879 |
| BND | -0.210553 | 0.705365 | -0.298502 | 0.7655 |
| BGD | -0.025516 | 0.679591 | -0.037547 | 0.9701 |
| BFX | 0.049499 | 0.819773 | 0.060381 | 0.9519 |
| FA | 0.001715 | 0.003742 | 0.458423 | 0.6470 |
| FS | 0.015265 | 0.050726 | 0.300927 | 0.7637 |
| RESID(-1) | 0.435981 | 0.061599 | 7.077720 | 0.0000 |
| RESID(-2) | 0.060462 | 0.063564 | 0.951210 | 0.3423 |
| R-squared | 0.178784 | Mean dependent var | | -3.50E-15 |
| Adjusted R-squared | 0.157102 | S.D. dependent var | | 1.456592 |
| S.E. of regression | 1.337290 | Akaike info criterion | | 3.447589 |
| Sum squared resid | 541.8681 | Schwarz criterion | | 3.555560 |
| Log likelihood | -528.8239 | Hannan-Quinn criter. | | 3.490742 |
| F-statistic | 8.245638 | Durbin-Watson stat | | 1.972817 |
| Prob(F-statistic) | 0.000000 |  | |  |

Ramsey RESET Test Equation: UNTITLED

Specification: LCSR C BS BND BGD BFX FA FS Omitted Variables: Squares of fitted values

|  |  |  |  |
| --- | --- | --- | --- |
| Value df Probability | | | |
| t-statistic | 2.081760 | 304 | 0.0382 |
| F-statistic | 4.333725 | (1, 304) | 0.0382 |
| Likelihood ratio | 4.416365 | 1 | 0.0356 |
| F-test summary: |  |  | Mean |
| Sum of Sq. df Squares | | | |
| Test SSR | 9.274202 | 1 | 9.274202 |
| Restricted SSR | 659.8364 | 305 | 2.163398 |
| Unrestricted SSR | 650.5622 | 304 | 2.140007 |
| LR test summary: |  |  |  |

Value

Restricted LogL -559.5511

Unrestricted LogL -557.3429

Unrestricted Test Equation: Dependent Variable: LCSR Method: Least Squares Date: 08/01/21 Time: 09:11 Sample: 1 490

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Included observations: 312 |  | | | |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 3.843905 | 5.286279 | 0.727148 | 0.4677 |
| BS | -0.008434 | 0.035737 | -0.235997 | 0.8136 |
| BND | -0.152881 | 1.142227 | -0.133845 | 0.8936 |
| BGD | 0.448918 | 0.871290 | 0.515233 | 0.6068 |
| BFX | 0.575110 | 0.911811 | 0.630734 | 0.5287 |
| FA | 0.001819 | 0.004402 | 0.413146 | 0.6798 |
| FS | 0.039079 | 0.399010 | 0.097939 | 0.9220 |
| FITTED^2 | 0.052391 | 0.025167 | 2.081760 | 0.0382 |

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.576735 | Mean dependent var | 9.302143 |
| Adjusted R-squared | 0.566988 | S.D. dependent var | 2.223094 |
| S.E. of regression | 1.462876 | Akaike info criterion | 3.623993 |
| Sum squared resid | 650.5622 | Schwarz criterion | 3.719967 |
| Log likelihood | -557.3429 | Hannan-Quinn criter. | 3.662351 |
| F-statistic | 59.17505 | Durbin-Watson stat | 1.129510 |
| Prob(F-statistic) | 0.000000 |  |  |

**Content analysis result**

Dependent Variable: CSRD

Method: Panel EGLS (Cross-section random effects) Date: 08/01/21 Time: 20:30

Sample: 2014 2020

Periods included: 7

Cross-sections included: 70

Total panel (balanced) observations: 490

Swamy and Arora estimator of component variances

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 0.573803 | 0.074091 | 7.744565 | 0.0000 |
| BD | 0.000756 | 0.004831 | 0.156520 | 0.8757 |
| BND | -0.018138 | 0.081104 | -0.223642 | 0.8231 |
| BGD | -3.14E-05 | 0.096086 | -0.000327 | 0.9997 |
| BFX | -0.269196 | 0.145692 | -1.847703 | 0.0653 |

Effects Specification

S.D. Rho

Cross-section random 0.217763 0.6897

Idiosyncratic random 0.146047 0.3103

Weighted Statistics

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.007381 | Mean dependent var | 0.123070 |
| Adjusted R-squared | -0.000806 | S.D. dependent var | 0.145791 |
| S.E. of regression | 0.145850 | Sum squared resid | 10.31697 |
| F-statistic | 0.901601 | Durbin-Watson stat | 0.802947 |
| Prob(F-statistic) | 0.462769 |  |  |
|  | Unweighted | Statistics |  |
| R-squared | -0.011335 | Mean dependent var | 0.500857 |
| Sum squared resid | 32.50091 | Durbin-Watson stat | 0.254884 |

Dependent Variable: CSRD

Method: Panel EGLS (Cross-section random effects) Date: 08/01/21 Time: 20:30

Sample: 2014 2020

Periods included: 7

Cross-sections included: 70

Total panel (balanced) observations: 490

Swamy and Arora estimator of component variances

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 0.832149 | 0.198377 | 4.194780 | 0.0000 |
| BD | 0.003327 | 0.005119 | 0.649901 | 0.5161 |
| BND | -0.020559 | 0.081245 | -0.253044 | 0.8003 |
| BGD | 0.010092 | 0.097156 | 0.103874 | 0.9173 |
| BFX | -0.251478 | 0.146832 | -1.712689 | 0.0874 |
| FA | 0.000974 | 0.001271 | 0.766931 | 0.4435 |
| FS | -0.019840 | 0.012392 | -1.601042 | 0.1100 |

Effects Specification

S.D. Rho

Cross-section random 0.219539 0.6934

Idiosyncratic random 0.145997 0.3066

Weighted Statistics

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.013274 | Mean dependent var | 0.122094 |
| Adjusted R-squared | 0.001017 | S.D. dependent var | 0.145636 |
| S.E. of regression | 0.145562 | Sum squared resid | 10.23394 |
| F-statistic | 1.082941 | Durbin-Watson stat | 0.808792 |
| Prob(F-statistic) | 0.371517 |  |  |
|  | Unweighted Statistics | |  |
| R-squared | 0.000741 Mean dependent var | | 0.500857 |
| Sum squared resid | 32.11282 Durbin-Watson stat | | 0.257752 |

|  |  |  |  |
| --- | --- | --- | --- |
| Correlated Random Effects - Hausman Test Equation: Untitled  Test cross-section random effects |  | | |
| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
| Cross-section random | 3.126892 | 6 | 0.7928 |

Cross-section random effects test comparisons:

Variable Fixed Random Var(Diff.) Prob.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BD | 0.005176 | 0.003327 | 0.000005 | 0.4266 |
| BND | -0.021871 | -0.020559 | 0.000516 | 0.9539 |
| BGD | 0.029599 | 0.010092 | 0.002447 | 0.6933 |
| BFX | -0.394916 | -0.251478 | 0.009878 | 0.1490 |
| FA | 0.001580 | 0.000974 | 0.000012 | 0.8629 |
| FS | -0.037457 | -0.019840 | 0.000464 | 0.4134 |

Cross-section random effects test equation: Dependent Variable: CSRD

Method: Panel Least Squares Date: 08/01/21 Time: 20:31 Sample: 2014 2020

Periods included: 7

Cross-sections included: 70

Total panel (balanced) observations: 490

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 1.114699 | 0.379420 | 2.937902 | 0.0035 |
| BD | 0.005176 | 0.005623 | 0.920565 | 0.3578 |
| BND | -0.021871 | 0.084362 | -0.259250 | 0.7956 |
| BGD | 0.029599 | 0.109024 | 0.271486 | 0.7862 |
| BFX | -0.394916 | 0.177308 | -2.227289 | 0.0265 |
| FA | 0.001580 | 0.003732 | 0.423405 | 0.6722 |
| FS | -0.037457 | 0.024850 | -1.507335 | 0.1325 |

Effects Specification

Cross-section fixed (dummy variables)

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.725409 | Mean dependent var | 0.500857 |
| Adjusted R-squared | 0.675664 | S.D. dependent var | 0.256357 |
| S.E. of regression | 0.145997 | Akaike info criterion | -0.868799 |
| Sum squared resid | 8.824444 | Schwarz criterion | -0.218238 |
| Log likelihood | 288.8557 | Hannan-Quinn criter. | -0.613300 |
| F-statistic | 14.58260 | Durbin-Watson stat | 0.947709 |
| Prob(F-statistic) | 0.000000 |  |  |

Dependent Variable: CSRD Method: Panel Least Squares Date: 08/01/21 Time: 20:31 Sample: 2014 2020

Periods included: 7

Cross-sections included: 70

Total panel (balanced) observations: 490

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 0.579744 | 0.076536 | 7.574814 | 0.0000 |
| BD | 0.003335 | 0.005436 | 0.613454 | 0.5399 |
| BND | -0.010921 | 0.084079 | -0.129887 | 0.8967 |
| BGD | 0.022460 | 0.104175 | 0.215595 | 0.8294 |
| BFX | -0.412797 | 0.176837 | -2.334341 | 0.0201 |

Effects Specification

Cross-section fixed (dummy variables)

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.723891 | Mean dependent var | 0.500857 |
| Adjusted R-squared | 0.675439 | S.D. dependent var | 0.256357 |
| S.E. of regression | 0.146047 | Akaike info criterion | -0.871451 |
| Sum squared resid | 8.873213 | Schwarz criterion | -0.238010 |
| Log likelihood | 287.5054 | Hannan-Quinn criter. | -0.622676 |
| F-statistic | 14.94044 | Durbin-Watson stat | 0.941369 |
| Prob(F-statistic) | 0.000000 |  |  |

Dependent Variable: CSRD Method: Panel Least Squares Date: 08/01/21 Time: 20:32 Sample: 2014 2020

Periods included: 7

Cross-sections included: 70

Total panel (balanced) observations: 490

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 1.114699 | 0.379420 | 2.937902 | 0.0035 |
| BD | 0.005176 | 0.005623 | 0.920565 | 0.3578 |
| BND | -0.021871 | 0.084362 | -0.259250 | 0.7956 |
| BGD | 0.029599 | 0.109024 | 0.271486 | 0.7862 |
| BFX | -0.394916 | 0.177308 | -2.227289 | 0.0265 |
| FA | 0.001580 | 0.003732 | 0.423405 | 0.6722 |
| FS | -0.037457 | 0.024850 | -1.507335 | 0.1325 |

Effects Specification

Cross-section fixed (dummy variables)

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.725409 | Mean dependent var | 0.500857 |
| Adjusted R-squared | 0.675664 | S.D. dependent var | 0.256357 |
| S.E. of regression | 0.145997 | Akaike info criterion | -0.868799 |
| Sum squared resid | 8.824444 | Schwarz criterion | -0.218238 |
| Log likelihood | 288.8557 | Hannan-Quinn criter. | -0.613300 |
| F-statistic | 14.58260 | Durbin-Watson stat | 0.947709 |
| Prob(F-statistic) | 0.000000 |  |  |

Dependent Variable: LCSR

Method: Panel EGLS (Cross-section random effects) Date: 08/04/21 Time: 07:16

Sample: 2014 2020

Periods included: 7

Cross-sections included: 54

Total panel (unbalanced) observations: 312

Swamy and Arora estimator of component variances

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 7.791845 | 0.774307 | 10.06299 | 0.0000 |
| BS | -0.125272 | 0.325478 | -0.384885 | 0.7006 |
| BND | -9.132940 | 5.817969 | -1.569782 | 0.1175 |
| BGD | -8.948305 | 8.876208 | -1.008122 | 0.3142 |
| BFX | -20.25074 | 11.44852 | -1.768852 | 0.0779 |
| BS\*FS | 0.008552 | 0.017895 | 0.477904 | 0.6331 |
| BND\*FS | 0.600602 | 0.330416 | 1.817717 | 0.0701 |
| BGD\*FS | 0.599428 | 0.517324 | 1.158709 | 0.2475 |
| BFX\*FS | 1.209279 | 0.666332 | 1.814830 | 0.0705 |

Effects Specification

S.D. Rho

Cross-section random 0.947232 0.3994

Idiosyncratic random 1.161454 0.6006

Weighted Statistics

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.309125 | Mean dependent var | 4.082504 |
| Adjusted R-squared | 0.290884 | S.D. dependent var | 1.309352 |
| S.E. of regression | 1.177452 | Sum squared resid | 420.0774 |
| F-statistic | 16.94674 | Durbin-Watson stat | 1.357820 |
| Prob(F-statistic) | 0.000000 |  |  |
|  | Unweighted Statistics | |  |
| R-squared | 0.570622 Mean dependent var | | 9.302143 |
| Sum squared resid | 659.9569 Durbin-Watson stat | | 0.864283 |

|  |  |  |  |
| --- | --- | --- | --- |
| Correlated Random Effects - Hausman Tes Equation: Untitled  Test cross-section random effects | t |  | |
| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
| Cross-section random | 14.714082 | 8 | 0.0649 |

Cross-section random effects test comparisons:

Variable Fixed Random Var(Diff.) Prob.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BS | 0.226094 | -0.125272 | 0.055101 | 0.1344 |
| BND | 10.029093 | -9.132940 | 35.210290 | 0.0012 |
| BGD | -15.806596 | -8.948305 | 87.935253 | 0.4646 |
| BFX | -37.990860 | -20.250737 | 232.028021 | 0.2442 |
| BS\*FS | -0.010805 | 0.008552 | 0.000161 | 0.1277 |
| BND\*FS | -0.476286 | 0.600602 | 0.110465 | 0.0012 |
| BGD\*FS | 1.000293 | 0.599428 | 0.274213 | 0.4440 |
| BFX\*FS | 2.262757 | 1.209279 | 0.782318 | 0.2336 |

Cross-section random effects test equation: Dependent Variable: LCSR

Method: Panel Least Squares Date: 08/04/21 Time: 07:17 Sample: 2014 2020

Periods included: 7

Cross-sections included: 54

Total panel (unbalanced) observations: 312

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 7.243662 | 1.028459 | 7.043216 | 0.0000 |
| BS | 0.226094 | 0.401294 | 0.563412 | 0.5737 |
| BND | 10.02909 | 8.310178 | 1.206845 | 0.2286 |
| BGD | -15.80660 | 12.91210 | -1.224169 | 0.2220 |
| BFX | -37.99086 | 19.05509 | -1.993738 | 0.0473 |
| BS\*FS | -0.010805 | 0.021947 | -0.492333 | 0.6229 |
| BND\*FS | -0.476286 | 0.468657 | -1.016280 | 0.3105 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BGD\*FS | 1.000293 | 0.736096 | 1.358917 | 0.1754 |
| BFX\*FS | 2.262757 | 1.107392 | 2.043321 | 0.0421 |

Effects Specification

Cross-section fixed (dummy variables)

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.780584 | Mean dependent var | 9.302143 |
| Adjusted R-squared | 0.727047 | S.D. dependent var | 2.223094 |
| S.E. of regression | 1.161454 | Akaike info criterion | 3.313116 |
| Sum squared resid | 337.2439 | Schwarz criterion | 4.056918 |
| Log likelihood | -454.8461 | Hannan-Quinn criter. | 3.610391 |
| F-statistic | 14.58014 | Durbin-Watson stat | 1.606740 |
| Prob(F-statistic) | 0.000000 |  |  |

Dependent Variable: LCSR Method: Panel Least Squares Date: 08/04/21 Time: 07:17 Sample: 2014 2020

Periods included: 7

Cross-sections included: 54

Total panel (unbalanced) observations: 312

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | 7.433062 | 1.016641 | 7.311396 | 0.0000 |
| BS | 0.386889 | 0.399727 | 0.967883 | 0.3341 |
| BND | 14.65321 | 8.239034 | 1.778511 | 0.0766 |
| BGD | -17.80796 | 12.71703 | -1.400324 | 0.1627 |
| BFX | -37.41877 | 19.06268 | -1.962933 | 0.0508 |
| BS\*FS | -0.018786 | 0.021780 | -0.862558 | 0.3892 |
| BND\*FS | -0.769363 | 0.466224 | -1.650201 | 0.1002 |
| BGD\*FS | 1.046908 | 0.722899 | 1.448208 | 0.1488 |
| BFX\*FS | 2.240093 | 1.107118 | 2.023355 | 0.0441 |

Effects Specification

Cross-section fixed (dummy variables) Period fixed (dummy variables)

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.795757 | Mean dependent var | 9.302143 |
| Adjusted R-squared | 0.739674 | S.D. dependent var | 2.223094 |
| S.E. of regression | 1.134271 | Akaike info criterion | 3.279920 |
| Sum squared resid | 313.9232 | Schwarz criterion | 4.095702 |
| Log likelihood | -443.6675 | Hannan-Quinn criter. | 3.605963 |
| F-statistic | 14.18888 | Durbin-Watson stat | 1.554443 |
| Prob(F-statistic) | 0.000000 |  |  |

Dependent Variable: LCSR

Method: Panel EGLS (Cross-section random effects) Date: 08/04/21 Time: 07:20

Sample: 2014 2020

Periods included: 7

Cross-sections included: 54

Total panel (unbalanced) observations: 312

Swamy and Arora estimator of component variances

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | -2.134089 | 6.839500 | -0.312024 | 0.7552 |
| BS | 0.051643 | 0.358618 | 0.144005 | 0.8856 |
| BND | 0.494732 | 8.411795 | 0.058814 | 0.9531 |
| BGD | -6.842405 | 8.897745 | -0.769004 | 0.4425 |
| BFX | -16.10573 | 12.38448 | -1.300477 | 0.1944 |
| FA | 0.010334 | 0.007315 | 1.412656 | 0.1588 |
| FS | 0.558339 | 0.403066 | 1.385229 | 0.1670 |
| BS\*FS | -0.002304 | 0.019987 | -0.115275 | 0.9083 |
| BND\*FS | 0.057819 | 0.480208 | 0.120404 | 0.9042 |
| BGD\*FS | 0.468179 | 0.518769 | 0.902480 | 0.3675 |
| BFX\*FS | 0.938191 | 0.725186 | 1.293724 | 0.1968 |

Effects Specification

S.D. Rho

Cross-section random 0.956581 0.4106

Idiosyncratic random 1.146170 0.5894

Weighted Statistics

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.313320 | Mean dependent var | 4.007586 |
| Adjusted R-squared | 0.290507 | S.D. dependent var | 1.301666 |
| S.E. of regression | 1.169243 | Sum squared resid | 411.5056 |
| F-statistic | 13.73410 | Durbin-Watson stat | 1.353407 |
| Prob(F-statistic) | 0.000000 |  |  |
|  | Unweighted Statistics | |  |
| R-squared | 0.568173 Mean dependent var | | 9.302143 |
| Sum squared resid | 663.7205 Durbin-Watson stat | | 0.839110 |

|  |  |  |  |
| --- | --- | --- | --- |
| Correlated Random Effects - Hausman Tes Equation: Untitled  Test cross-section random effects | t |  | |
| Test Summary | Chi-Sq. Statistic | Chi-Sq. d.f. | Prob. |
| Cross-section random | 21.292773 | 10 | 0.0191 |

Cross-section random effects test comparisons:

Variable Fixed Random Var(Diff.) Prob.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| BS | 0.783052 | 0.051643 | 0.104861 | 0.0239 |
| BND | 21.409171 | 0.494732 | 40.267570 | 0.0010 |
| BGD | -18.438171 | -6.842405 | 84.157234 | 0.2062 |
| BFX | -23.754561 | -16.105730 | 254.659448 | 0.6317 |
| FA | 0.103355 | 0.010334 | 0.001640 | 0.0216 |
| FS | 0.848221 | 0.558339 | 0.207245 | 0.5243 |
| BS\*FS | -0.041741 | -0.002304 | 0.000323 | 0.0282 |
| BND\*FS | -1.131291 | 0.057819 | 0.124238 | 0.0007 |
| BGD\*FS | 1.075126 | 0.468179 | 0.259435 | 0.2334 |
| BFX\*FS | 1.396691 | 0.938191 | 0.869704 | 0.6230 |

Cross-section random effects test equation: Dependent Variable: LCSR

Method: Panel Least Squares Date: 08/04/21 Time: 07:20 Sample: 2014 2020

Periods included: 7

Cross-sections included: 54

Total panel (unbalanced) observations: 312

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | -11.61356 | 10.49800 | -1.106264 | 0.2697 |
| BS | 0.783052 | 0.483185 | 1.620605 | 0.1064 |
| BND | 21.40917 | 10.53688 | 2.031832 | 0.0432 |
| BGD | -18.43817 | 12.77995 | -1.442742 | 0.1504 |
| BFX | -23.75456 | 20.19987 | -1.175976 | 0.2407 |
| FA | 0.103355 | 0.041155 | 2.511376 | 0.0127 |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| FS | 0.848221 | 0.608036 | 1.395017 | 0.1643 |
| BS\*FS | -0.041741 | 0.026878 | -1.552983 | 0.1217 |
| BND\*FS | -1.131291 | 0.595683 | -1.899149 | 0.0587 |
| BGD\*FS | 1.075126 | 0.727019 | 1.478815 | 0.1405 |
| BFX\*FS | 1.396691 | 1.181355 | 1.182279 | 0.2382 |

Effects Specification

Cross-section fixed (dummy variables)

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.788030 | Mean dependent var | 9.302143 |
| Adjusted R-squared | 0.734183 | S.D. dependent var | 2.223094 |
| S.E. of regression | 1.146170 | Akaike info criterion | 3.291410 |
| Sum squared resid | 325.7988 | Schwarz criterion | 4.059206 |
| Log likelihood | -449.4600 | Hannan-Quinn criter. | 3.598275 |
| F-statistic | 14.63459 | Durbin-Watson stat | 1.597631 |
| Prob(F-statistic) | 0.000000 |  |  |

Dependent Variable: LCSR Method: Panel Least Squares Date: 08/04/21 Time: 07:21 Sample: 2014 2020

Periods included: 7

Cross-sections included: 54

Total panel (unbalanced) observations: 312

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| C | -11.61356 | 10.49800 | -1.106264 | 0.2697 |
| BS | 0.783052 | 0.483185 | 1.620605 | 0.1064 |
| BND | 21.40917 | 10.53688 | 2.031832 | 0.0432 |
| BGD | -18.43817 | 12.77995 | -1.442742 | 0.1504 |
| BFX | -23.75456 | 20.19987 | -1.175976 | 0.2407 |
| FA | 0.103355 | 0.041155 | 2.511376 | 0.0127 |
| FS | 0.848221 | 0.608036 | 1.395017 | 0.1643 |
| BS\*FS | -0.041741 | 0.026878 | -1.552983 | 0.1217 |
| BND\*FS | -1.131291 | 0.595683 | -1.899149 | 0.0587 |
| BGD\*FS | 1.075126 | 0.727019 | 1.478815 | 0.1405 |
| BFX\*FS | 1.396691 | 1.181355 | 1.182279 | 0.2382 |

Effects Specification

Cross-section fixed (dummy variables)

|  |  |  |  |
| --- | --- | --- | --- |
| R-squared | 0.788030 | Mean dependent var | 9.302143 |
| Adjusted R-squared | 0.734183 | S.D. dependent var | 2.223094 |
| S.E. of regression | 1.146170 | Akaike info criterion | 3.291410 |
| Sum squared resid | 325.7988 | Schwarz criterion | 4.059206 |
| Log likelihood | -449.4600 | Hannan-Quinn criter. | 3.598275 |
| F-statistic | 14.63459 | Durbin-Watson stat | 1.597631 |
| Prob(F-statistic) | 0.000000 |  |  |