

COLLEGE OF HUMANITIES

UNIVERSITY OF GHANA



**THE EFFECT OF FINANCIAL DEVELOPMENT ON INCOME INEQUALITY IN
GHANA: AN APPLICATION OF ARDL APPROACH.**

BY

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(10552750)

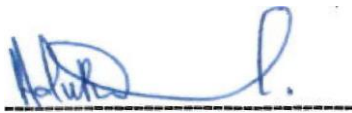
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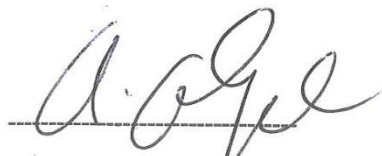
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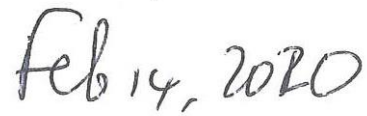
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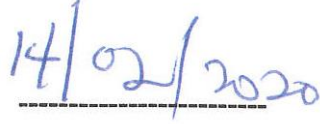
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DEDICATION

This work is dedicated to my parents and my brothers, Mr. Richard Amaning Adu and Dr. Edward Oduro Adu.

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I remain most indebted to God for seeing me through this work magnificently. I stand as well as thankful to my family for their financial sustenance and prayers throughout this whole work. I will also acknowledge my supervisors for their advice and direction during this thesis.

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LIST OF ABBREVIATIONS

OECD	Organization for Economic Co-operation and Development
GJ	Greenwood Jovanovich
MDG	Millennium Development Goal
GLSS	Ghana Living Standard Surveys
ARDL	Autoregressive Distributive Lag
AfDB	African Development Bank
GDP	Gross Domestic Product
SEC	Securities and Exchange Commission
GSE	Ghana Stock Exchange
HFC	Housing Finance Company
NPRA	National Pensions Regulatory Authority
NIC	National Insurance Commission
GSS	Ghana Statistical Service
IMF	International Monetary Fund
SSA	Sub-Saharan Africa
FD	Financial Development
CV	Control Variable
ISIC	International Standard Industrial Classification
AIC	Akaike Information Criterion
SBC	Schwarz Bayesian Criterion
UECM	Unrestricted Error Correction Method
GS	Government Spending
M	Manufacturing
TR	Trade
FINS	Financial Instability

ABSTRACT

This academic work peeps at the consequence of financial growth on income disparity in Ghana using an Autoregressive Distributive Lag method for the period 1970 to 2012. An Unrestricted Error Correction Technique was adopted to analyse the long and short-run effects of these variables. The goals of the academic work were to uncover the consequence of growing financial sector and financial unpredictability on income disparity in Ghana.

The experimental outcomes discovered that the outcome of financial expansion on the disparity of income has a regression coefficient of -0.94, but was found to be statistically inconsequential in the long-run. Additionally, the outcome of development in the financial sector on the disparity of income has a regression coefficient of 0.65 and statistically substantial at 5 percent in the short-run. The outcome also revealed that the consequence of financial instability on the disparity of income has a regression coefficient of 0.04, but was found to be inconsequential in the long-run. Also, the consequences shown that the consequence of financial instability on the disparity of income has a regression coefficient of 0.03 and was statistically substantial in the short-run.

The study, therefore, commends an enabling policy to widen the inclusion of financial access. These policies consist of procedures aimed at decreasing intermediation charges. Additionally, an independent debt audit committee must be set up by the government to analyse information released by all financiers on how much money is owed to whom, under what conditions and terms and in what manner the money released was destined to be used for.

Keywords and phrases: ARDL Approach, Financial Development, Income Inequality.

CHAPTER ONE

INTRODUCTION

1.1 Introduction of Chapter

Several concerns have been raised by policy analysts and researchers on uneven income distribution. This chapter provides a transitory outline of the theme: The consequence of financial growth on the disparity of income in Ghana. This section gives the contextual to the research, the problem statement, purpose of the inquiries, the study interrogations, merit of the work, scope and the constraint of the work and in conclusion, how the chapters are arranged.

1.2 Contextual of the Study

According to Beck, Demirguc-Kunt and Levine (2007), the expansion of the financial sector does not only support growth but then again it is an influential force in eradicating poverty. Researchers such as Bittencourt (2006), Clarke, Xu and Zou (2006) and Liang (2008) have indicated that financial growth improves the uneven distribution of income. In the past 20 years, Ghana has made countless developments in the growth of the economy and in reducing poverty. Government mediations have played an important role in this process and enhancements have been illustrious in important areas such as enrolment in primary school and access to preventative healthcare. However, Ghana is becoming an increasingly unequal country where the benefits of economic growth and poverty reduction are not equally distributed across the nation, across gender, and across economic quintiles. This development has the potential to weaken earlier progress, deteriorate social connections,

and considerably slow poverty reduction effects. Ghana's economic growth rate averaged about 7% between 2000 and 2011 and today, Ghana has one of the highest GDPs per capita (US\$1,580 per capita) in the sub-region. In 2011, Ghana not only joined the ranks of lower-middle-income countries but had one of the fastest rates of economic growth (14.4%) in the world. The growth in the economy has coincided with an almost halving of poverty between 1992 and 2006. Successive national living standards surveys piloted between 1992 and 2006 show that monetary poverty significantly reduced from 51.7% in 1992 to 28.5% in 2006. Both the depth of poverty and the number of poor all dropped considerably. The number of poor dropped from 7.9 million people in 1992 to 6.3 million people in 2006. Thus while the population grew by 6.9 million between 1992 and 2006, the number of poor dropped by 1.6 million which is a significant achievement making it very likely that the country will achieve the MDG1 target of halving poverty by 2015. Nonetheless, the evidence suggests that the gains achieved thus far have not been evenly disseminated across gender, localities, and regions.

Primarily, inequality of income has broadened significantly between the poorest and the richest quintiles. The poorest fifth of Ghana's population earned 6.9% of total national income in the early 1990s whereas the richest 20% earned 44% of total income. By 2006, this gap had broadened. The poorest group earned just 5.2% of national income while the richest accumulated almost half (48.3%) according to the Ghana Living Standards Survey. This changing pattern is intensely influenced by Ghana's failure to create economic growth amongst the poor themselves. In the 1990s, while economic growth was 2.9% on average, it was just 1% for the very poorest group in society according to the Chronic Poverty Research Centre, 2005 report. Similarly, the dissemination of the proceeds from growth by the state has often been unequal with much government spending benefiting better off

localities and regions. Furthermore, the statistics show that while rural development and urbanization have led to substantial poverty lessening in the south, similar dynamics have been largely insignificant in northern Ghana. While the number of poor dropped by 2.5 million between 1992 and 2006 in the south, the figure increased by 900,000 in the north. Poverty remains widespread in the northern regions of the country, with the poverty rate standing at 70.4 percent and 87.9 percent for Upper East and Upper West respectively in 2006. Of great concern are trends such as those witnessed in the Upper West, the poorest region in Ghana, where the depth of poverty increased considerably from 38.8% in 1999 to 48% in 2005/06 according to the Ghana Statistical Service report in 2007.

Looking at the structure of Ghana's economy and its nascent transformation, the agriculture sector upon which the economy of the country has traditionally depended, is being replaced by a rapidly expanding services sector which has now become the largest contributor to Ghana's GDP. In 2010, the services sector contributed more than half (51%) to GDP while the agricultural sector's had declined to 21.3% according to the Ghana Statistical Service report in 2013. While a part of the structural transformation agenda, this shift has resulted in widening the income and infrastructure gaps between rural and urban dwellers as industries and jobs become more concentrated in higher-skilled sectors, often located in the urban south. However, majority of the population (70%) still live in rural areas and depend on agriculture and rapid urbanization is beginning to compound the issues of weak rural resources and stretched urban capacity. Furthermore, the 2010 Population Census found that just over 86% of Ghana's workforce is employed in the informal sector, making both job security and revenue generation a substantial challenge. Considering income inequality about gender, analysis shows that women are more likely to be poor compared to their male counterparts, particularly in the northern regions of the country as well as in rural areas. The

estimated average hourly wage of women in Ghana is 57% that of men (Baah-Boateng, 2009). For people living with disabilities, the 2010 Population Census reveals that while the proportion of economically active persons is 72%, the corresponding proportion for those who are disabled is 57%, implying that they are in a more vulnerable position and therefore less able to withstand shocks and manage risks. Inequality creates obstacles to overcoming poverty and exclusion, and to building prosperous, cohesive societies.

Ghana's financial sector after post-independence was characterized by extensive government intervention. According to Brownbridge and Gockel (1996), financial sector policies were characterized by severe financial repression, real interest rates were steeply negative, and most of the credit was directed to the public sector. During the Acheampong regime (1972 to 1978), for example, all the commercial banks had a substantial state shareholding, and the large part of their loan books was subjected to state-owned enterprises. This heavy state control implied that many banks became the instruments for channeling funds to highly inefficient and corrupt state-owned enterprises. Also, loans were granted to military officers without any prior assessments of their competency to repay the loans. Under that regime, banks had no other choice than to comply (Leith & Söderling, 2000). According to Leith and Söderling (2000), about 92 percent of the banks' credit that was outstanding was to the public sector, which was granted on political grounds and not on any business criteria. The government set up its commercial and development banks to provide access to credit for indigenous businesses and farmers, who had been denied access to credit by the foreign commercial banks. To this effect, the Ghana Commercial Bank (GCB) was established in 1953 to improve the credit of lending facilities. The GCB was also instructed to extend the branch network to rural areas so that the people who are heavily indulged in both subsistence and commercial agriculture will have access to banking facilities. The GCB

grew to become the largest bank in Ghana, with 36 percent of the total deposits in the late 1980s (Brownbridge & Gockel, 1996). The government also acquired 40 percent of the equity stakes of the two foreign-owned banks, Barclays Bank and Standard Chartered Bank (SCB), which were established during the colonial era. This was the result of the indigenization decree that was enacted in 1975. The National Investment Bank (NIB) was set up in 1963 to provide long-term finance for industries. In 1965, the Agricultural Development Bank (ADB) was also set up to provide credit facilities to farmers and stimulate agricultural projects. In 1972, the Merchant Bank Ghana (MBG) was established as a joint venture between ANZ Grindlays, the government, and public sector financial institutions, with the first having a 30-percent stake. To provide loans for housing, industrial construction, and companies producing building materials, the Bank for Housing and Construction (BHC) was also established in 1974. The Social Security Bank (SSB) was founded in 1977 and grew rapidly to become the second-largest bank in Ghana, with 18 percent of deposits in the late 1980s.

The objective behind this establishment was to provide credit to include longer-term loans for businesses and consumers. It also invested in the equity of several large businesses. The National Savings and Credit Banks (NSCB), formerly the Post Office Savings Bank and the Cooperative Bank, were also established in 1975 to provide consumer loans, and credit for small industries and cooperatives (Adjetei, 1978; Brownbridge & Gockel, 1996). The financial sector transformations in Ghana were established in the 1980s as part of the continuous Economic Recovery Program (ERP). Interest rates liberalization and the removal of the sectoral credit ceiling was part of the program (Brownbridge & Gockel, 1996). In 1989, the Financial Sector Adjustment Program (FINSAP), which was supported by the World Bank, was set up to address the institutional deficiencies of the financial

system by restructuring the distressed banks, reforming prudential legislation and the supervisory system, permitting new entry into financial markets by public and private sector financial institutions, and developing money and capital markets. Again, the FINSAP took place in 1994 to privatize the public sector banks and development of non-bank financial institutions to fill the gaps in the financial market not served by the banks.

The three components of the FINSAP, which most directly affect the banks, were bank restructuring, reforms of the prudential system, and the liberalization of financial markets. The 1989 restructuring of the public sector banks involved balance sheet restructuring and reforms to their management and operating procedures. The balance sheet restructuring was necessary due to the banks' insolvency. Further, the magnitude of the banks' nonperforming assets (NPAs) was too large for the banks to be able to restore adequate levels of capitalization from future profits. In light of this, recapitalization from public funds became necessary. In 1989, the NPAs that amounted to 62 billion cedis equivalent to \$170 million or 4.4 percent of the GDP was removed from the banks' balance sheets and replaced with Bank of Ghana bonds. In 1991, the government's specialized agency, the Non-Performing Assets Recovery Trust (NPART), was set up to take over the NPAs. By the end of 1994, the Non-Performing Assets Recovery Trust had received 50.4 billion cedis of Non-Performing Assets and recovered 14.1 billion cedis (World Bank, 1994). The replacement of Non-Performing Assets enables most of the banks to meet the minimum capital adequacy requirement of 6 percent adjusted assets, which was prescribed in the 1989 Banking Law. To prevent the banks from incurring losses and to reduce operating costs, it became necessary to reform their management and operating procedures. The restructuring involved the overhaul of credit policies and strengthening of credit appraisal, loan monitoring, and loan recovery systems, areas that had been particularly weak before the reforms (World Bank, 1994).

Internal controls, inspections, and audits were improved and budgetary and performance appraisal systems were introduced. Staff training programs were enhanced. To cut off costs, staffing levels were reduced by 38 percent between 1988 and 1992; some bank branches were also closed. In 1995, the government sold part of its equity stake in the Social Security Bank (SSB) to the public. The government in 1996 also sold 30 percent of its shares in Ghana Commercial Bank (GCB) to the public (Brownbridge & Gockel, 1996; Ziorklui, 2001). These measures were to safeguard banks from political interference. In this sphere, privatization became the key. Furthermore, the reforms to the prudential system which entailed the revisions to the banking legislation enacted in the Banking Act of 1989 enticed the banks to introduce standard reporting and accounting procedures. The 1989 Banking Law imposed minimum paid-up capital requirements for Ghanaian and foreign owned commercial banks of 200 million cedis and 5 billion cedis, respectively, and 1 billion cedis for development banks that provide medium and long-term finance for trade and industry. Since the 1990s, there has been an upward revision of the capital requirements due to the high rates of inflation (Brownbridge & Gockel, 1996; World Bank, 1994). The banking laws have also introduced a standardized accounting system for the banks. This includes explicit criteria for the classification of loans provisioning for nonperforming assets and the nonaccrual of unpaid income (Aryeetey, 1996; Leith & Söderling, 2000; Ziorklui, 2001).

Ghana's financial system has been liberalized to enhance the efficiency of resource allocation and strengthening competition. Scholars such as Ranciere, Tornell and Westermann (2006) develop an integrated framework to empirically quantify and contrast the dual effects of financial liberalization. They show that financial liberalization tends to relax borrowing limitations, leading to higher investment and higher average growth. They added that financial liberalization encourages risk-taking, generates financial fragility, and

increases the probability of financial crises, which often have recessionary consequences. Accordingly, liberalization has entailed the removal of some of the allocative controls and the easing of entry restrictions into banking and has undoubtedly had significant effects on banking markets. The financial liberalization which has been taking place since 1987 involves the removal of interest rate control, the sectoral composition of bank lending, and the introduction of market-based instruments of money control. Several merchant banks with private sector participation have been licensed and some of the government-owned banks have been partially privatized (Leith & Söderling, 2000). The maximum lending rates and the minimum time deposit rates were removed in 1987, due to interest rate liberalization. In 1990, the minimum savings deposit rates were also eliminated. In 1992, the bank-specific credit ceilings that had been the main instrument of monetary control, which was employed during the ERP, were also removed. This was replaced with an indirect market-based system of monetary control that involved the weekly auction of Treasury Bills and other government and BOG securities which were backed up with statutory cash reserves and liquid asset requirements (Alexander, Thomas, Baling & Epoch, 1995). Hence, by the early 1990s, banks were free to price deposits and to allocate loans according to market criteria. However, the major constraint on the volume of credit that banks were able to extend was the high reserve ratio that was imposed by the Bank of Ghana. Liberalization of controls over interest rates and credit can improve the efficiency of credit allocation. This can enable banks to direct credit toward those borrowers capable of generating the highest rate of return.

The financial sector of Ghana is subjugated by the banking industry. Banks play a critical role in every economy. The banking system, through its intermediation process, reallocates scarce resources from those members of society in surplus (depositors) to those in deficit

(borrowers). Typically, banks perform this intermediation role by transforming small liquid deposits into larger illiquid loans. Despite the ample transformations that have taken place in the financial system, the banking systems are grossly inefficient, illiquid, and febrile (Aryeetey & Senbet, 2004). There are on-going efforts at promoting financial integration in West Africa, and this effort includes strengthening financial sector regulation and supervision. There is a growing recognition of the importance of financial inclusion for economic and social development. This stems from a common understanding that access to financial services has a critical role in reducing poverty, boosting shared prosperity, and supporting inclusive and sustainable development. Substantial evidence abound that indicate that the poor benefit immensely from access to basic financial services such as payments, savings, and insurance services.

1.3 Problem Statement

Ghana our motherland is free forever as it was declared by the first president of the republic, but the country is not free when most of its citizenry still wallow in abject poverty. Todaro and Smith (2009) pointed out that uneven distribution of income amongst the disadvantaged is a precarious characteristic in acknowledging the harshness of poverty and the consequence of changes in market models and policies on the deprived. Why then must we be bothered? To start, uneven income distribution can create economic ineptitude. The reason being that at any slightly average income given, the greater the disparity, the lesser the number of people that qualify for credit. When persons who earn, little income are not able to borrow, this will ultimately result in their disappointment to send their progenies to school or start their own business. According to a current study carried out by Cooke, Hague and McKay (2016) and published in the Ghana Poverty and Inequality Report points out that regardless of Ghana's stability, superior control and institutional competence that

uphold the ongoing realization of civil liberties and also amid revenues from offshore oil reserves, generating double-digit growth for the year, inequality of income has worsened, with the index rising from 0.37 in 1992 to 0.423 in 2013 according to Ghana statistical service information. The assurance of work that oil exploitation seems to offer normally entices many travellers to an exploitation area. The swift arrival of persons and the high comparative earnings of employees in the oil industry blow-up the domestic bills of important services and products, bringing about a substantial upsurge in the standard of living, even for persons who do not profit from the benefits of an oil project. While oil discoveries generate massive changes, these changes do not last. Employment levels tend to drop melodramatically once substructure construction is done. The resulting service, income, and food unpredictability stress the indigenous economy. After the construction stage is done, the probable outcome of an oiled bang is augmented prostitution, leading to diseases and criminality. The actual inhabitants who might not enjoy the revenue of oil benefits progressively smash with “newcomers,” because these people see their way of living massively sporadic.

In Ghana, approximately 300,000 more men, women, and children could have been lifted out of poverty between 2006 and 2013 had income inequality not increased during this period. Current developments suggest that the rich are taking a greater share of the benefits of growth in Ghana. Oxfam, a Non-Governmental Organization in Ghana estimates that just one of the richest men in Ghana earns from his wealth more in a month than one of the poorest women could earn in 1,000 years. Across Sub-Saharan Africa, there is increasing concern that economic growth has not been leading to developments in labour-market outcomes for all. Ghana is ranked 104 out of 152 countries on work and wages in Oxfam’s Commitment to Reducing Inequality Index. Employment development in Ghana has been

slower than economic growth in recent years and the jobs that have been created are most vulnerable and in the informal sector. Inadequate job establishments, together with an inadequate policy framework, are contributing to deepening income disparities among the Ghanaian population. Workers are not getting a fair share of prosperity in Ghana for a few key reasons. First, the labour market is dominated by low-earning self-employment in the informal sector. The most recent data suggest that 90% of the currently employed population are in the informal sector, 45.1% of whom are men and 54.9% are women. With such a high proportion working in the informal sector, it is a little surprising that seven out of ten jobs are estimated to be ‘vulnerable’, and only one in five jobs could be considered to meet the standard of ‘decent work’. Furthermore, while the percentage of unemployment is low, youth unemployment is high. A recent report by the World Bank suggests that as many as 48% of young people aged 24 to 35 years in Ghana are jobless. Third, the increase of wages in the formal sector has not kept pace with the cost of living, pushing many poor households further into poverty. The Living Wage Alliance estimated that a real living wage in Ghana would need to be four times the current minimum wage. Consequently, at least one in every five working Ghanaians is poor. Nevertheless, not everyone has seen their incomes stagnate. The income gap between political elites and higher-income groups on one hand, and the rest of the population on the other, keeps widening. For example, the basic salary and allowances of a minister of state are about 103 times the monthly minimum wage set by the government in 2017. Finally, the agriculture sector is not realizing its potential for job creation and inequality reduction. The agriculture sector remains a key pillar of Ghana’s economy. However, a lack of market understanding among farmers, poor infrastructure, and weak value chain management, insufficient farming inputs and extension services have contributed to the sector’s decline in performance. The unpredictability in outlay and the real rate of exchange equally make progress more unstable. Furthermore, despite poverty is

usually centred in the rural areas, governments time and again do not pass through to growers rise in the global prices of agricultural products such as cocoa, coffee, and sheanut, but because of budgetary limitations, the fall in world prices are passed on to producer prices and because the vulnerable do not have access to indemnification, a fall in real income may reduce their investment in health care and education, with a negative impact on their human capital.

Another cause of the sector's underperformance has been the low level of public expenditure. By 2014, the Government of Ghana's agriculture spending was as low as 1.3% of the total budget that is far below the rates of regional comparators, and well under the 10% level, Ghana committed to, in the African Union's Maputo Declaration of 2003. Mishandling of public funds and corruption is prevalent. Inefficient management of public resources through wastage and corrupt practices drive inequality by limiting investments in the critical resources needed to bridge the income gap between the rich and the poor and raising barriers to lower socio-economic groups accessing opportunities. An IMANI report highlighted that GHS 5.9 billion (\$1.5 billion) had officially reported missing or misused between 18 ministries, departments and agencies, 19 Public Boards and institutions, 10 Polytechnics and Pre-University Educational institutions in 10 regions of Ghana between 2012 and 2014. The disparities in income, consumption and wealth described in this report have not come about by accident. They are driven by fiscal and socio-economic policies pursued over the years that structurally disadvantage low-income populations and deprived socio-economic groups. Existing policies are not doing enough to tackle economic inequality. They have, in fact, often reinforced it.

The wealthiest 10% of Ghanaians now account for 32% of Ghana's total consumption, more than what is consumed by the bottom 60% of the population combined; the very poorest

10% of the population consumes only 2%. Progress towards poverty reduction in Ghana is regionalized in character, leading to rising levels of inequality across and within regions. This has led to increasing division along distinct geographical and spatial lines, with clear north/south and urban/rural splits. Rural poverty levels are now almost four times as high as urban poverty levels, as urban poverty has fallen faster than rural poverty. A 2017 IMF paper found that inequality harms growth when it increases above a Gini of 27. Studies show that closing the gap concerning the rich and the deprived produces a significant positive impact on the economy. A 2014 OECD study indicates that reducing inequality by 1 Gini point would translate to an increase in a country's cumulative growth of 0.8 percentage points in the following five years. Furthermore, the IMF has calculated that if countries in Sub-Saharan Africa reduced their disparity levels to those seen in the Association of Southeast Asian Nations; it would add almost 1% to GDP growth, which is equivalent to the impact of closing the infrastructure gap between the two regions.

Reducing disparity is not only beneficial for dropping poverty but can also help achieve more inclusive growth in Ghana. Ghana, having had significant amounts of debt cancelled over a decade ago; it is now back in a debt crisis. In 2017 servicing public debt cost Ghana more than the annual amount the government would need to pay for free quality healthcare for all Ghanaians and to deliver on its globally agreed health goals by 2030. Meeting these goals could have saved the lives of more than 7,000 new-born babies and 1,000 mothers in one year alone. The IMF's response to Ghana's worsening debt situation has been to call for more fiscal consolidation, in other words, more government spending cuts. These raise serious concerns about the likely impact on poverty and disparity. Mishandling of public funds and corruption are rife inefficient management of public resources through wastage and corrupt practices drive disparity in Ghana by limiting investments in the critical

resources needed to bridge the income gap between the rich and the poor, and further raise barriers to access to opportunities that can improve the livelihoods of lower socio-economic groups. Over the past decade, evidence has highlighted worrying mismanagement of public funds and resources. This allows a minority of people to benefit from national growth at the expense of the majority. Analysis of Auditor-General reports over the past decade suggests that financial irregularities and unaccounted public funds increased from 0.43% of GDP to 1.48% in 2013, rising to 5.4% in 2014 before dropping again to 1.45% of GDP in 2015. Health spending is 1.9% of GDP, meaning that eliminating this waste and corruption could potentially almost double spending on health. Secondly, corruption raises barriers to accessing essential services by low-income groups. Respondents who were part of research by the Ghana Integrity Initiative and others reported cases where poor children were unable to gain admission to senior high school because wealthier families were willing to pay bribes to secure their children's places. As many as 72% of respondents were able to recount at least one incident where bribes had been demanded by service providers in the education sector.

The financial sector reforms have provided the necessary platform for the banking sector to operate based on operational flexibility and functional autonomy, thereby enhancing efficiency, productivity, and profitability. Since the restructuring exercise began, the performance of the public sector banks has been reasonably healthy. The bank rates of return to capital between 1991 and 1995 exceeded inflation. This has allowed the banks to build enough capital and reserve. To this effect, it has enabled the banks to meet the minimum capital adequacy ratios that were imposed by the 1989 Banking Law. The banks have also been generally liquid. However, they are still afflicted by significant levels of NPAs, albeit not at the levels that prevailed before the restructuring, although the loans in the banks' asset

portfolios have been low. The banks have also done little lending since the restructuring exercise began. Most of the banks' assets have been held as liquid assets, primarily in government and Bank of Ghana securities, which, since the introduction of the Treasury Bills' auction, have provided a remunerative and safe source of income.

Financial liberalization has not yet had a major impact on innovation in banking markets or the quality of services offered to the public. There has been very little innovation in terms of the range of instruments and services provided. Only very basic savings and lending instruments are available from the banks. Interest-bearing checking accounts are generally only available to customers with very large deposits (World Bank, 1994). The failure of financial liberalization to stimulate greater improvements in the range and quality of retail banking services requires some clarification. It may be attributable to the lack of competitive pressure on the banks which have been able to generate profits during the 1990s, mainly from investing in securities, without having to compete strongly for either deposits or borrowers. It is also possible that the very low usage of the banking system by the public makes the introduction of innovative retail services uneconomical. In turn, the public is deterred from using the banks, partly because services are poor, but also because holding bank deposits is unattractive given the high rates of inflation. It is likely that a combination of sustained low inflation and greater competition will be needed if retail services are to improve. The ongoing revolution in information and communication technology has improved. However, given the low initial level of automation, it has largely bypassed Ghana's banking system (Bank of Ghana, 2004).

The bulk of Ghana's economic problems can be ascribed to rising fiscal and current account deficits. Ghana's financial sector remains rudimentary. Low market liquidity is a major issue in banking and is the direct result of low capitalization. Apart from the banks established in

2014, which have a capital requirement of \$40 million, Ghana's banks must hold \$20million in the capital. The impact on the economy of such low capital requirements is the fundamental inability of the banking sector to financially support other sectors. Agriculture remains largely subsistent and is hindered by inefficient market arrangements. Cocoa remains the only commodity that receives considerable support. The housing sector is equally inefficient as it is expanding too slowly to deal with current rates of urbanization. The impact of this is a rapid decline in hygiene and health standards that threaten to increase mortality in Ghana's urban areas. The housing ladder does not exist in Ghana, as middle-income housing has effectively been driven out of the market. State-owned hospitals have been strained beyond capacity, hindering the state's ability to deliver sound healthcare. The health sector is one of many handicapped by an unstable power supply. Ghana faces a resource trap and is unable to deliver quality services. Not only is the public sector unable to meet the needs and expectations of citizens, but it is also decoupled from the financial sector. Subsequently, the banking sector remains too financially constrained to support sectors that require significant private investment and effective management. The potential causes of Ghana's sectoral disconnect are serious structural gaps that are exacerbated by high levels of uncertainty and a lack of institutional credibility.

Ghana is vulnerable to both cyclical shocks and structural challenges. A more healthy financial system is required to provide adequate buffers against these cyclical shocks, but structural challenges can only be tackled by the government and society working together. Well-functioning financial systems serve a vital purpose by offering savings, payment, credit, and risk management services to individuals and firms. The Government of Ghana recognizes shared economic growth is the surest way to sustained reduction in poverty in the country and that to attain shared economic growth, there is the need to ensure the

availability of medium to long-term financing, deepen the resource mobilization of the banking system, ensure that banks want to and can safely lend these resources, and enable productive formal sector firms to find the mix of equity and debt finance they need to grow, as well as tools for risk management. “If the provision of mainstream financial services in Ghana is to improve as to quantity and quality, more competition and a greater presence of strong profitable and efficient financial institutions are needed” according to the Ministry of Finance and Economic Planning, 2012 report.

Financial growth requires an enabling environment for it to thrive. The probability that a country will suffer a banking crisis depends on global factors, contagion factors, and domestic factors (Forbes & Warnock, 2012; IMF, 2013). The global financial crisis of 2008-2009 and the subsequent U.S. Federal Reserve’s “tapering announcement” in May 2013, which contributed to capital outflows from some Sub-Saharan African frontier markets and exchange rate depreciation, are clear testaments of how imbalances and instabilities in the macro economy create instabilities in financial markets and real sector growth slippages. It is, therefore, of utmost importance to keep a watchful eye on risks to stability in the macroeconomic and financial environments before these can metamorphose into a real crisis. Overall, macroeconomic expansions in Ghana in 2014 have not been impressive. The Ghanaian economy faces significant macroeconomic challenges in 2014 due, in part, to high and extraordinary fiscal and current account deficits during 2012 to 2013. This negative outcome reflects weak fundamentals and poor macroeconomic management. In the few years preceding the 2012 general elections, aggregate fiscal discipline became loose, in part, due to the national elections, as government spending had been growing at unsustainable levels. The government undertook excessive fiscal expansions partly financed by foreign borrowing, thereby increasing Ghana’s vulnerability to sudden capital flow reversals. Not

surprisingly, the year 2013 recorded high deficits in both the fiscal and current accounts in the context of weak foreign reserves. The year 2014 has been extraordinarily difficult for Ghanaians as the Government had to contend with both domestic imbalances, especially in the fiscal area and severe terms of trade and exchange rate shocks. The growing economic imbalances resulted in heightened financial fragility and uncertain expectations, which led to a rapid outflow of capital and increased the probability of a severe crisis as a result of a falling exchange rate and rising interest.

The pace of financial sector growth has been strong and the sector continues to attract a lot of foreign direct investment, especially from other regional banks. The Central bank has therefore continued to fine-tune its regulatory regime to stem cross-border risks to the financial sector while providing room for the financial sector to thrive and play its expected role in enhancing economic growth and development. As a result, there is little evidence of a trade-off between regulation on the one hand and economic growth and development on the other. Looking back, the entry of foreign banks and investors into the financial services industry in Ghana has increased competition in the banking industry as well as the introduction of strong business practices, technology, products, and risk management systems, and has given impetus to dynamic efficiency in the industry. However, the fact that foreign banks account for nearly 60 percent of total assets of the banking industry (about 25 percent by Nigerian banks) is worrisome, as it poses cross-border risks to the banking system. This notwithstanding, domestic banks have also held their own, and grown particularly fast, as they accounted for 39.3 percent of assets as at the end of 2013 compared with only 12 percent in 2005.

The main constraint to an increase in the efficiency of credit allocation by the banks has been macroeconomic instability, as in several other African countries undertaking financial

sector reforms. Bank lending has also been constrained by the high ratios imposed by the Bank of Ghana, in an attempt to restrain monetary growth. Bank lending to the private sector has remained at very low levels since the financial sector reforms began. In 1994, bank lending was only 5.3 percent of the GDP (Brownbridge & Gockel, 1996). It is said that the intermediation process of banks is efficient when the demands of both depositors and borrowers can be satisfied at low cost while mobilizing funds for investment that offers the potential to deliver enhanced economic growth (Schinasi, 2006). Griffith-Jones and Karwowski (2013) have taken the view that financial sectors in Africa can support growth on the continent by mobilizing sufficient savings, intermediating savings at low cost and long maturity to investors and consumers and helping companies and individuals manage risks. The efficiency and effectiveness with which the financial sector in Ghana has played these roles in the country has been limited but improving. Effective banking systems expand financing opportunities for both large and micro-enterprises, while also supporting financial sector development. The developments in Ghana's financial sector can be gleaned from the level of financial intermediation and financial deepening. The ratio of private sector credit to GDP and the ratio of broad money to GDP depict financial depth. Credit provided to the private sector, concerning the GDP, has considerably increased over time but it is insignificant when compared with other comparator countries. The rapid expansion of banking activities has resulted in more than 100 percent growth in the banking sector's assets over the past two decades. One common characteristic of the banking system in Africa is that a large number of banks invest in government securities, primarily treasury bills. This is symptomatic of highly dysfunctional banking intermediation and it is responsible for the low level of private credit provision that we observe in many African countries (Allen, Otchere & Senbet, 2011).

The challenge encountered by many African countries is income disparity among households. Research indicates that the growing influence of the rich over the poor has a fundamental effect on crisis. This means that when the economic bargaining power of the rich is strengthened, it encourages outcomes favourable to themselves at the expense of the poor. This, as a result, can lead to political instability such as coup in a situation where the poor feels oppressed. According to Osei-Assibey (2014), the disparity of income has worsened in the country. A study of the last three rounds of the Standard of Living Study of Ghana for 1991/1992, 1998/1999 and 2005/2006 show that the coefficient of the Gini has seen an increment over the period. It is recorded that between 1992 and 2006, the index which takes figures between 0 and 1, in which 0 implies that every person has equal income and 1 indicates that only one person has the whole income and zero for anyone else, augmented from 0.37 to 0.42. Additionally, a broad experimental research undertaken by Coulombe and Wodon (2007), highlighted that the estimation coefficient of penury was abridged by 23.2 percentage points, from 1991 to 2006. However, if the disparity of income had remained stable, the lessening in penury would have been 27.5 points, so that Ghana would have realized the MDG goal of reducing poverty by half years earlier. This objective was unable to be successful since the rise in disparity lowered poverty reduction by 4.3 percent.

Many researchers have tried to examine the whys and wherefores of rising disparity of income from several viewpoints. However, sufficient consideration has not been given to scrutinize the consequence of financial sector expansion on the disparity of income hypothetically and experimentally (Zhang & Chen, 2015). In spite of several efforts to experimentally scrutinise the association amid financial expansion and growing economy, very little works have talked on the underlying connexion between financial expansion and

income disparity as an alternative and also financial expansion and disparity lessening on the other side of the page (Sehrawat & Giri, 2015). Additionally, there are research works that have considered the connexion between financial sector expansion and income disparity from cross-country to single countries study but these studies did not look at African countries (Tita & Aziakpono, 2016).

Experimental evidence from Africa is almost missing, with a working paper and two peer-reviewed papers which are the most recognized accessible works (Asongu, 2013; Batuo, Guidi & Mlambo, 2010; Kai & Hamori, 2009). An individual can in general cluster these works into two groups on the bases of the method of econometrics adopted. A panel data method in a cross-country analysis was adopted by the first group of researchers (Beck et al., 2004; Clarke et al., 2003, 2006; Kappel, 2010; Li, Squire & Zou, 1998; Rehman, Khan & Ahmed, 2008). The second group of study adopted country-specific time series techniques (Law & Tan, 2009). The study fills this gap by restricting the study to Ghana as the first of its kind. Furthermore, the researcher is unaware of any study that has used linear interpolation as a result of data unavailability to fill missing data points. Additionally, no paper has used a logarithm derivative to ascertain whether a U-shaped inverted hypothesis exists between financial development and unequal dissemination of income. The researcher's motivation behind this topic is that majority of the population (70%) still live in rural areas where poverty is widely spread and depend on agriculture which has been replaced by a rapidly expanding service sector that has become the largest contributor to Ghana's Gross Domestic Product. Furthermore, the 2010 population Census found that just over 86% of Ghana's workforce is employed in the informal sector, making both job security and revenue generation a substantial challenge for the government to invest efficiently. Additionally, with the rising trend in income inequality which comes with its

adverse effect on the economy and restructuring in the financial sector that the country has had to achieve a sound and robust financial system in Ghana, it calls for a look into how financial sector development can help eradicate income disparity in Ghana.

1.4 Objectives of the Study

To accomplish these goals, the subsequent objectives have been sketched out.

1. To find out the influence of financial sector growth on the disparity of income in Ghana.
2. To assess the consequence of financial instability on the unequal dissemination of income in Ghana.

1.5 Research Questions.

The objectives will be attained by providing answers to the succeeding research inquiries.

1. Financial development and income disparity: Is there a connexion?
2. Financial instability and unequal income distribution: What do the facts tell us?

1.6 Importance of the Study

The correlation between financial development and uneven dissemination of income has received a lot of interest from development practitioners, finance experts as well as policymakers in recent times. The research will help policy analysts to formulate policies that will be important in addressing the issues of inequality in the country. This study will offer fresh insight that will guide policymakers on crafting policies that will reduce uneven income distribution. The results will also be advantageous in future research in assessing

the connexion amid financial development and uneven dissemination of income. The study will help regulators and policy analysts to efficiently and effectively allocate resources to needed areas of the economy. Finally, it will serve as a foundation for further study into other Sub-Saharan Africa countries where income inequality is growing rapidly.

1.7 Scope and Constraint of the work

An experimental study has been conceded on the consequence of financial expansion on income disparity across regions and on country-specific. However, this study is performed on a country basis. This work is, however, limited to the Ghanaian economy. Annual statistics for the period under consideration is obtained from the World Bank, World Development Indicator Database (2016). Two limitations call for clarification in the following specific areas. These constraints may influence the researcher's capability to take a wider view of the results of this study. One constraint is the over-dependence on information from the World Bank, World Development Indicator catalogue. This suggests that the legitimacy of the outcomes is limited to the validity of facts from the World Bank and secondly, the research is limited to Ghana.

Since Ghana has exceptional laws and regulations which have repercussions on policies of the economy and finance, it assumes that the outcome cannot be replicated elsewhere. In this research, a domestic loan issued to the private segment as a fraction of GDP will be adopted as an estimate of financial expansion. This measurement is appropriate because it forms the basis of a robust system of finance in Ghana and an important component in moving towards an effectual and an operational system of finance. The development in domestic loans issued to the private segment as a fraction of GDP gives a sign of how economic liberalization is growing in the country. Additionally, it shows the capacity of the

sector to advance loans but eliminates credits to the private segment by the bank of Ghana, which is frequently hushed for the period of financial suppression (Johnston & Pazarbasioglu, 1995).

1.8 Arrangement of Chapter

This paper is grouped into episodes of five and has been organized as outlined: Episode one of the research initiates the theme and highlight on area such as the research contextual, problem statement, purpose of the research, research inquiries, importance of the work, short-comings, and scope of the research and lastly, the arrangement of chapters. The second section reviews relevant works of financial development on income disparity. The third chapter discusses the research approach. The fourth chapter covers data, results and discussions. The final chapter outlines the summary, conclusion, commendations and future area to be studied.

CHAPTER TWO

LITERATURE REVIEW

2.1 Chapter Introduction

The majority of experimental research backs the impression that the growth of the financial system influences uneven income dissemination positively. This chapter will scrutinize the theoretical framework and appraise diverse work on the growth of the financial system on income disparity. This chapter is grouped into different parts that review the argument put forward by other scholars. Unit 2.2 talks about the concept of financial development. Unit 2.3 talks about the state of Ghana's financial sector growth and the economy. Section 2.4 and 2.5 review work on the consequence of financial expansion on the disparity of income and Section 2.6 wraps up the section.

2.2 The concept of Financial Development

Financial development is interpreted as the ease with which a company or an entrepreneur with a thorough project can access funds and the poise with which an investor predicts satisfactory returns. Bestowing to Rajan and Zingales (2003), financial sector growth can spread challenging perils, allowing them respite where they can best be accepted and lastly, it must be executed at a lower cost. Additionally, the World Economic Forum (2012) explains financial expansion as “the factors, procedures, and body that lead to efficient financial mediation and markets, as well as deep and broad access to funds and financial services.” This implies that financial sector growth is linked to the smooth operating of the financial sector such as information creation regarding realistic investment opportunities

and assigning funds to such realistic opportunities, management of risk, savings mobilization and lessening exchange activities within the market. Financial sector development is defined as the procedure by which financial mediators reduce, but do not eliminate shocks in the cost of doing business and as a result rallies the creation of ex-ante information with regards to likely investments, investments supervision and corporate governance implementation, trading, managing of peril and diversification, bringing together savings and mobilization, and lastly, the exchange of goods and services (Demirguc-Kunt & Levine, 2009).

The role finance plays in most theories of uneven dissemination of income is key (Demirguc-Kunt & Levine, 2009). The economic model gives an excellent forecast with regards to shocks of finance on the disparity of income. Though subject to more than enough qualification, most of the empirical investigation indicates that financial sector growth broadens economic opportunities and lessens the uneven distribution of income. The majority of research from different points of view on financial sector growth specifies that financial development improves economic growth, toughens competitions and rises labour demands. The growth of the sector ensures access to improved insurance services and management of risk. Rajan and Zingales (2003) consequently stated that the growth of the financial system of a country improves its economic development (Demirguc-Kunt & Maksimovic, 1998; Jayaratne & Strahan, 1996; King & Levine, 1993; Rajan & Zingales, 1998). The question is why then do most developing nations still experience financial underdevelopment? The response most preferred by analysts is the lack of demand. Conclusively, demand is an imperative influencer of growth in the financial system. However, it cannot be the only justification. An exceptional reason is that there are structural obstructions in meeting demand. Conceivably, a nation does not have the required intensity

of social resource to generate a feasible financial sector or maybe, it has not acquired the right political, cultural or legal framework (Bencivenga & Smith, 1991; Greenwood & Jovanovich, 1990; Guiso, Sapienza & Zingales, 2004). Porta, Lopez-de-Silanes, Shleifer and Vishny (1997, 1998) publicized that nations with a common-law source appear to have enhanced marginal financier's protection and additionally, these states have extra extremely developed equity markets.

2.3 The Financial and Economic system of Ghana

Ever since the financial system reforms in Ghana, the sector has experienced a marvellous growth. The capital market over the year has been emergent and as of December 2010, equities listed onto the Ghana Stock Exchange were 35 and certified market operators of service were 115. The regulators of the capital market in the country are the Securities and Exchange Commission. Generally, the Securities and Exchange Commission certifies and controls the capital market, upholds the expansion of the securities industry and recommends to the Finance Minister and Economic Planning on issues linked to the securities industry. Adding to certifying and approving, SEC also engages in the supervision of traders and execution of the securities industry laws. The security and Exchange Commission is responsible for the supervision of traders. Every binding information is exposed to investigation in terms of capital adequacy, consumer and trade certification, and pertinent discoveries. Fitting punishments are meted where the investigation reveals an infringement of any securities industry laws and policies. Despite the perfection in the business over the eons, there remain various issues that must be triumphing if the market is to become globally economical. Major setbacks consist of staffing issues, training, underfunding and capacity in building the securities industry laws.

Before November 2008, the Ghana Stock Exchange's Depository System had become functional. Merchants now have entree to exchange transactions from the dealer place of work, floor and through a protected internet service at any locality. Putting the system into practice has marshalled in a fresh era of swift and proficient liberation and payment on the market. In 2011, it became an entirely held subsidiary of the Bank of Ghana. Ghana Stock Exchange trading is paid by wire and not more than 72 hours after a business deal. Additionally, primary securities are also attributed to the depository accounts of buying investors within the same era. The Ghana Stock Exchange, Bloomberg Corporation and Reuters have moved in accords under which real-time exchange data from the GSE is disseminated internationally. The insurance sector in the country is undersized, relative to the banking sector. That is, the total assets of insurance firms go beyond the total assets of banks. The picture in Ghana is a typical situation of immature markets in countries such as China. Worse, the level of augmentation of insurance assets is lower than the level of augmentation of bank assets. The difficulty for Ghana is to make efforts to raise the asset base of the insurance sector. For the reinsurance sub-sector, the gross premium for non-life was GH¢52.7 million at the end of 2010. The percentage of expansion was 19.9 percent in 2007, 39 percent for 2008, and 6.3 percent in 2009 and minus 7 percent for 2010. The gross premium for the life insurance sector was GH¢1.68 million for 2010. The percentage of growth was minus 33.9 percent for 2007, 113.6 percent for 2008, 32.1 percent for 2009 and 9.0 percent for 2010. Amended information from the Statistical Service of Ghana showed that in 2015, the gross domestic product grew by 3.89 percent. The Services segment recorded the utmost rate of growth by 5.7 percent, with the Industrial and Agricultural segment recording 1.2 percent and 2.4 percent in that order. By and large, there has been an uninterrupted downturn in the GDP rate of growth for the past four years from a soaring of 9.3 percent in 2012 to 3.9 percent in 2015.

A change in the spending of Government from utilization to developmental venture, tied with the current power catastrophe witnessed by the nation has added to the bend in the development of GDP over a couple of years ago. Headline inflation increased from 17.7 percent ending December 2015 to 19.2 percent ending March 2016. Nevertheless, the month of February verified an insignificant fall in the rate of inflation to 18.5 from a rate of 19.0 in January. The Cedi in 2015 demonstrated weakness against key trading currencies. The cedi devalued against key trading currencies in 2015. The currency devalued cumulatively by 18.6 percent, 12.8 percent, and 6.1 percent against the US currency, the British sterling, and the Euro correspondingly for nine months. Despite demand strains remain, the cedi witnessed an appreciation in contrast to the Euro and the Pound for the 2015 last quarter by 0.7 percent and 0.2 percent in that order. This contributed greatly to the inflows of cash from the US\$ 1 billion Eurobond issued on October 14, 2015, and the US\$ 1.8 billion Cocobod credit signed on September 17, 2015. Additionally, programmes carried out by IMF appear to have lessened the strain on forex and stabilized the local currency as proofed by its performance in the last phase of 2015 which persisted into the first phase of 2016. Also, channels imposed by the Bank of Ghana brought about some echelon of stability in the Cedi. On the Interbank Exchange, the local currency increased by 1.8 percent contrary to the Pounds Sterling in the first phase of 2016, but the currency devalued by 0.9 percent and 4.7 percent against the US currency and the Euro in that order. On the forex market, the cedi increased by 6.0 percent contrary to the Pound sterling, yet deteriorated by 0.2 percent and 2.3 percent contrary to the US dollar and the Euro correspondingly, (Bank of Ghana Statistical Bulletin, PwC Ghana Budget Highlight, 2015). The year 2015 was the era that experienced a restrained performance comparative to 2014.

2.4 Theoretical Review

The theoretical literature review with regards to the consequence of financial system growth on the uneven dissemination of income is far from reach. The advancement of the financial sector enables the vulnerable to have easy access to funds which enable them to enlarge their operations and also capitalize on physical and human resource development and in so doing reducing uneven income distribution (Aghion & Bolton, 1997; Banerjee & Newman, 1993; Galor & Zeira, 1993; Mookherjee & Ray, 2003, 2010; Shahbaz & Islam, 2011). Bourguignon and Verdier (2000) also argued that as the poor depend on the informal credit market, financial sector growth will be beneficial to only the rich. According to Demirguc-Kunt and Levine (2008), theories on the unequal distribution of income do not tackle how procedures of financial expansion influence the uneven dissemination of income. There are however three schools of thought regarding the hypothetical research of financial sector growth on income disparity.

The first school of thought is the U-shaped inverted theory which was promulgated by Greenwood and Jovanovich (GJ hypothesis) in 1990. Greenwood and Jovanovich proposed a model that forecasts a U-shaped inverted theory amid financial sector expansion, income disparity, and growing economy. They anticipated that the connexion amid growing financial sector and uneven dissemination of income is a U-shaped inverted curve. This theory is of the view that during an initial phase of financial development, financial mediators are nearly fictional and the gap between the deprived and the affluent widens. As finance progresses to the middle stage of growth, financial markets start to mature. As finance progresses from the early stage through to the middle phases of financial development, call for financial products grows. The development of the section in reaction to these changes strengthen proficiency and reduces transaction costs. As the financial sector

becomes fully developed at the advanced stage, access to credit becomes easy. At this stage, the poor benefit from the advancement in the financial market which declines unequal distribution of income. This reduction results in an inverted U-shaped assumption with uneven dissemination of income growing at the initial phase of financial sector growth and declining as the market improves. Additionally, Greenwood and Jovanovich (1990) proposed in their model that mediators work extra cost-effective, but also perilous, of two technology if and only if they can spread peril by financing in financial services. Equally, the fixed costs, such as participation fees, related to these alliances thwart persons of low-income groups from being part. If the vulnerable save little and thus accrue riches gradually, income changes amid members of high-income intermediary coalitions and outsiders of low-income will broaden, ensuing in a rise in the disparity of income. Nevertheless, because the fee to entry is static, all mediators in due course become a member of these alliances, resulting in an ascending trend. Subsequently, Greenwood and Jovanovich's (1990) model forecasts a U-shaped inverted correlation amid the disparity of income and financial sector growth, with the disparity of income initially rising and then falling before finally it becomes stable in the long-run as a lot of individuals join the financial coalition. This theory is titled the U-shaped inverted theory of financial sector growth. When the U-shaped inverted theory is right, enhancing financial access will first deteriorate income disparity, but will be improved as soon as the country has attained a confident level of financial expansion.

The second theory is the inequality narrowing theory. This theory was put together by Banerjee and Newman (1993) and Galor and Zeira (1993). The theory is based on market imperfections. Financial market growth provides wider and easy access to credit. As financial intermediaries grow, the credit constraints encountered by the vulnerable will be eliminated and will help in reducing income disparity. Comparable expectations can be seen

in the model by Banerjee and Newman (1993). This theory envisages a negative and linear connexion between financial expansion and the disparity of income. As the market, contract and mediators develop, financial market imperfection reduces and more chances will be given to the deprived to borrow and to finance in human capital formation. Galor and Zeira (1993) and Banerjee and Newman (1993) expected the capacity of financial development to lessen the uneven dissemination of income regardless of the stage of financial growth. Though the earlier arguments recommend that the rich might gain more from the growth of the financial sector than the indigent, this may not essentially be the situation. As the market becomes cavernous and entree to finance enhances, families that did not formerly have access to funds may benefit tremendously. Quite a lot of hypothetical models have formalized this instinct indicating that an imperfect capital market may escalate income disparity during economic growth. Additionally, contingent on the early income dissemination, these market inadequacies may indicate that income disparity carries on even in the long-run. Galor and Zeira (1993) create a two-sector model with inheritance amid generations, where mediators who cause inseparable financing in education can work in a savvy-intense sector. Conversely, as a result of capital market inadequacies, persons with inheritance superior to that of an investment expanse will be eligible to carry out this financing. This results in the disparity of income that is spread over inheritance to the subsequent cohort. In their model, capital market economic inadequacies and primarily unequal dissemination of income will preserve this disparity and improve more gradually than a comparable economy with more even preliminary dissemination of income. In the same way, Banerjee and Newman (1993) constructed a three-sector model, in which two of the knowhow require indivisible investment. Because of imperfect capital markets, only affluent mediators can borrow enough to manage these indissoluble, higher return technologies. Additionally, the primary dissemination of income has a long-run effect on

the dissemination of income and development in the existence of an imperfect capital market. Subsequently, the expected connexion amid financial sector expansion and income disparity must be negative. This theory is termed the inequality-narrowing theory of financial expansion. If the inequality narrowing theory is accurate, enhancing financial access would decrease disparity and help lower-income disparity in deprived and rich nations alike.

The third is the inequality widening theory which was developed by Clarke et al. (2006). The disparity widening concept is of the understanding that financial sector growth profits the affluent, mainly when the quality of the institution is weak. This theory is of the view that the affluent can provide a guarantee and are possible of paying back their loans, unlike the vulnerable (Rajan & Zingales, 2003). This will weaken equal distribution of income leading to a positive connexion amid financial sector growth and uneven dissemination of income. Even though majority of specialists in economics would not presume financial sector development to broaden disparity of income in the long-run, some Marxist theory and literature often describe backers as covetous brokers who serve only the concerns of the affluent and well linked. Undeniably, these opinions are so shared that the initial section of a current paper protecting the free-market system by two renowned economists, Rajan and Zingales (2003), is titled "Does finance benefit only the rich?" A single purpose why growing financial sector might be advantageous to the affluent is that the financial sectors channel money to the well-connected and the affluent who can provide collateral and are likely to pay off their loans. As the financial sector becomes more advanced, they may continue to lend money to the affluent, but abandon the vulnerable who are incapable of providing security. In effect, even though the financial sector may grow, the deprived will be incapable to invest in schooling or establish a new business. This propensity may be

strengthened if the affluent are capable to avert fresh establishments from getting access to fund, avoiding them from easy entry into the market and limiting the capability of the deprived to grow. In effect, the predictable connexion amid financial sector growth and income disparity will be positive. This theory of financial sector growth is called the inequality-widening theory. If this theory holds, then some countries will be stuck in a high disparity ecosphere that would only be deteriorated by financial sector growth.

2.5 Empirical Review

This critically appraises various experimental studies that have been conducted. Clarke et al. (2006) looked at the correlation between financial sector growth and unequal dissemination of income in 83 countries from 1960 to 1995. They used an Ordinary Least Square and a Generalized Method of Moment approach in their analyses. Their result supports Galor and Zeira (1993) hypothesis which found a negative connexion between financial expansion and the disparity of income but with weak provision for the inverted U-shaped hypothesis.

Westley (2001) also studied the consequence of the financial market's growth on the dissemination of income in Latin American countries and settled that easy entry to financial resources through microfinance rules can lessen the disparity of income.

Dollar and Kraay (2002) discovered that a rise in trade will lead to a development in the dissemination of income, while the high level of inflation, government spending, and financial sector growth would lead to a higher disparity of income.

Batuo et al. (2010) examined the experimental continuance of Greenwood Jovanovich's (1990) theory using the information on African countries and applied the Generalized Method of Moments. They discovered that financial expansion has a positive effect on income dissemination but did not find confirmation in support of a U-shaped inverted connexion amid financial expansion and the disparity of income.

Ling-Zheng and Xia-Hai (2012) applied a threshold model developed by Hansen (1999) using provincial data to examine the correlation between financial expansion and the disparity of income. Their empirical evidence revealed that financial expansion worsens income disparity and found support for a U-shaped connexion amid financial expansion and the disparity of income.

J. Sebastian and W. Sebastian (2011) investigated the association between financial sector growth and the disparity of income by applying a fixed-effects model. Their research revealed that financial expansion deteriorates the disparity of income but did not find the support of a U-shaped inverted theory.

Tan and Law (2012) examined the dynamics of financial sector growth and the disparity of income using information from 35 countries. Their empirical evidence revealed a U-shaped correlation amid financial sector growth and the dissemination of income.

Nikoloski (2013) investigated the linear and non-linear correlation between financial sector growth and income disparity for both developed and developing nations from 1962 to 2006 by applying a multivariate dynamic panel regression model. The experimental evidence lends support for the U-shaped inverted concept amid financial sector growth and income disparity.

Rehman et al. (2008) analysed the information of 51 regions at diverse phases of a growing economy to find out the reasons influencing income disparity amongst these countries. They separated the information into four various clusters of income to assess the Kuznets hypothesis. Their paper revealed that government expenditure, the rate of literacy and globalization were the major determinant of income disparity in low, middle- and higher-income nations. They also found that financial growth improves the disparity of income notwithstanding the echelon of monetary growth and established evidence supporting the U-shaped inverted theory.

Bittencourt (2006) scrutinized the connexion between financial expansion and the disparity of income in Brazil from 1980 to 1990. The domino effect based on a pooled Ordinary Least Square and a time series revealed that access to finance and credit market have a substantial and strong consequence in plummeting income disparity.

Baliamoune-Lut and Lutz (2005) studied the impacts of financial deepening, trade and foreign capital on urban-rural disparity of income in Africa. They established an inconsequential effect of financial deepening and foreign capital on urban-rural income disparity reduction, but trade had a substantial effect in reducing the uneven distribution of income.

Li et al. (1998) studied the correlation between financial expansion and the disparity of income for 40 developing and developed nations from 1947 to 1994 using Ordinary Least Squares (OLS) estimator, AR (1) Error Specification and Instrumental Variable method (IV). They discovered that a well-functioning financial sector is powerfully correlated with lowering income disparity.

Beck et al. (2007) analysed the correlation between financial sector growth and the dissemination of income. They established that financial growth is related to lowering the disparity of income.

Jaumotte, Lall and Papa Georgiou (2013) examined the disparity of income with an emphasis on globalization and financial sector growth. In a sample of 51 nations from 1981 to 2003, their result revealed a positive statistically substantial coefficient for financial sector growth and income disparity.

Similar outcomes were testified by Dabla-Norris, Kochhar Ricka, Suphaphiphat and Tsounta (2015). They researched on financial expansion and income disparity on 97 countries from 1980 to 2012. Their result revealed that financial sector growth worsens income disparity.

Selim and Liu (2010) examined the correlation between financial sector growth and penury by adopting a fixed effect vector decomposition model. They resolved that financial sector growth is favourable for reducing penury while financial unpredictability is averse to the deprived.

Hamori and Hashiguchi (2012) using annual panel data on 126 countries from 1963 to 2002 and adopting a panel fixed effects and a Generalized Method of Moments found that financial sector development reduces the disparity of income.

Naceur and Zhang (2016) use a section of 143 nations from 1961 to 2011 and discovered that quite a few scopes of financial sector growth measured, such as access, efficiency,

deepening and stability can meaningfully decrease income disparity and penury, while financial liberalization tends to worsen income disparity.

Kim and Lin (2011) used an Instrumental Variable regression method of panel data on both developed and developing nations and found confirmation for a nonlinear impact of financial growth on income disparity. This means that financial expansion will profit the affluent and improve the unequal distribution of income just when the nation has got hold of a confident phase of financial growth. Beneath such a stage, financial development will negatively affect the vulnerable and deteriorate uneven income distribution.

Law and Tan (2009) analysed the effect of financial expansion on the disparity of income in Malaysia from 1980 to 2000 using an ARDL approach. Their findings revealed that financial sector growth is insignificant in reducing income disparity in the region.

Sehrawat and Giri (2015), researched financial sector growth and unequal distribution of income in India from 1982 to 2012. The paper discovered that financial sector growth, economic growth and consumer price index worsen the unequal dissemination of income mutually in the long and short-run. However, globalization improves the unsatisfactory income distribution in India. Their result also established no confirmation of a U-shaped inverted theory which states that at a primary stage of financial development, income disparity widens, but income disparity improves when financial sector growth has stretch to a certain stage of development.

Baligh and Pirae (2013) researched on financial sector growth and the unequal dissemination of income in Iran from 1973 to 2010. Their findings provided support for

Galor and Zeira (1993) hypothesis which states that there is a negative and a linear connexion between finance and disparity of income.

Hafeez, Khan and Ahmed (2008) also analysed the connexion between financial sector growth, growing economy, and income disparity and revealed that financial sector growth improves the disparity of income notwithstanding the stage of financial development.

Liang (2008) used dynamic panel estimation to study the correlation between financial sector growth and distributional disparity of income in rural and urban areas of China. The result found support for Galor and Zeira (1993) hypothesis which states that there is a negative and a linear connexion between financial expansion and the disparity of income.

Bittencourt (2006) looked at the consequence of financial sector growth on the unequal dissemination of income in Brazil from 1980 to 1990 and found out that credit accessibility to the vulnerable and disparity of income is improved when the financial sector is developed.

Kai and Hamori (2009) looked at the connexion between financial sector growth, unequal distribution of income and globalization in 29 Sub-Saharan Africa nations from 1980 to 2002 using a fixed and a random effect model. They found that financial sector growth improves disparity of income and found that globalization has led to the rich becoming wealthier and the vulnerable becoming worse-off.

Batuo et al. (2010) took a study on financial sector growth and unequal dissemination of income in 22 African countries from 1990 to 2004 using a dynamic estimate panel technique. Their results revealed that financial sector growth improves the unequal dissemination of income and found backing for the inverted U-shaped theory which states

that at the primary phase of financial sector growth, the disparity of income worsens, but as financial sector growth matures, the disparity of income improves.

Asongu (2013) examined the various financial sector growth channels that are good for the poor through investment and unequal distribution of income in 13 African countries. Their results uncovered that improvement in finance in Africa is not pro-poor. Nevertheless, their research provided sustenance for the U-shaped inverted assumption which states that at the initial phase of financial expansion, income disparity deteriorates, but improves as financial expansion attains a confident threshold level.

2.6 Conclusion of Chapter

Hypothetical and experimental outcomes on the connexion amid financial development and income disparity demonstrate the different observations that authors have regarding the subject matter. The different results from these authors are because of the information source and estimations used in examining the research. Conversely, no study has been carried out on a single African nation. This existing gap is filled by the researcher by limiting the research to Ghana, using linear interpolation to discover missing data points and using logarithm derivative to find out whether Greenwood and Jovanovich (1990) inverted U-shaped hypothesis exist.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction of Chapter

This chapter provides the study approach implemented. The section spells out the design of the research and approach, the source of data, specification of model and description of the variables used.

3.2 Design and Approach of the Research

According to Malhorta and Briks (2007), a research design is a basic structure for carrying out a research task. It sketches out the research measures required for attaining the information that is necessary to assist the researcher in solving the research problem. Given this, the objectives of the research would be accomplished by identifying variables necessary to be analysed, collate and sort all data gathered, present, discuss, conclude and recommend to policy analysts on the findings. The approach to the research is quantitative. A quantitative approach was defined by Burns and Grove (1993) as a methodical procedure to explain, to test correlations and to study the cause and effect interactions among variables. According to Cassel and Symon (1994), the concept of the quantitative approach is to ensure consistent, legitimate and generalizable measurements to predict causes and effects among variables.

3.3 Data Source

A source was used to gather data for this research. The indicator of financial development was obtained from the World Bank, World Development Indicator Database (2016). Domestic loans issued to the private segment as a share of GDP was used to measure financial sector growth. Gini index was obtained from the World Bank, World Development Indicator Database (2016) and the author's calculation using linear interpolation. The control variables comprised Gross Domestic Product per capita, Trade, Inflation, Manufacturing Value Added and Government Spending obtained from World Bank, World Development Indicator Database (2016).

3.4 Cointegration

To triumph over the concern of non-stationary variables and earlier precincts on the lag structure of a model, econometric scrutiny of time series data has progressively enthused in the direction of the subject of cointegration. The motive being that cointegration is a potent method for distinguishing the occurrence of steady-state equilibrium amid series. In the case of no cointegration among the series, then we have spurious regression and the outcome becomes almost worthless. Also, if variables do integrate then we have cointegration. A series with a steady mean, steady variance and a steady autocovariances for each given lag is said to be stationary. A non-stationary time series is a stochastic process with a unit root or a structural break. The occurrence of a structural break suggests that a time series in consideration is non-stationary while the nonexistence of it necessitates that a time series is stationary. Therefore, when such a non-stationary time series are adopted in the approximation of an econometric model, the Ordinary Least Square traditional diagnostic statistics for assessment of the cogency of the model approximates such as coefficient of

determination (R^2), Fisher's Ratio (F-Statistic), Durbin-Watson (DW-Stat), t-statistic and others turn out to be extremely deceptive and defective in terms of prediction and policy. Modelling time series in edict to maintain their long-run information complete can be prepared through cointegration. The Autoregressive Distributive Lag (ARDL) approach, which was propounded by Pesaran, Shin and Smith (2001), estimates empirically the dynamic long and short-run relationship between the series using an Unrestricted Error Correction model. According to Laurenceson and Chai (2003), the problem associated with non-stationary time series data is avoided by using an Autoregressive Distributive Lag approach. As earlier on said, the variables which are considered in this research are a mix of series that are integrated at levels and at first difference order, unlike Johansen (1991,1995) and Johansen-Juselius (1990) who indicated that the test for cointegration necessitates series to be of similar degree of integration, that is at first difference. As a result, the method of cointegration test by Johansen (1991) and Johansen-Juselius (1990) is not fitting and cannot be employed. According to Engle and Granger (1986) and also works by Hassler and Wolters (2006), the recognition of the Autoregressive Distributive Lag approach originates from the idea that the integration of non-stationary variable is equal to an Error Correction process and the Autoregressive Distributive Lag model has a reparameterization in Error Correction form.

In repetition, optimal lag lengths are carefully chosen by two diverse lag selection techniques such as the general to specific criterion which is based on some sequential t-test procedure and the standard data criterion such as the Akaike data criterion, Final Prediction Error, Bayesian data criterion, and Hannan-Quinn data criterion are generally well known to have the challenge of over fitting the truncation lags in unit root tests leading to low power in unit root tests. Consequently, the Autoregressive Distributive Lag approach is mostly

needed when managing series that are integrated of diverse orders or equally incorporated and sturdy when there is a sole long-run correlation linking the core series in a minute sample size. The Augmented Dickey-Fuller unit root test is used for stationary property test of a series. The unit root test is required to decide the times a number of variable must be differenced to attain stationarity. However, the easy applicability of the unit root test by the Augmented Dickey-Fuller makes it superior as compared to another unit root test. Finding the best possible lag length for each of the series by using an Autoregressive Distributive Lag approach is very important because it aids in obtaining a standard normal error term that is not hit by serial correlation, non-normality, and heteroskedasticity. The model with the smallest Akaike Information Criterion, Schwarz Bayesian Criterion estimates or small standard errors and a high coefficient of determination performs well. Pesaran and Shin (1998) battled that “appropriate modification of the orders of the ARDL model is sufficient to simultaneously correct for residual serial correlation and the problem of endogenous variables.”

3.5 Model Specification

Following Shahbaz and Islam (2011), the subsequent specifications have been developed to experimentally analyse the consequence of financial expansion on the disparity of income and also to find out whether the inverted U-shaped assumption is supported in Ghana.

3.5.1 Model 1

This model represents the base specification. The subsequent models have been developed based on this model.

$$GINI_t = f(FD_t, FINS_t, CV_t),$$

where Gini Coefficient (*Gini*) is a function (*f*) of Financial Development(*FD*), Financial Instability (*FINS*) and the Control Variables (*CV*) which include: Gross Domestic Product per Capita, Government Expenses, Inflation, Manufacturing valued added and Trade.

3.5.2 Model 2

This model epitomises the simple linear functional specification of the model.

$$LGINI_t = \alpha_0 + \alpha_1 LFD_t + \alpha_2 FINS_t + \alpha_3 LCV_t + \varepsilon_t,$$

where *L* entails that the series has been altered into the natural log for a credible outcome. *LGINI* is the natural log of the Gini Coefficient, α_0 is the constant term, $\alpha_1, \alpha_2, \alpha_3$, are vectors of coefficients, *LFD* is the log of financial development, *FINS* is the financial instability variable, *LCV* is the log of control variables which comprise of the log of Gross Domestic Product per Capita, the log of Government Spending, the log of Inflation, the log of Manufacturing Valued Added and the log of Trade, ε is the error term and subscript *t*, is the time period

To check for linear hypothesis, the researcher regressed the natural log of the *Gini* coefficient on linear terms for the log of financial development, the level of financial

instability and the additional log of control variables which include the log of Gross Domestic Product per Capita, the log of Government Spending, the log of Inflation, the log of Manufacturing Value Added and the log of Trade.

3.5.3 Model 3

In testing for the U-shaped inverted theory, the nonlinear specification of financial development is added to the model. Following the approach used by Clarke *et al.* (2003, 2006), the researcher proposes to analyse the inverted U-shaped theory using the nonlinear specification.

$$LGINI_t = \alpha_0 + \alpha_1 LFD_t + \alpha_2 LFD_t^2 + \alpha_3 FINS_t + \alpha_4 LCV_t + \varepsilon_t,$$

where *LGini* represents the natural log of Gini coefficient which is used as a substitution for income disparity, α_0 is the constant term, α_1 , α_2 , α_3 , and α_4 are the parameters, *LFD* represents the natural log of financial development which is used as a substitution for domestic loan issued to the private segment, *FINS* represents financial instability which is used as a proxy for systemic banking crisis, *LCV* represents the log of control variables which are the log of Gross Domestic Product per Capita which is used as a proxy for economic growth, the log of Trade which is used as a proxy for globalization, the log of Manufacturing Value Added which is used as a substitution for the contribution of industry and service segment as a share of GDP, the log of Inflation which is used as a proxy for consumer price index and the log of Government Spending which is used as a substitution for government consumption on goods and services, LFD^2 is the squared term of Financial Development which is used as a proxy for domestic loan issued to the private sector and

represents the nonlinear term used to test the U-shaped inverted connexion amid uneven dissemination of income and financial expansion.

This model forecasts an inverted U-shaped assumption if the logarithm derivative of Gini to the log of financial development is convex. A normal U-shaped relationship occurs if the logarithm derivative of Gini to the log of financial development is concave.

3.5.4 Model 4

The long and the short-run effect of these series will be analysed using the Unrestricted Error Correction Method.

$$\begin{aligned} \Delta LGINI_t = & \alpha_0 + \alpha T + \sum_{i=1}^P \beta_i \Delta LGINI_{t-i} + \sum_{i=1}^P \delta_i \Delta LFD_{t-i} + \sum_{i=1}^P \varepsilon_i \Delta FINS_{t-i} + \\ & \sum_{i=1}^P \sigma_i \Delta LGDP_{t-i} + \sum_{i=1}^P \omega_i \Delta LINF_{t-i} + \sum_{i=1}^P \partial_i \Delta LGS_{t-i} + \sum_{i=1}^P \phi_i \Delta LM_{t-i} + \sum_{i=1}^P \varphi_i \Delta LTR_{t-i} + \lambda_1 LGINI_{t-1} + \lambda_2 LFD_{t-1} + \\ & \lambda_3 FINS_{t-1} + \lambda_4 LGDP_{t-1} + \lambda_5 LINF_{t-1} + \lambda_6 LGS_{t-1} + \lambda_7 LM_{t-1} + \lambda_8 LTR_{t-1} + \mu_t, \end{aligned}$$

where the natural log of the Gini coefficient is $LGINI$, LFD is the natural log of Financial Development, $FINS$ is financial instability, $LGDP$ is the natural log of Gross Domestic Product, $LINF$ is the natural log of Inflation, LGS is the natural log of Government Spending, LM is the natural log of manufacturing value-added, LTR is the natural log of Trade. T is the time trend. The L entails that the series has been changed into a natural log. The transformation of the variables into the logarithm is to solve the problem associated with outliers and to produce a constant and consistent outcome. Taking the log-linear specification according to Shahbaz and Islam (2011) is to provide better results. Additionally, according to Granger and Newbold (1986), the factors are articulated into logarithm in a bid to capture the multiplicative time sequence consequence and furthermore

to achieve stationary in their fluctuation. The initial segment of the model with summation signs $\sum$ are the short run and the rest with λ are the long run parameters. The maximum lag is p . Δ denotes the first difference operator. α_0 is the drift component. μ is the usual white noise residuals, subscripts t and $t-i$ denote the current and lagged values.

3.6 Description of Variables

The variables in the study have been decomposed under three main classifications; Dependent variable, Independent variables, and Control variables.

3.6.1 Dependent variable

The Gini index estimates unequal income dissemination. The Gini coefficient estimates the degree to which income is disseminated unequally among households. An index of 0 designate perfect parity, while a coefficient of 1 signifies perfect inequity. The source of the computed data as subscribed to by the researcher was obtained from the World Bank, Development Research Group (2016) and the author's calculations. There were missing data points and for the investigator to get balanced data, the researcher applied linear interpolation to estimate the unobserved data points. Interpolation is a theory that can be applied to time-series data to control omitted values, Fung (2006). The efficacy of this technique practically, as the approximation of time series is concerned, demands on the soundness of the regression model used which will make the regression model a good approximation to reality (Chow & Lin, 1971). The number of observations is 42.

3.6.2 Independent variable

Financial Development is explained as the ease with which a company or an entrepreneur with a thorough plan can get hold of finance and the sureness with which an investor can forestall adequate returns. Financial development is used as a proxy for a domestic loan issued to the private sector as a portion of GDP. Domestic loan to the private sector talks about financial assets provided by financial firms to the private division in the form of loans, trade credits and other accounts receivable that establishes an entitlement for reimbursement. This variable is appropriate because it constitutes the fundamentals of the financial system in the country and a key component in moving towards a competent and an operative financial system. A few researchers utilize broad money as a share of GDP to measure financial growth. Broad money, nonetheless, does not appraise a key purpose of financial intermediaries. It has also been revealed that domestic credit is an indicator that allows for the best prediction of financial instability (Kaminsky & Reinhart, 1999). According to Demirguc-Kunt and Detragiache in their 1999 publication, established the undeniable connexion amid financial expansion and financial instability. The source of this computed data as subscribed to by the researcher was taken from the World Bank, World Development Indicators Database (2016). The number of observations is 42.

According to Mishkin (1999), financial instability arises when shocks to the financial sector hamper information flow and as a result, the sector cannot extensively discharge its duty of channelling finance to persons and businesses with prolific investment prospects. Financial instability is used as a substitute for a systemic banking crisis. A systemic banking crisis is the peril that a catastrophe by a large financial organisation will lead to failures by other large banks and a fall of the financial system. The recent report by Bank of Ghana on the country's financial sector stability covering bank's operations for July 2016 reveals that Non-

Performing Loans have hit 6.1 billion Ghana Cedi. Credits issued out by financial institutions to the corporate bodies and individuals that might go bad are on the rise with some even anxious that it can lead to the crumple of several banks. The central bank attributes the deteriorating Non-Performing loan ratio to measures such as an increase in production cost due to utility tariff increments, a meltdown of the economy and banks withholding advances. Non-Performing loans as in July 2016 to the private sector were 85.8 percent while that of the public sector was 14.2 percent. The stage of Non-Performing Loans linked to the private firm was driven basically by local industries. According to Levine (1997), financial development is constructive for a growing economy, but we must recognize the undeniable link amid financial sector growth and financial instability. The consequence of financial sector uncertainty is computed using an index which is the absolute value of residuals taken from the trend. The value of the index begins from 100, and higher values propose more uncertainty. The absolute value of the residuals is acquired by regressing domestic loan to the private sector, which is an estimate of financial sector growth on its lagged value and a time trend from 1970 to 2012. Data on financial instability is tracked from World Bank, World Development Indicators Database (2016) and the author's calculation using information from Jeanneney and Kpodar (2011). The number of observations is 41.

3.6.3 Control Variables

The control variables comprise inflation as a substitution for the consumer price index. Inflation is the rise in the price level of products that is sustained over a significant period. According to Easterly and Fischer (2001), changes in inflation can lead to financial instability if measures are not put in place to curtail it. The poor are hard hit than the rich because the rich can cushion themselves against fluctuation in inflation. Consumer price

index reveals the yearly adjustment in rate in the price to the average customer of procuring a hamper of products that could be fixed or varied at precise periods, such as annually. The source of this computed data as subscribed to by the researcher was taken from the World Bank, World Development Indicator Database, (2016). The number of observations is 42.

The author also included Manufacturing Value Added as a percentage of GDP. Quarthey and Kayanula (2000) explained manufacturing as the procedure of transforming raw materials into finished products. This variable is used as a substitution for the modern sector. Where the modern sector is the value-added in industry and services as a fraction of Gross Domestic Product but excludes the agricultural sector. Manufacturing refers to businesses having a place with the International Standard Industrial Classification divisions. Value added is the net output of a sector after summing up all output and subtracting intermediate inputs. It is ascertained without making deductions for deterioration of manufactured assets and dilapidation of resources. The source of this computed data as subscribed to by the researcher is taken from the World Bank national accounts data, and OECD National Accounts data files (2016). The number of observations is 42.

GDP per capita (GDP), is used as a substitution for a growing economy. GDP per capita is Gross Domestic Product divided by the midyear population. The relationship between the uneven distribution of income and the growth of the economy follows a U-shaped inverted hypothesis. This theory is of the supposition that at an early stage of expansion, income disparity increases and declines as the economy grows, Kuznets (1955). GDP is the sum of gross value added by all inhabitant manufacturers in the economy plus any product taxes and minus any subsidies not included in the value of the products. The development of the economy is measured as a variation in the volume of its output or the real incomes of its

citizens. Data on GDP per capita is sourced from World Bank national accounts data, and OECD National Accounts data files (2016). The number of observations is 42.

Government expenses as a percentage of GDP is a substitution for government consumption. Government expenses comprise all government current spending for the purchase of services and goods as well as a recompense of workers. It also comprises of expenses on safety and defence but omits government military spending that is a share of government capital formation. The consequence of government spending on eradicating income disparity is inconclusive as to whether it improves or worsens unequal income distribution. If key relocation through the tax and transfer system is geared in the direction of little income groups, then, government expenditure may end in superior parity. Nonetheless, it could likewise result in an inverse consequence if rich family units utilize their political influence to take advantage of the poor. Government spending is for the purchase of services and goods. Furthermore, it includes payment of public workers, expenses on safety excluding defence expenses that are part of government capital formation. Government spending is tracked from World Bank national accounts data, OECD National and World Bank development Indicator (2016). The number of observations is 42.

Finally, trade as a proportion of GDP is used as a substitution for globalization. Trade is defined as the sum of export and import of services and goods estimated as a fraction of Gross Domestic Product. The allocation of income enhances if the altercation of goods and services assists the poor and declines if the trade does not support the poor. Data on trade is sourced from World Bank national accounts data, and OECD National Accounts data files (2016). The number of observations is 42.

3.7 Justification of variables

3.7.1 Inflation

The rate of inflation which is used as a substitution for the consumer price index is estimated as a yearly change of percentage. The influence of inflation on the disparity of income has been inconsistent with some researchers finding a positive outcome of inflation on income disparity, others having a negative outcome of inflation on income disparity and some having results which are statistically insignificant. A study by Blinder and Esaki (1978) discover a positive outcome of inflation on income disparity while Ang (2010) find a negative outcome of inflation on disparity of income and lastly, Jantti and Jenkins (2010) using data from the U.K., do not find a statistically substantial effect amid inflation and income inequality. A study by Galli and Van der Hoeven (2001) revealed that an increase in inflation can both lessen and worsen income disparity reliant on the initial inflation rate. In Ghana, the vulnerable possibly cannot cushion themselves in times of high rising inflation as a result of the existence of barriers to entry in the market (Easterly & Fischer, 2001). As a result, a high rate of inflation worsens the uneven distribution of income (Cysne, Maldonado & Monteir, 2005). Notwithstanding, increasing inflation can lessen the real worth of private debt, which can decrease the uneven dissemination of income. Based on these findings, the authors' expectation of the consequence of inflation on the uneven distribution of income can either be positive or negative.

Table 1 Consequence of inflation on income disparity

Indicator name	Measurement	Source	Expected sign
INFLATION	ANNUAL INFLATION RATE (CONSUMER PRICE)	International Monetary Fund, International Financial Statistics and data files and World Bank Development Indicator Database (2016)	Uncertain

3.7.2 Financial Development

Financial Development is estimated by annual domestic loan to the private sector as a fraction of GDP. Rajan and Zingales (2003) highlighted several financial development measures. These measures include domestic loan from financial corporations to the private sector as a fraction of GDP, the fraction of equity issues by domestic companies to gross fixed capital formation during the year as a measure of equity issue, the total stock market capitalization and finally, the number of openly transacted domestic businesses per millions of people. Ghana's financial structure is well developed in the banking sector since most loans issued for domestic purposes come from the sector. The private sector is also the engine for growing economy hence, the author's choice of this variable. Galor and Moav (2004) demonstrated that credit expansion leads to a decline in uneven dissemination of income since the growth in credit gives an advantage to the weak in society to borrow and start a project that can decrease inequality. Moreover, Rajan and Zingales (2003)

demonstrated that where institutional quality in a country is not strong, the correlation amid financial development and uneven dissemination of income will be positive. However, the author expects the consequence of financial expansion on the uneven dissemination of income to be negative.

Table 2: Consequence of financial expansion on income disparity

Indicator	Measurement	Source	Expected sign
Financial Development	Annual domestic loan to the private sector (% of GDP)	International Monetary Fund, International Financial Statistics and data files, and World Bank and OECD GDP estimate and World Bank Development Indicator Database (2016).	Negative

3.7.3 Government Spending

Government spending is a substitution for government consumption and is estimated as a ratio of government expenses to GDP. Prevalent concern around the negative effect of uneven distribution of income has spawned substantial attention in the query of what can be done to eradicate income disparity. Government spending is on public order and safety, ensuring that its citizenry and properties are protected from damage. Government spending on employment ensures equal employment opportunities for all, irrespective of your political background and tribe. Government spending on health ensures that the necessities needed by health professionals in the cities and big towns to cure patients of their ailments

are also made available in the remote areas of the country. Government spending on education is to certify that all Ghanaians of school-going age enjoys the quality and affordable education. However, these practices may be hindered by the activities of selfish and cruel officials who have the bargaining power to channel resources towards their advantage at the expense of the poor majority. The police service mandated to maintain law and order may be bought and manipulated by a few with political power and the bargaining right to act in their favours. Lastly, with regards to employment, people from wealthy homes have the advantage of landing jobs that pays well than the vulnerable since the vulnerable do not know anyone to introduce them to the top management of the firm they desire to work in. The expected sign therefore on the consequence of government spending on the uneven dissemination of income can either be positive, where most of the resources are held by a few. Also, the effect can be negative if government expenses are channelled to the numerous subdivisions of the economy equitably.

Table 3: Consequence of government spending on income disparity

Indicator	Measurement	Source	Expected Sign
Government Spending	The Ratio of government consumption to GDP	World Bank national accounts data, and OECD National Accounts data files and World Bank Development Indicator Database (2016)	Uncertain

3.7.4 Gini

The Gini Coefficient is used as a substitute for income disparity and estimates the degree to which income sharing amongst homes in an economy diverges from a perfectly equal supply. Because of missing data associated with the Gini Coefficient, the index was computed by the author using linear interpolation to estimate the missing data. Earlier International Monetary Fund studies revealed that uneven dissemination of income which is estimated by the Gini Coefficient with 1 indicating perfect inequality and 0 indicating perfect equality adversely affects sustainability and development (Berg & Ostry, 2011). This can fuel political instability and make it hard for individuals to finance the education of their children. Consequently, efficacy could be lesser than it would have been in a neutral ecosphere (Stiglitz, 2012). Additionally, Corak (2013) found that countries with their income disparity being high tend to have low flexibility between generations, where the parent's earning is a significant determining factor of the remunerations for their children.

Table 4: Gini coefficient

Indicator	Measurement	Source
Income Inequality	Annual Gini Coefficient estimate	World Bank, Development Research Group (2016) and author's calculation using linear interpolation.

3.7.5 Manufacturing Value Added

Manufacturing Value Added is used as a substitution for the modern sector and is measured by annual value-added as a ratio of GDP. The manufacturing industry in Ghana includes, but not limited to Volta Aluminium Company (Valco) smelter, Sawmills, and Timber

processing plants, Cocoa Processing Plants, Cement manufacturing companies, Oil Refinery, and vehicle assembly plants. Bartlesman and Gray (1996) defined manufacturing as an outlet of trade and manufacture, centred on the processing, construction or preparation of goods from raw materials and commodities. Quartey and Kayanula (2000) also defined manufacturing as the procedure of transforming raw materials into finished products. Let's take for instance the vehicle assembly plant that employs a significant number of indigenes. As a result of technological advancement, the company might decide to employ more skilled personnel with the technical know-how to man activities at the assembly plant at the expense of the unskilled personnel. Due to the nature of work, more skilled personnel will be employed and paid well to the detriment of the unskilled personnel. These skilled personnel will be able to educate their kids more than unskilled personnel. The Statistical Service of Ghana survey has designated as disturbing the degree with which untrained people are forced out of the work particularly the manufacturing sub-sector. Bestowing to the survey, a sum of 3,240 untrained works vanished between 2014 and 2015, with the Upper West and Northern region recording the uppermost job loss. The information disclosed that a total of 207,931 jobs were created, but only 27,931 occupations were discovered in the amateurish labour market amid 2014 and 2015. As a result, the author expects the effect of manufacturing value-added on income disparity to be positive.

Table 5: Consequence of manufacturing value-added to income disparity

Indicator	Measurement	Source	Expected sign
Manufacturing Value added	Annual value added (% of GDP)	World Bank national accounts data, and OECD National Accounts data files and World Bank Development Indicator (2016)	Positive

3.7.6 GDP per capita

GDP per capita is a substitution for the growing economy and estimated as a Ratio of total GDP to the total population. Empirical studies on the impact of income disparity on GDP per capita have shown negative, inconclusive and positive effects. Empirically, the proposal that income disparity appears to be related to lesser growth rates was developed by Persson and Tabellini (1994) and Alesina and Rodrik (1994). Using a set of facts accessible to them, both studies found that disparity of income had a significantly negative coefficient on growth regressions. A work by Benabou (1996) listed several other cross-country empirical investigations of this association and stated that most of the survey reached the same conclusion. Top income earners in the position of power are predominantly found in countries with high inequality of income. These income earners will use their political power to lobby for projects and prevent the equitable distribution of resources. Aghion, Caroli and Garcia-Penalosa (1999) contend that in the incidence of capital market imperfections, the disparity of income is detrimental for economic growth. An imperfection

in the market deters the vulnerable from educating themselves and their kids. It also prevents them from establishing a business and paying for insurance packages.

Empirically, Forbes (2000) found a positive and statistically significant connexion amid income disparity and short and long-run economic expansion. Others have reverberated her concerns and warned against an untimely acceptance of the opposite association amid income disparity and growth as a new stylized fact of a growing economy. Nevertheless, the econometric problems that appear to affect the negative association in the new data set seem to be explicit to disparity variables well-defined in the income space. Deininger and Squire themselves discover that the negative coefficient on income disparity in their growth regression becomes statistically inconsequential only when a series for asset disparity (the Gini coefficient for land ownership) is presented. Birdsall and Londono (1997) examine a comparable association for other assets significantly imperative for the deprived, such as human capital. Using a subset of the Deininger-Squire database, they achieve that income disparity in the dissemination of land and human capital has a clear negative effect on economic development and the outcomes are almost double as great for the indigent as the populace. The empirical subject is not established. Yet, it would be reasonable to echo the present state of the argument as follow: while income disparity may not openly disturb a growing economy, *ceteris paribus*, it does substitute for more fundamental disparities of riches. When estimates for those are incorporated, there appears to be a statistically substantial negative association between the disparity of income and growing economy. The consequence of GDP per capita as a substitute for a growing economy on income disparity is expected by the author to be positive.

Table 6: Consequence of GDP per capita on income disparity

Indicator	Measurement	Source	Expected Sign
GDP per capita	GDP/Population	World Bank national accounts data, and OECD National Accounts data files and World Bank Development Indicator (2016)	Positive

3.7.7 Trade

Trade as a proxy for globalization is measured as the summation of export and import of products and services as a fraction of GDP. Trade and investment integration increase the magnitude of the market access to local businesses as well as driving potential value chain with which they can tie up their inventions as it drives productivity and innovation. Trade makes a substantial contribution to the reduction in poverty, helping to unleash the potentials of the private sector to create jobs. Trade on its own does not lead to realization. It is the competitiveness of the economy that defines their levels of productivity. Trade has been an engine of development in a lot of regions by encouraging competitiveness and augmenting efficacy. Nevertheless, trade and economic flows amid countries, partially aided by technological improvements, are normally regarded as influencing disparity of income. In developed economies, the capacity of businesses to accept work saving technologies has been named as a significant force in reducing manufacturing and increasing skill premium (Feenstra & Hanson, 1999). It was also found that international trade contributes to skill advancement and upsurges in the skilled-unskilled income gap. Trade can have a mixed

effect on the incomes of untrained labour in developed nations. It increases the expertise premium but can also raise real incomes by sinking prices (Munch & Skaksen, 2009). The author expects the consequence of trade on income disparity to have a positive effect.

Table 7: Consequence of trade on income disparity

Indicator	Measurement	Source	Expected Sign
Trade	Export+ Import /GDP	World Bank national accounts data, and OECD National Accounts data files and World Bank Development Indicator (2016)	Positive

3.7.8 Financial Instability

Financial instability is used as a proxy for systemic banking crisis and is measured by taking the absolute value of the residuals obtained by regressing domestic credit to the private sector on its lagged value and a time trend. According to Caprio and Klingebiel (1999), Ghana witnessed an instability of the financial sector from 1982 to 1989 when seven out of eleven audited banks were declared bankrupt and the rural banking sector was also affected. In 1997, nonperforming loans increased abruptly from 16 percent to 27 percent. Two public commercial banks that accounted for 34 percent of the market were in bad shape. Three banks, accounting for 4 percent of deposits were confirmed bankrupt. The financial permanence report published by the central bank of Ghana also indicated that as of July 2016, private sector nonperforming loans were 85.8 percent while that of the public sector was 14.2 percent. Nkusu (2011), in investigating the link between nonperforming loans and

its macroeconomic impact finds that nonperforming loans are a precursor of crippling macroeconomic performance. Zhang, Wang and Qu (2012) found proof supporting the notion that an economy in which its commercial bank is well-developed experience a high level of economic growth. Additionally, an ill-developed banking system could be a prescription for increased penury and slow economic development. As the mainstay of the financial system in many countries in Africa, it could be a parsimoniously crippling and a catastrophic to have banking system failure under the weight of high echelons of nonperforming loans. High echelons of nonperforming credits have been considered as one of the main reasons for high rate of interest spread which affects firms and individuals in Africa (Were & Wambua, 2014). The author, therefore, expects the consequence of financial instability on income disparity to be positive.

Table 8: Consequence of financial instability on income disparity

Indicator	Measurement	Source	Expected Sign
Financial Instability	an index which is the absolute value of residuals taken from the trend	World Bank, Development Research Group (2016) and author's calculation using information from Jeanneney and Kpodar (2011).	Positive

3.8 Data Analyses

All statistical estimations and analyses are carried out using Eviews econometrics packages.

The data readers can replicate the results shown in section four.

CHAPTER FOUR

RESULTS AND DELIBERATIONS

4.1 Introduction

The motivation behind this research is to find out how financial development can disturb uneven income distribution in Ghana using an ARDL approach and if there is a U-shaped inverted hypothesis. The results from the ADF test, the summary statistics of the series, the correlation matrix, the Unrestricted Error Correction Method and finally the diagnostic test are presented and discussed in this chapter.

4.2 Empirical Results

4.2.1 Unit Root Estimation at Level and 1st Difference

The time series unit root test is used to examine the stationary properties of the data.

Table 4.2.1 Augmented Dickey-Fuller

	LEVEL		1ST DIFFERENCE	
	CONSTANT	CONST & TREND	CONSTANT	CONST & TREND
	<i>t</i> -Statistic (<i>p</i> -value)	<i>t</i> -Statistic (<i>p</i> -value)	<i>t</i> -Statistic (<i>p</i> -value)	<i>t</i> -Statistic (<i>p</i> -value)
LFD	-2.3170 (0.17)	-2.3503 (0.40)	-6.4168 (0.00)	-6.3929 (0.00)
LGDP	0.5847 (0.99)	-0.7341 (0.96)	-4.0039 (0.00)	-5.3643 (0.00)
LGINI	-1.8240 (0.36)	-1.5641 (0.79)	-6.6785 (0.00)	-6.7701 (0.00)
LGS	-1.5578 (0.49)	-2.6255 (0.27)	-5.1201 (0.00)	-5.2794 (0.00)
LINF	-3.3083 (0.20)	-4.3147 (0.01)	-4.4078 (0.00)	-4.2974 (0.01)
LM	-3.2189 (0.03)	-3.1674 (0.11)	-2.8776 (0.00)	-2.6396 (0.27)
LTR	-0.9380 (0.77)	-2.6904 (0.25)	-4.6832 (0.00)	-4.6654 (0.00)
FINS	-5.6388(0.00)	-5.5562 (0.00)	-6.5961 (0.00)	-6.4984 (0.00)

Source: Computations from research data, 2016.

The check for unit root is to guarantee that not a bit of the sequence is integrated at $I(2)$ or higher. The outcomes of the Augmented Dickey-Fuller unit root test that was established by Dickey and Fuller (1981) are reported in Table 4.1. The results at level show that the log of manufacturing (LM) and financial instability (FINS) are stationary at constant, but the log of financial development (LFD), log of GDP per capita (LGDP), log of Gini index (LGini), log of Government spending (LGS), and log of Inflation (LINF) and the natural log of Trade (LTR) contain unit root at level. Moreover, the log of inflation (LINF) and financial instability (FINS) are also stationary at constant and trend, but the log of financial development (LFD), log of GDP per capita (LGDP), log of Gini coefficient (LGini), log of

Government Spending (LGS), log of Manufacturing value added (LM) and the natural log of Trade (LTR) contain unit root at constant and trend. However, all variables were first differenced stationary, $I(1)$.

4.2.2 Summary statistics

Synopsis information of the series used in approximating the finance-inequality connexion from a period of 1970 to 2012 is presented in the table below. Table 4.2 demonstrates intensely these data.

Table 4.2.2 Descriptive Statistics

	FD	FINS	GDP	GINI	GS	INF	M	TR
Mean	25.94	0.12	447.25	41.35	11.37	32.32	9.68	54.97
Maximum	39.30	0.35	722.94	47.96	20.89	122.87	15.54	116.05
Minimum	16.38	0.01	320.77	32.70	5.86	8.73	3.73	6.32
Std. Dev.	5.81	0.09	88.79	4.52	2.55	28.85	2.31	30.06
Observations	42	41	42	42	42	42	42	42

Source: Computations from research data, 2016.

Table 4.2 presents data on the mean, the maximum, the minimum, the standard deviation and the number of observations from 1970 to 2012. Financial development (FD) has an average of 25.94 and a standard deviation of 5.81. This indicates that on average, loans delivered by financial institutions to the private sector on an average is 25.94% of GDP with low variations among them representing that the data points tend to be very close to the mean. This implies that loan to the private sector on an average is high and will enable the private sector to operate their business activities without any difficulty. The Cost of doing business in Ghana is quite high and with the percentage of credit on an average apportioned to the private sector by the banking sector, it will enable these institutions to overcome

challenges concerning overhead cost. Financial development (FD) has a minimum of 16.38 and a maximum of 39.30. This clearly shows that the domestic loan to the private sector as a fraction of GDP ranges from 16.38% to 39.30% across the study period (1970 to 2012).

Financial instability (FINS) has an average of 0.12 and a standard deviation of 0.09. This implies that on an average, shudders to the sector hampering the flow of information to enable the bank to carry out its day to day activity is 0.12 with a low variation of 0.09 among them signifying that the data points tend to be very close to the mean. This implies that financial sector activities can be interrupted by financial instability which might make it difficult for the sector to maximize profit. The total influence of a one standard deviation increment in financial instability (0.09) will result in a 35% fall in the average domestic loan to the private sector. Financial instability (FINS) has a minimum of 0.01 and a maximum of 0.35 which points to the undeniable connexion amid financial development and financial instability.

GDP per capita has an average of 447.25 and a standard deviation of 88.79. This means that on an average, the value added by all inhabitant in the economy to total population is 447.25 with a low variation of 88.79. This implies that on average, the standard of living is improving and growth in the economy will boost investment and help in the eradication of poverty. GDP per capita has a minimum of 320.77 and a maximum of 722.94. This suggests that GDP per capita ranges from 320.77 to 722.94 across the period (1970 to 2012).

The Gini index is the disproportional dissemination of income amongst persons which sorts from 0 to 1. With 0 signifying perfect equality and 1 signifying perfect inequality. The Gini index has an average of 41.35 and a standard deviation of 4.52. This indicates that on an average, the uneven dissemination of income among individual is increasing with a mean

of 41.35 and low variations among them signifying that the data points tend to be very close to the mean. As the gap between the affluent and the deprived widens, it will be very difficult for the poor to invest in the schooling of their children. An educated mind is a healthy body and a healthy body is a prosperous economy. The Gini index has a maximum of 47.96 and a minimum of 32.70. This implies that the Gini index ranges from 32.70 % to 47.96% across the period (1970 to 2012).

Government spending has an average of 11.37 and a standard deviation of 2.55. This signifies that on an average of 11.37, the government of the country is spending that much on expenses for the acquisition of goods and services and has a low variance of 2.55 indicating that the data point tends to be very close to the mean. Government minimum and maximum spending range from 5.86 % to 20.89% across the period from 1970 to 2012. With the government's maximum spending of 20.89% to the GDP reflects how high the expenditure of the government is on national defence and security. Without the necessary tools and equipment to protect its citizenry and fight against crime, the vulnerable will always be the most affected when the country is unsafe to live in.

Inflation estimated by the consumer price index has a mean of 32.32 and a standard deviation of 28.85. This indicates that on average, the annual fraction change in the cost to the average consumer in the purchase of goods and services is 32.32 with a high variation of 28.85 that specifies that the data points are spread out over a large range of values. As the rate of inflation increases, it will be beneficial to the vulnerable. Loans borrowed from financial institutions will decrease in value making it easier for the poor to repay their loans. Inflation has a minimum of 8.73 % and a maximum of 122.87 % across the period from 1970 to 2012. This reflects that consumers will have to pay more for commodities as a result of currency depreciation because the sellers, on the other hand, will cushion themselves

against the depreciation of the currency and will be left with no option than to pass on these high prices onto the consumer. As a result, the price of a commodity like orange will shoot up making it difficult for the average consumer to buy.

The manufacturing value added has an average of 9.68 and a standard deviation of 2.31. This indicates that on average, the annual value-added as a share of GDP shows how low the manufacturing sector contributes to economic growth. The manufacturing sector has been coupled with a lot of challenges such as competition from imported goods, excessive taxes, energy crisis, and utility pricing and high-interest rates making it difficult for the sector to grow. Hence, contributing very low economic growth. The manufacturing value added has a minimum of 3.73 and a maximum of 15.54. This clearly shows that the annual rate of manufacturing value-added as a fraction of GDP ranges from 3.73% to 15.54% across the study period (1970 to 2012).

Finally, trade has an average of 54.97 and a standard deviation of 30.06. This indicates that on an average of 54.97, the contribution of trade to Gross Domestic Product is high and has a high variance of 30.06 which specifies that the data points are spread out over a large range of values. With this, trade plays an important role in breaking down domestic monopolies and also leads to an increase in employment. Trade has a minimum of 6.32 and a maximum of 116.05. This clearly shows that trade ranges from 6.32% to 116.05% across the study period.

4.2.3 Correlation Matrix

The relationship and direction of each series are shown in table 4.2.3.

Table 4.2.3 Correlation Matrix

	LGINI	LFD	FINS	LGDP	LGS	LINF	LM	LTR
LGINI	1.00							
LFD	0.51	1.00						
FINS	0.13	0.66	1.00					
LGDP	0.37	0.46	0.13	1.00				
LGS	-0.01	0.35	0.23	0.65	1.00			
LINF	-0.02	-0.14	-0.17	-0.56	-0.38	1.00		
LM	0.00	0.25	0.22	-0.05	0.37	-0.07	1.00	
LTR	-0.26	0.34	0.19	0.58	0.58	-0.56	0.35	1.00

Source: Computations from research data, 2016.

The correlation among the variables used has been reported in table 4.3. The correlation is used to estimate the degree of linear connexion among these series. The value of the connexion coefficient is between -1 and +1. Where -1 designates a perfect negative linear connexion and a +1 points to a perfect positive linear connexion. The linear connexion among the log of financial development (LFD), financial instability (FINS), the log of gross domestic product per capita (LGDP) and the log of Gini coefficient (LGINI) is positive. This indicates the confirmation of a positive linear connexion among the series. This implies that as LFD, FINS, LGDP increase, LGINI also increases by the same magnitude respectively. Additionally, the linear relationship among the log of government spending (LGS), the log of inflation (LINF), the log of trade (LTR) and the log of Gini coefficient (LGINI) is negative. This implies that as LGS, LINF, and LTR increases, the Gini coefficient (LGINI) decreases and when LGS, LINF, and LTR decreases, the Gini

coefficient (LGINI) increases by the same magnitude. However, the correlation coefficient amid the log of manufacturing value added (LM) and the log of Gini (LGINI) is zero. This specifies that there is no linear connexion between the two series.

Furthermore, the linear relationship among financial instability (FINS), the log of gross domestic product per capita (LGDP), the log of government spending (LGS), the log of manufacturing value added (LM), the log of trade (LTR) and the log of financial development (LFD) is positive. This specifies the presence of a positive linear connexion among the variables. This indicates that as FINS, LGDP, LGS, LM, and LTR increase, LFD also increases by the same magnitude respectively. However, the connexion amid the log of inflation (LINF) and the log of financial development (LFD) is negative. This indicates that as LINF increases, LFD decreases by the same magnitude and if LINF decreases, LFD increases by the same magnitude.

Additionally, the log of gross domestic product per capita (LGDP), the log of government spending (LGS), the log of manufacturing value added (LM), the log of Trade (LTR) and financial instability (FINS) are positive. This indicates that as LGDP, LGS, LM and LTR increases, FINS also increases by the same magnitude respectively. However, the linear relationship between the log of inflation (LINF) and financial instability (FINS) is negative. This infers that an upsurge in LINF results in a decrease in FINS and also a reduction in LINF pointers to a rise in FINS by the same magnitude.

Moreover, the linear relationship among the log of government spending (LGS), the log of trade (LTR) and the log of gross domestic product (LGDP) is positive. This designates that an upsurge in LGS and LTR lead to a proportionate increase in LGDP respectively. However, the linear relationship among the log of inflation (LINF), the log of manufacturing

value added (LM) and the log of gross domestic product per capita (LGDP) is negative indicating that a rise in LINF and LM result in a decline in LGDP and also a decrease in LINF and LM lead to an increase of LGDP by the same magnitude.

Also, the linear connexion amid the log of inflation (LINF) and the log of government spending (LGS) is negative. This indicates that a rise in LINF results in a decline in LGS and a decline in LINF leads to an increase in LGS by the same magnitude. However, the linear relationship among the log of manufacturing value added (LM), the log of trade (LTR) and the log of government spending (LGS) is positive. This suggests that an upsurge in LTR and LM lead to a proportional increase in LGS.

Last but not least, the linear relationship among the log of manufacturing value added (LM), the log of trade (LTR) and the log of inflation (LINF) is negative. This designates that a rise in LM and LTR result in a decrease of LINF by the same magnitude and a decrease of LM and LTR leads to an increase of LINF by the same magnitude respectively. Finally, the connexion amid the log of trade (LTR) and the log of manufacturing (LM) is positive.

4.2.4 The test for an inverted U-shaped hypothesis

The test for the U-shaped inverted hypothesis is revealed in table 4.2.4

Table 4.2.4 Inverted U-shaped hypothesis

Dependent Variable: GINI	Coefficient	Std. Error	t-Statistic	p-value
LFD	-3.711	1.479	-2.509	0.041
LFD ²	0.602	0.234	2.574	0.037
LGDP	0.581	0.396	1.465	0.186
FINS	0.001	0.102	0.012	0.991
LGS	-0.253	0.063	-4.001	0.005
LINF	-0.076	0.019	-3.918	0.006
LM	0.251	0.121	2.072	0.077
LTR	-0.093	0.075	-1.240	0.255
R-squared	0.98		F-statistic	12.92
Adjusted R-squared	0.91		Probability(F-statistic)	0.00

Source: Computations from research data, 2016.

According to Clarke et al. (2003), when the squared financial development is significant, we hold the nonlinear theory. Nonetheless, if financial development squared is not significant and then financial development without a square is significant, we hold the linear theory. However, financial development squared and financial development are both significant at 5 percent level. Therefore, the researcher used a logarithm derivative to find out whether the result wires the U-shaped inverted assumption as suggested by Greenwood and Jovanovich (1990). To gain understanding into the overall influence of the variable with a significant quadratic term, the researcher took a logarithm derivative of log Gini

concerning the log of financial development. Using $\ln FD$ and $\ln FD - squared$,

$\ln Gini = \beta_1 \ln FD + 2\beta_2 \ln FD$, where β_1 and β_2 are the estimated coefficient.

The first-order derivative gives us, $\frac{\partial(\ln Gini)}{\partial(\ln FD)} : \frac{1}{Gini} \cdot \frac{\partial Gini}{\partial \ln FD} = \frac{\beta_1}{\ln FD} + \frac{2\beta_2}{\ln FD}$, substituting

the estimated coefficient of FD and $FD - squared$ which are -3.711 and 0.602 respectively

into $\frac{\partial(\ln Gini)}{\partial(\ln FD)}$, the researcher had -3.108. The second-order derivative gives us.

$\frac{\partial^2(\ln Gini)}{\partial(\ln FD)^2} : \frac{\partial Gini}{\partial \ln FD} = \frac{\beta_1 Gini}{\ln FD} + \frac{2\beta_2 Gini}{\ln FD}$. Substituting -3.108 into $\frac{\partial^2(\ln Gini)}{\partial(\ln FD)^2}$, the

researcher had 7.79.

This confirms a positive correlation between financial sector growth and the disparity of income and lends support for the disparity widening theory that was developed by Clarke et al. (2006) and therefore, failed to support the U-shaped inverted theory. This specifies that irrespective of financial development, financial expansion will be advantageous to the affluent and the well-connected more than the vulnerable. This is because the affluent have collateral security to offer and are more likely to reimburse their loans of which the vulnerable might not be able to do so and as a result, the vulnerable find it problematic to access funds even when the markets are financially sound, creating an inconvenient atmosphere for the deprived to invest in education or start a new business.

Similar results were found by Batuo et al. (2010), J. Sebastian and W. Sebastian (2011), Liang (2008), Ling-Zheng and Xia-Hai (2012), Shahbaz and Islam (2011) and lastly Tan and Law (2012). However Clarke et al. (2006), Kim and Lin (2011), Nikoloski (2013), Rehman et al. (2008) and Rotheli (2011) found evidence in support of the U-shaped inverted

theory which states that at the initial stage of financial growth, income disparity worsens, but disparity improves as financial development matures.

4.2.5 ARDL Results - Unrestricted Error Correction Method

The Unrestricted Error Correction Technique incorporates the long-run with the short-run without losing any data for the long-run. The selection of the optimal lag length is significant in estimating the ARDL model. The test runs over 3 optimal lag length to select the ideal lag length. The length of the lag was carefully chosen by the Akaike Information Criterion.

Table 4.2.5 Unrestricted Error Correction Method

Model selection method: Akaike info criterion (AIC)				
Dynamic regressors (3 lags, automatic): LFD LGDP LGS FINS LINF LM LTR				
Selected Model: ARDL(3, 2, 3, 0, 2, 3, 3, 3)				
White heteroskedasticity-consistent standard errors & covariance				
Variable	Coefficient	Std. Error	t-Statistic	Prob.*
LGINI(-1)	-0.160092	0.288122	-0.555638	0.5896
LGINI(-2)	-0.105069	0.124042	-0.847045	0.4150
LGINI(-3)	0.720571	0.329009	2.190129	0.0510
LFD	-0.937360	0.496716	-1.887115	0.0858
LFD(-1)	-0.018218	0.371016	-0.049103	0.9617
LFD(-2)	0.647369	0.276974	2.337295	0.0394
LGDP	0.296095	0.369752	0.800794	0.4402
LGDP(-1)	0.037724	0.313805	0.120215	0.9065
LGDP(-2)	-0.667070	0.378255	-1.763546	0.1055
LGDP(-3)	0.833522	0.370927	2.247131	0.0461
LGS	-0.215258	0.058972	-3.650207	0.0038
FINS	0.041170	0.020321	2.025934	0.0677
FINS(-1)	0.032144	0.013553	2.371728	0.0370
FINS(-2)	-0.006234	0.003330	-1.872304	0.0880
LINF	-0.069125	0.022213	-3.111908	0.0099
LINF(-1)	-0.024453	0.021355	-1.145066	0.2765
LINF(-2)	0.025650	0.026718	0.960025	0.3577
LINF(-3)	0.097380	0.037223	2.616146	0.0240
LM	0.110757	0.103091	1.074358	0.3057
LM(-1)	-0.052575	0.133747	-0.393089	0.7018
LM(-2)	0.088458	0.073830	1.198131	0.2560
LM(-3)	0.206641	0.093453	2.211181	0.0491
LTR	-0.010047	0.065208	-0.154082	0.8803
LTR(-1)	0.004296	0.090385	0.047534	0.9629
LTR(-2)	0.092641	0.125487	0.738255	0.4758
LTR(-3)	-0.103904	0.076866	-1.351757	0.2036
R-squared	0.968536	Mean dependent variance		3.704430
Adjusted R-squared	0.891308	S.D. dependent variance		0.108493
S.E. of regression	0.035769	Akaike info criterion		-3.653265
Sum squared residual	0.014073	Schwarz criterion		-2.458913
Log likelihood	99.23866	Hannan-Quinn criterion		-3.224742
F-statistic	12.54115	Durbin-Watson stat		2.804443
Probability(F-statistic)	0.000051			

Source: Computations from research data, 2016.

The outcomes from the series for the long and the short-run are discussed accordingly.

The significant level for all series is at 5 percent, $[\alpha \leq 0.05]$. The regression coefficient for financial development is found at -0.94, but insignificant $[p = 0.08, \alpha > 0.05]$. By implication, there is no evidence that financial development (FD) can narrow the gap between the affluent and the deprived in Ghana. This indicates that the ease in obtaining finance by the poor to invest in education and other projects to eradicate income disparity cannot be achieved by the growth of the sector. The benefits of financial expansion can only be felt by the deprived if the region has stretched a certain verge of development. Under this level, financial sector development offsets income disparity. Similar results were found by Law and Tan (2009) and Fowowe and Abidoye (2013). The study also uncovered that the growth of the financial sector for the past year was found to be -0.02, but insignificant at 5 percent $[p = 0.96, \alpha > 0.05]$. By implication, for the past year, there is no evidence that financial expansion can bridge the gap between the affluent and the deprived. Finally, the study also found that for the past two years, the outcome of financial sector growth was found to be 0.65 and was significant at 5 percent $[p = 0.03, \alpha < 0.05]$. By implication, a 1 percent rise of financial expansion worsens income disparity by 65 percent. This indicates that the income of the nation is enjoyed by just a few. The high disparity of income suggests tilted partisan contribution that permits the partisan elite to safeguard their rents by restraining financial access through direct control or regulatory capture of the financial framework and as a result overwhelming contention and entry (Claessens & Perotti, 2007).

The regression coefficient for Gross Domestic Product per capita is found at 0.30, but insignificant at 5 percent level $[p = 0.44, \alpha > 0.05]$. By implication, per capita GDP does not influence the outcome of income disparity in the long-run. Similar results were found

by Shahbaz and Islam (2011), but contrary to the study by Barro (2000) who reported a negative effect of per capita GDP on the disparity of income in regions with a low level of income. The study also revealed that per capita GDP for the past year was found to be 0.04, but insignificant at 5 percent significant level [$p = 0.90, \alpha > 0.05$]. By implication, per capita GDP has no evidence on income disparity for the past year period. Additionally, for the past two years, the study revealed that per capita GDP has a regression coefficient of -0.67, but insignificant at 5 percent significant level [$p = 0.10, \alpha > 0.05$]. By implication, Gross Domestic Product per capita cannot influence the outcome of income disparity. Finally, the regression coefficient of GDP per capita for the past three years was established to be 0.83 and significant at 5 percent level [$p = 0.04, \alpha < 0.05$]. By implication, a 1 percent rise in Gross Domestic Product per capita worsens income disparity by 83 percent. This means that the Gross Domestic Product per capita does not benefit the poor, but rather it is the rich that benefits from the growth of the economy. Similar results were found in support of Forbes (2000) research that found a positive and statistically substantial consequence of GDP per capita on income disparity.

The regression coefficient for Government Spending is found at -0.22 and is substantial at the 5 percent level [$p = 0.00, \alpha < 0.05$]. By implication, a 1 percent rise in Government Spending improves income disparity by 22 percent. This indicates that an equitable distribution of resources by the government will ensure that the vulnerable get access to the public pie equitably. Employment into the public sector will not be based on who you know but on merits. The health care delivery system will be made accessible to all irrespective of gender or political colour and access to education will be affordable so that the poor will be able to educate their kids.

The regression coefficient for financial instability is found at 0.04, but insignificant at a 5 percent level of significant [$p = 0.06$, $\alpha > 0.05$]. By implication, the influence of instability in the financial sector in the long-run does not influence income disparity. Similar results were found by Akhter, Y. Lui and K. Lui (2010) and Shahbaz and Islam (2011). Furthermore, the regression coefficient of financial instability for the past one year period is found at 0.03 and is significant at 5 percent level [$p = 0.03$, $\alpha < 0.05$]. By implication, a 1 percent increase in financial instability deteriorates income disparity by 30 percent. Financial instability is related to high levels of nonperforming loans leading to high-interest rate spreads which influence firms and people in Africa (Were & Wambua, 2014). The spread in deposit and lending rate borders on the competence of the banking system in playing their intermediation role. If deposit rates are regarded too low, depositors may move their reserves into other securities, in so doing depriving the banking system of funds that it would have used to carry out its operations. Also, if lending rates are regarded too high, genuine borrowers may be disheartened from taking loans for projects with high returns. In either case, the consequence is that financial markets and the economy as a whole may not work well which will trickle down to the poor who will not be able to have access to a loan to undertake developmental projects. Finally, the regression coefficient of financial instability for the past two years is found at -0.01, but insignificant at the 5 percent significant level [$p = 0.08$, $\alpha > 0.05$]. By implication, for lag two of financial instability, the effect does not influence income disparity.

The regression coefficient for inflation is found at -0.07 and is significant at 5 percent [$p = 0.01$, $\alpha < 0.05$]. By implication, a 1 percent rise in inflation improves income disparity by 7 percent. This indicates that a rise in the level of inflation helps the vulnerable to expand or start a new business and also to repay their loans since the value of the currency

will be depreciated. The vulnerable will be able to put their children into school. Export becomes cheaper and an increase in export would indicate that foreign exchange would be simply accessible in the country and would result in a subsequent enhancement in the economy, which would trickle down to the vulnerable. Similar results were found by Bittencourt (2006) and Shahbaz and Islam (2011). The regression coefficient for the past one year of inflation is found at -0.02, but insignificant at the 5 percent significant level [$p = 0.27, \alpha > 0.05$]. The regression coefficient for the past two years of inflation is found at 0.03, but also insignificant at the 5 percent significant level [$p = 0.35, \alpha > 0.05$]. By implication, lag one and lag two have no evidence in influencing the outcome of income disparity in the country. The regression coefficient for the past three year period of inflation is found at 0.10 percent and also significant at the 5 percent significant level [$p = 0.02, \alpha < 0.05$]. By implication, a 1 percent rise in inflation worsens income disparity by 10 percent. This is also an indication that when the rate of inflation increases, financial institutions set their loaning rates high to safeguard the real earnings on their credits. The poor are hard hit than the affluent since the last have superior access to a financial instrument that makes it possible for them to cushion themselves against the inflationary period. Similar results were found by Agénor (2003), C. Romer and D. Romer (1998) and Easterly and Fisher (2001).

The regression coefficient for manufacturing value-added is found at 0.11, but insignificant at the 5 percent significant level [$p = 0.30, \alpha > 0.05$]. By implication, manufacturing value-added does not have any influence on income disparity. Despite the regression coefficient is positive, it has no evidence of increasing income disparity. In the long-run, the input of manufacturing value added as a fraction of GDP is not enough to effect any changes to income disparity. The regression coefficient for the past one year of manufacturing value added is found at -0.05, but its effect is not significant at the 5 percent significant

level [$p = 0.70$, $\alpha > 0.05$]. By implication, manufacturing value-added for the past one year does not influence the outcome of income disparity in any way. The regression coefficient for manufacturing value-added for the past two years is found at 0.09, but insignificant at the 5 percent significant level [$p = 0.25$, $\alpha > 0.05$]. This is an indication that the manufacturing value-added for the past two years does not influence the outcome of income disparity. The regression coefficient for manufacturing value-added for the past three years is found at 0.21 and is significant at the 5 percent significant level [$p = 0.04$, $\alpha < 0.05$]. By implication, a 1 percent rise in manufacturing value-added worsens income disparity by 21 percent. This is an indication that the manufacturing sector of the country does not benefit the vulnerable. This sector requires skilled personnel with the technical know-how to work and man key activities in the sector. The introduction of sophisticated machines into the manufacturing sector makes it difficult for the vulnerable to fit in, resulting in the worsening of income disparity.

The regression coefficient for trade is found at -0.01, but it is insignificant at 5 percent [$p = 0.88$, $\alpha > 0.05$]. By implication, despite the connexion amid trade and income disparity being negative, the contribution of trade to GDP is not enough to effect any significant change in income disparity. The regression coefficient for the past one year period of trade is 0.004, but insignificant at the 5 percent significant level [$p = 0.96$, $\alpha > 0.05$]. This is an indication that for the past year, trade does not contribute meaningfully to the increment in income disparity. The regression coefficient for the past two year period of trade is found at 0.10, but insignificant at the 5 percent significant level [$p = 0.47$, $\alpha > 0.05$]. Despite the positive connexion amid trade and income disparity, the contribution to Gross Domestic Product is not enough to warrant any meaningful consequence. Finally, the regression coefficient of trade for the past three year period is found at -0.10, but

insignificant at the 5 percent significant level [$p = 0.20$, $\alpha > 0.05$]. By implication, despite the presence of a negative connexion amid trade and income disparity, its effect for the past three years is not significant in influencing any outcome on income disparity.

4.2.6 Diagnostic Tests

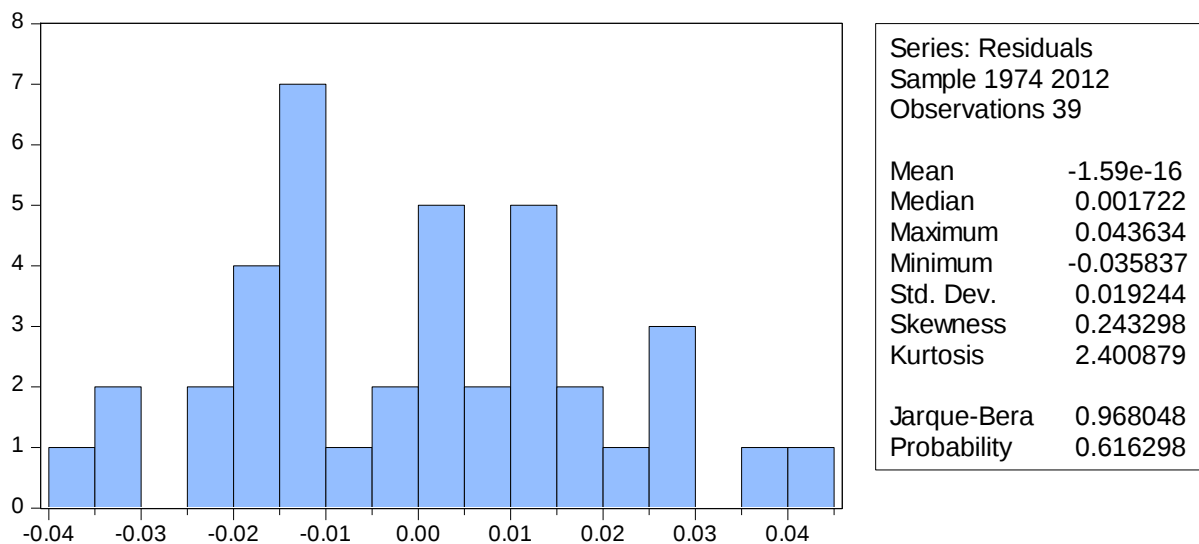
The outcomes of the diagnostic analysis are revealed in table 4.2.6a and 4.2.6b.

Table 4.2.6 a Serial Correlation and Heteroskedasticity Test

	<i>F</i> -statistic	<i>p</i> -value
Breusch-Godfrey Serial Correlation LM Test	3.91	0.06
Breusch-Pagan-Godfrey Heteroskedasticity Test	1.55	0.23

Source: Computations from research data, 2016.

Table 4.2.6 b Normality Test



Source: Computations from research data, 2016.

The above table presents the result of the diagnostic tests. The test for diagnostic is used to certify the arithmetical competence of the model. The null-theory is rejected if the value of likelihood is less than 0.05 significant levels. A p-value that is less than 0.05 shows that you can reject the null hypothesis. On the other hand, a large p-value commends that amendments in the predictor are not related to changes in the reaction. The test for diagnostic checks for serial correlation, heteroskedasticity, and normality of the residual term. All the tests reveal that the model is well specified. The serial correlation LM test has a p-value of 0.06 which implies that there is no serial correlation, hence the error term does not depend on each other. The p-value of the heteroskedasticity implies that there is no heteroskedasticity, and hence, the null hypothesis of homoskedasticity cannot be rejected, therefore, the variance of the error term is constant. The Jarque Bera statistics measure the normality of the residuals with a null hypothesis normally distributed. Since the p-value of the test statistic is 0.62 ($p > 0.05$), it implies that the residuals are normally disseminated.

4.3 Chapter Conclusion

This section concentrated on the bestowal of data results and the corresponding discussion where it was brought into being that financial development improves uneven dissemination of income, but its effect is insignificant. Additionally, instability in the financial sector on uneven distribution was found to be negative, but statistically inconsequential in the long-run. The approach used in estimating the long and short-run dynamic between the series was the Autoregressive Distributive Lag. This approach was selected because it does not necessitate all the factors to be incorporated at the first difference, unlike the Johansen framework. The ARDL approach is also appropriate if the series are integrated at the level or first difference.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The basis of this segment is to introduce the summary, conclusion, commendations and the future area for the research. The summary presents the problem, purpose, method used and the results. The conclusion also talks about the overall outcomes concerning the results and set to find out whether the objectives have been achieved. The recommendation also presents precise solutions to be executed by unambiguous bodies and lastly, the direction for prospect research.

5.2 Summary

Uneven dissemination of income has been a deterrent to growth, but financial expansion is understood to eradicate poverty, improve the distribution of income equitably and help in attaining the Millennium Development Goals. The 1991/1992, 1998/1999 and 2005/2006 study of the Ghana Living Standard indicates the upward trend of the Gini index over the period, increasing from 0.37 to 0.42 between 1992 and 2006. One troubling aspect of this increment is that it decreases the consequence of a growing economy on eradicating penury and in improving the distribution of resources equitably in Ghana over the years under cogitation. Additionally, a recent publication by Cooke et al. (2016) in the Ghana Poverty and Inequality Report indicates the rise of the Gini index from 37 percent in 1992 to 42.3 percent in 2013 as reported by the Ghana Statistical Service. This increment led to a situation in which the dissemination of income is enjoyed by the rich and the majority, who are the

poor wallows in abject poverty. This practice might lead to instability and misdemeanour if resources are unevenly shared. This poses a danger to the political firmness of the country. The study seeks to find out the consequence of the financial sector growth on unequal dissemination of income in Ghana using an ARDL approach. An Unrestricted Error Correction Technique was used in analysing the long and short-run effect of these variables. The methodology followed that of Clarke et al. (2003, 2006) to test for the existence of a U-shaped inverted theory by introducing a squared term of the financial development variable. All statistical estimations were carried out using Eviews econometric packages and the research followed a quantitative approach. The results of the Augmented Dickey-Fuller revealed that the log of Manufacturing (LM) and Financial Instability (FINS) were stationary at constant and the log of Financial Development (LFD), log of Gross Domestic Product per capita (LGDP), log of Gini index (LGINI), log of Government Spending (LGS), log of Inflation rate (LINF), and log of Trade (LTR) contained unit root at level. Also, log of Inflation (LINF) and Financial Instability were found to be stationary at constant and trend whiles log of Financial Development (LFD), log of Gross Domestic Product per capita (LGDP), log of Gini index (LGINI), log of Government Spending (LGS), log of Manufacturing (LM), and log of Trade (LTR) contain unit root at constant and trend, but all series were first differenced stationary, $I(1)$. The serial correlation LM test found no serial correlation and hence, the null hypothesis cannot be rejected. There were no heteroskedasticity and hence, the null hypothesis of homoscedasticity cannot be rejected. The Jarque Bera statistics also implied that the residuals were normally disseminated. The results also failed to support the U-shaped inverted hypothesis.

5.3 Conclusion

The study was to find out the effect of financial development on income disparity in Ghana using an Autoregressive Distributive Lag Approach from 1970 to 2012. The consequence of financial sector growth on unequal dissemination of income has received a lot of interest from finance experts as well as policymakers in recent times. The study adopted a time series econometric procedures and also used a nonlinear specification to test for the U-shaped inverted theory. An Unrestricted Error Correction Technique was adopted to analyze the long and short-run effect of these variables. The objectives of the study was to find out the effect of financial sector growth on income inequality in Ghana and also to assess the impact of financial instability on income disparity.

The results from the nonlinear specification revealed that the effect of financial development on income disparity in Ghana is positive which support Clarke et al. (2006) inequality widening theory. This is because financiers are greedy middlemen who serve only the interest of the rich and well connected. The result is also an indication that the financial system might channel money to the rich and well connected, who are able to offer collateral and who might be more likely to repay the loan, while excluding the poor. As a result, even as the financial sector develops, the poor remain unable to migrate to urban areas, invest in education or start a new business.

The empirical results revealed that financial development in the long-run cannot reduce income inequality. This is a symptom that the financial system in the country is not fully developed to the level where it can be able to eradicate income inequality. Furthermore, financial sector development in the short run worsens income disparity. Researchers such as Harris (2012) and Andersen, Sam and Trap (2012) go far to question the applicability of

the entire finance contributing-to-growth proposition from which the finance-inequality theory is derived from the African context. They argued that the existing empirical and theoretical foundations are too unbalanced to build any strong conclusions. This underlines the fact that there is much to unearth before we can positively assert that financial expansion improves even the dissemination of income. Additionally, it was revealed that financial instability in the long-run does not influence income disparity. Finally, financial instability in the short-run worsens income disparity by 30 percent. The objectives as set out by the researcher were therefore achieved.

5.4 Recommendations

The subsequent commendations have been proposed on the premise of these outcomes.

The study recommends the introduction of enabling policies to widen the inclusion of financial access. These consist of methods that target at plummeting intermediation charges. These can be accomplished through the strong competitiveness of the banking sector, allowing foreign access into the financial sector and a supple methodology to the implementation of creative financial products. As shown by current proof, predominantly in mobile banking. Technological advancements play an imperative piece in narrowing charges of intermediation in the usage of financial services. Though growing access to loans either directly or through special credit lines may be beneficial in the inclusion of poor households.

Secondly, the government must ensure that the affluent pay more tax than the deprived. A continuous taxation system reallocates fortune and income from those who have to those who do not have. Also, the tax system in Ghana is categorised by deductions, incentives,

and exceptions, making it hard to generate the required revenue. As a result, importance should be meted out to making sure that taxes fall on those who are capable to pay, such as the rich and large organizations.

Finally, the government can eliminate financial instability in the banking sector by paying attention to the problems associated with currency mismatch. Currency mismatch uncovers the economy to systemic risk. Currency mismatch arises when the legal responsibility of the country are denominated in foreign money while the inflows of funds are predominantly expressed in local currency. The fight against currency mismatch can be achieved by establishing an autonomous dues audit commission to analysis facts at large by the government and all creditors on how much money is payable, on what conditions and ways in which the money was to be disbursed.

5.5 Future Research Direction

Since financial sector development comprises the interaction of activities, it cannot be measured by one proxy. Future researchers can consider other proxies of financial expansion to analyse the underlying connexion amid financial sector growth and unequal distribution of income on a single African country. Additionally, the control variables should be increased to include primary school enrolments, since there has been an increment in literacy rate across most African countries.

Reference:

Adjetey, S.M A. (1978). The structure of the financial system in Ghana, *Research Memorandum*, Research Department. Bank of Ghana, Accra. Retrieved from <https://www.worldcat.org>.

Aghion, P., & Bolton, P. (1997). A Theory of Trickle-Down Growth and Development. *Review of Economic Studies*, 64, 151-172, volume 64, Issue 2, April 1997, Pages 151-172, <https://doi.org/10.2307/2971707>.

Aghion, P., Caroli, E., & Garcia-Penalosa, C. (1999). Inequality and Economic Growth: The Perspective of the New Growth Theories. *Journal of Economic Literature*. vol.37 (4), 1615-1660. Doi: 10.1257/jel.37.4.1615. <http://nrs.harvard.edu/urn-3:HUL.InstRepos:12502063>.

Agénor, P. R. (2003). Does Globalization Hurt the Poor? *Mimeo, the World Bank*, Washington, DC. International Economics and Economic Policy. Doi: 10.1007/s10368-003-0004-3.

Akhter, S., Lui, Y., & Lui, K. (2010). Cross Country Evidence on the Linkages between Financial Development and Poverty. *International Journal of Business Management*, 5, 1-19.

Alesina, A. & Rodrik, D. (1994). Distributive Politics and Economic Growth. *The Quarterly Journal of Economics*, 109: 465-489. <http://dx.doi.org/10.2307/2118470>. <http://nrs.harvard.edu/urn-3:HUL.InstRepos:4551798>.

- Alexander, W., Thomas, E., Baling, J. T., & Epoch, C. (1995). The adoption of indirect instruments on monetary policy. *Occasional Paper 26*. International Monetary Fund, Washington, DC.
- Allen, F., Otchere, I., & Senbet, L. W. (2011). African financial systems: A review. *Review of Development Finance*, 1: 79–113. Retrieved from <http://dx.doi.org/10.1016/j.rdf.2011.03.003>.
- Andersen, T. B., Sam, J., & Trap, F. (2012). The finance-growth thesis: A skeptical assessment. *Journal of African Economies*, 21, AERC Supplement 1, i57-i88.
- Ang, J. B. (2010). Finance and inequality: The case of India. *Southern Economic Journal*, 76(3), 738-761.
- Aryeetey, E. (1996). The formal financial sector in Ghana after the reforms. *Working Paper*, 86, Overseas Development Institute (ODI), London.
- Aryeetey, E. & Senbet, L. W. (2004). Essential financial market reforms in Africa. *Institute of Statistical, Social & Economic Research*. University of Ghana, Legon.
- Asongu, S. A. (2013). Investment and Inequality in Africa: which financial channels are good for the poor? *African Finance Journal*, 15(2), 43-65.
- Baah-Boateng, W. (2009). Gender Perspective of Labour Market Discrimination in Ghana. *An Unpublished Ph.D. Thesis*, Department of Economics, University of Ghana.

Bank of Ghana (2004). Cost of banking in Ghana. An empirical assessment and implication Policy Brief. *Research Department Bank of Ghana*.

Baliamoune-Lut, M. & Lutz, S.H. (2005). Rural-urban inequality in Africa: a panel study of the effects of trade liberalization and financial deepening. *Journal of African Development*, Vol. 57 No. 1, pp. 1-19.

Baligh, N. & Pirae, K. (2013). Financial development and income inequality relationship in Iran. *Middle-East Journal of Scientific Research*, Vol. 13, pp. 56-64.

Banerjee, A. V., & Newman, A. F. (1993). Occupational choice and the process of development. *Journal of political economy*, 101(2), 274-298.

Barro, R. J. (2000). Inequality and Growth in a Panel of Countries. *Journal of economic growth*, 5(1), 5-32.

Bartlesman, E., & Gray, W.B. (1996). The NBER manufacturing productivity database. *Technical Working Paper 205*. National Bureau of Economic Research, Cambridge, M.A.

Batuo, M.E., Guidi, F., & Mlambo, K. (2010). Financial development and income inequality: *Evidence from Africa countries*. *MPRA Paper No. 25658*. <http://mpa.ub.uni-muenchen.de/25658>.

Beck, T., Demirguc-Kunt, A., & Levine, R. (2004). Finance, Inequality and Poverty: Cross-country evidence. *Policy, Research Working Paper; no. WPS 3338*. Washington, DC: World Bank.

[http:// documents.worldbank.org/curated/en/824991468778185410/ Finance-inequality-and-poverty-cross-country-evidence](http://documents.worldbank.org/curated/en/824991468778185410/Finance-inequality-and-poverty-cross-country-evidence).

Beck, T., Demirgüç-Kunt, A., & Levine, R. (2007). Finance, inequality and the poor. *Journal of economic growth*, 12(1), 27-49.

Berg, A. & Ostry, J. D. (2011). Inequality and Unsustainable Growth: Two Sides of the Same Coin? *IMF Staff Discussion Note 11/08*. International Monetary Fund, Washington, DC.

Benabou, R. (1996). Inequality and Growth. In: Bernanke, B. and J. Rotemberg (eds., *NBER Macro Annual 1996*, MIT Press: Cambridge, MA): 11-76.

Bencivenga, V. R., & Smith, B. D. (1991). Financial intermediation and endogenous growth. *The Review of Economic Studies*, 58(2), 195-209.

Birdsall, N. & Londono, J. L. (1997). Asset Inequality Matters: An Assessment of the World Bank's Approach to Poverty Reduction. *American Economic Review*, 82(2) (AEA Papers and Proceedings): 32-37.

Bittencourt, M. F. (2006). "Financial Development and Inequality: Brazil 1985-1999," *Department of Economics, University of Bristol Discussion Paper*, 06/582.

- Blinder, A. & Esaki, H. (1978). Macroeconomic activity and income distribution in the Post-war United States. *The Review of Economic and Statistics* 60(4): 604-609.
- Bourguignon, F., & Verdier, T. (2000). Oligarchy, democracy, inequality, and growth. *Journal of Development Economics*, 62(2), 285-313.
- Brownbridge, M. & Gockel, A. F. (1996). The impact of financial sector policies on banking in Ghana. *IDS Working Paper, No. 38*. Institute of Development Studies, Sussex University.
- Burns, N. & Grove, S. (1993). The practice of nursing research: conduct, critique, and utilization (4th Ed.). *W.B. Saunders: Philadelphia, Pennsylvania, USA*.
- Caprio, G., & Klingebiel, D. (1999). Episodes of Systemic and Borderline Financial Crises. Washington, DC: *The World Bank, manuscript*.
- Cassell, C., & Symon, G. (1994). Qualitative research in work contexts. *Qualitative methods in organizational research: A practical guide*, 1-13, London: Sage.
- Chow, G. C., & Lin, A. L. (1971). Best linear unbiased interpolation, distribution, and extrapolation of time series by related series. *The review of Economics and Statistics*, 372-375.
- Claessens, S., & Perotti, E., C. (2007). Finance and Inequality: Channels and Evidence. Available at SSRN: <https://ssrn.com/abstract=998468>.

- Clarke, G., Xu, L. C., & Zou, H. (2003). Finance and Income Inequality: Test of Alternative Theories. *Policy, Research working paper series; no. WPS 2984*. Washington, DC: World Bank. [http:// documents.worldbank.org/curated/en/892521468762914086/ Finance-and-income-inequality-test-of-alternative-theories](http://documents.worldbank.org/curated/en/892521468762914086/Finance-and-income-inequality-test-of-alternative-theories).
- Clarke, G., Xu, L. C., & Zou, H. (2006), "Finance and Income Inequality: What Do the Data Tell Us?" *Southern Economic Journal*, 72, 578-596
- Cooke, E., Hague, S., & McKay, A. (2016). The Ghana poverty and inequality report: Using the 6th Ghana living standards survey. From [http:// africaine-qualities.org/wp-content/uploads/2016/07/Ghana_Poverty_and_Inequality_Analysis_FINAL_March_2016](http://africainequalities.org/wp-content/uploads/2016/07/Ghana_Poverty_and_Inequality_Analysis_FINAL_March_2016).
- Corak, M. (2013). Income Inequality, Equality of Opportunity, and Intergenerational Mobility. *Journal of Economic Perspectives* 27 (3), 79-102.
- Coulombe, H., & Wodon, Q. (2007). Poverty, livelihoods, and access to basic services in Ghana. In *Ghana CEM: Meeting the Challenge of Accelerated and Shared Growth*. Washington, DC: World Bank.
- Cysne, R.P., Maldonado, W. L., & Monteir, P.K. (2005). Inflation and income inequality: A shopping-time approach, *Journal of Development Economics*, 78,516-528.

- Dabla-Norris, E., Kochhar, K., Ricka, F., Suphaphiphat, N., & Tsounta, E. (2015). Causes and consequences of income inequality: a global perspective. *IMF Staff Discussion Note 15/13*, IMF, Washington DC.
- Demirguc-Kunt, A., & Maksimovic, V. (1998). Law, finance, and firm growth. *The Journal of Finance*, 53(6), 2107-2137.
- Demirguc-Kunt, A., & Detragiache, E. (1999). Does deposit insurance increase banking system stability? An empirical investigation. *Policy Research Working Paper Series 2247*, the World Bank.
- Demirguc-Kunt, A. & Levine, R. (2008). Finance and economic opportunists. *Revue d'e'conomie du de 'veloppement*, Vol. 22, pp. 5-29.
- Demirguc-Kunt, A., & Levine, R. (2009). Finance and inequality: Theory and evidence. *NBER working paper series 15275*. Cambridge, MA: National Bureau of Economic Research.
- Dickey, D. A., & Fuller, W. A. (1981). Likelihood Ratio Statistics for Autoregressive Time Series with a Unit Root, *Econometrica*, 49, 1057-1072.
- Dollar, D., & Kraay, A. (2002). Growth is good for the Poor. *Journal of economic growth*, 7(3), 195-225.

Easterly, W., & Fischer, S. (2001). Inflation and the Poor. *Journal of Money, Credit and Banking*, 160-178.

Engle, R. F., & Granger, C. W. (1986). Co-integration and error correction: representation, estimation, and testing. *Econometrica: Journal of the Econometric Society*, 251-276.

Feenstra, R., C., & Hanson, G., H. (1999). The Impact of Outsourcing and High Technology Capital on Wages: Estimates for the U.S., 1979-1990, *Quarterly Journal of Economics*, August 1999, 114(3), 907-940.

Forbes, K. (2000). A Reassessment of the Relationship between Inequality and Growth. *The American Economic Review* .vol.90 (4), 869.

Forbes, K. J. & Warnock, F. E. (2012). Capital Flow Waves: Surges, Stops, Flight, and Retrenchment. *Journal of International Economics*, 88(2) (November): 235-51.

Fowowe, B., & Abidoye, B. (2013). The effect of financial development on poverty and inequality in African countries. *The Manchester School*, 81(4), 562-585. Doi: 10.1111/j.1467-9957.2012.02302.x

Fung, D. S. (2006). Methods for the estimation of missing values in time series. *Perth: Edith Cowan University. MSc dissertation*. [https:// ro.ecu.edu.au/theses/63](https://ro.ecu.edu.au/theses/63).

- Galor, O., & Moav, O. (2004). From Physical to Human Capital Accumulation: Inequality and the Process of Development. *Review of Economic Studies*, Oxford University Press, vol. 71(4), pages 1001-1026.
- Galor, O., & Zeira, J. (1993). Income distribution and macroeconomics. *The review of economic studies*, 60(1), 35-52.
- Galli, R. & Van der Hoeven, R. (2001). Is inflation bad for income inequality? The importance of the initial rate of inflation, *ILO Employment Paper*, 2001/29.
- Granger, C.W.J & Newbold P. (1986). Forecasting Economic Time Series Book. 2nd Edition.
- Greenwood, J., & Jovanovich, B. (1990). Financial development, growth, and the distribution of income. *Journal of Political Economy*, 98(5, Part 1), 1076-1107.
- Griffith-Jones, S. & Karwowski, E (2013). Finance and Growth in Sub- Saharan Africa: *Policy and Research Challenge*, in: *Working Paper, Africa Task Force Meeting*, Yokohama, Japan: JICA and The initiative for policy Dialogue.
- Guiso, L., Sapienza, P., & Zingales, L. (2004). The role of social capital in financial development. *The American Economic Review*, 94(3), 526-556.

- Hafeez, R.U., Khan, S. & Ahmed, I. (2008). Income distribution, growth, and financial development: a cross-countries analysis. *Pakistan Economic and Social Review*, Vol. 46 No. 1, pp. 1-16.
- Hamori, S., & Hashiguchi, Y. (2012). The Effect of Financial Deepening on Inequality: Some International Evidence. *Journal of Asian Economics* 23, no. 4: 353-359.
- Hansen, B. E. (1999). Threshold effects in non-dynamic panels: Estimation, testing, and inference. *Journal of Econometrics* 93,345-368.
- Harris, L. (2012). From Financial Development to Economic Growth and Vice Versa: A Review of International Experience and Policy Lessons for Africa. *Journal of African Economies*, 21, AERC Supplement 1, i89-i106.
- Hassler, U., & Wolters, J. (2006). Autoregressive distributed lag models and cointegration. *Allgemeines Statistisches Archiv*, 90(1), 59-74.
- International Monetary Fund (2013). Global Financial Stability Report, October 2013: 93-125.
- Jantti, M. & Jenkins, S. (2010). The impact of macroeconomic conditions on income inequality. *The Journal of Economic Inequality*, Vol. 8, issue 2.
- Jayaratne, J., & Strahan, P. E. (1996). The finance-growth nexus: Evidence from bank branch deregulation. *The Quarterly Journal of Economics*, 111(3), 639-670.

- Jaumotte, F., Lall, S., & Papa Georgiou, C. (2013). Rising income inequality: technology, or trade and financial globalization? *IMF Economic Review* 61, 271-309.
- Johansen, S. (1991). Estimation and Hypothesis Testing of Cointegrating Vectors in Gaussian Vector Autoregressive Models. *Econometrica*, 59, 1551-1580.
- Johansen, S., (1995). Likelihood-Based Inference in Cointegrated Vector Autoregressive Models (New York: Oxford University Press).
- Johansen, S., & Juselius, K. (1990). Maximum Likelihood Estimation and Inference on Cointegration with Applications to the Demand for Money. *Oxford Bulletin of Economics and Statistics*, 52, 169-210. <https://doi.org/10.1111/j.1468-0084.1990.mp52002003.x>.
- Johnston, R. B., & Pazarbasioglu, C. (1995). Linkages between financial variables, financial sector reform, and economic growth and efficiency. *IMF Working Paper No. 95/103*.
- Kai, H., & Hamori, S. (2009). Globalization, financial depth, and inequality in Sub-Saharan Africa. *Economics Bulletin*, 29(3), 2025-2037.
- Kaminsky, G. L., & Reinhart, C. M. (1999). The twin crises: the causes of banking and balance-of-payments problems. *American economic review*, 473-500.

- Kappel, V. (2010). The effects of financial development on income inequality and poverty. *CER-ETH Economics working paper series 10/127*, CER-ETH-Centre of Economic Research (CER-ETH) at ETH Zurich.
- Kim, D. H., & Lin, S. C. (2011). Nonlinearity in financial development–income inequality nexus. *Journal of Comparative Economics*, 39(3), 310-325.
- King, R. G., & Levine, R. (1993). Finance and growth: Schumpeter might be right. *The quarterly journal of economics*, 108(3), 717-737.
- Kuznets, S. (1955). Economic growth and income inequality. *The American economic review*, 45(1), 1-28.
- Laurenceson, J., & Chai, J. C. (2003). Financial reform and economic development in China. *Edward Elgar Publishing*, number 2714.
- Law, S. H., & Tan, H. B. (2009). The role of financial development on income inequality in Malaysia. *Journal of Economic Development*, 34(2), 153.
- Leith, J. C. & Söderling, L. (2000). Ghana: Long-term growth, atrophy, and recovery emerging in Africa. A report for the OECD development center project.
- Levine, R. (1997). Financial development and economic growth: views and agenda. *Journal of economic literature*, 35(2), 688-726.

- Li, H., Squire, L., & Zou, H. F. (1998). Explaining international and inter temporal variations in income inequality. *The Economic Journal*, 108(446), 26-43.
- Liang, Z. (2008). Financial Development and Income Inequality in Rural China: 1991–2000. *Understanding Inequality and Poverty in China: Methods and Applications*, 72-88, UNU World Institute for Development Economics Research (UNU-WIDER).
- Ling-Zheng, Y. U., & Xia-Hai, W. E. I. (2012). Has financial development worsened income inequality in China? Evidence from the Threshold Regression model. *Journal of Finance and Economics*, 3(009).
- Malhorta, N., & Birks, D. (2007). Marketing Research: an applied approach: 3rd European Edition, Harlow, UK. Pearson Education, 835pp.
- Mishkin, F. (1999). Global Financial Instability: Framework, Events, Issues. *Journal of Economic Perspectives*, Vol. 13 (fall), pp. 3-20.
- Mookherjee, D. & Ray, D. (2003). Persistent inequality. *Review of Economic Studies*, vol.70, pp. 369–93.
- Mookherjee, D., & Ray, D. (2010). Inequality and markets: some implications of occupational diversity. *American Economic Journal: Microeconomics*, 2(4), 38-76.

- Munch, J., R., & Skaksen, J. R. (2009). Specialization, Outsourcing, and Wages. *Review of World Economics*, 145, 57-73.
- Naceur, S.B., & Zhang, R. (2016). Financial development, inequality, and poverty: some international evidence. *IMF Working Paper 16/32*, IMF, Washington DC.
- Nikoloski, Z. (2013). Financial sector development and inequality: is there a financial Kuznets curve? *Journal of International Development*, 25(7), 897-911.
- Nkusu, M. (2011). Nonperforming loans and macro-financial vulnerabilities in advanced economies. *IMF Working Papers*, 1-27. Retrieved from <http://dx.doi.org/10.5089/9781455297740.001>.
- Osei-Assibey, E. (2014). Inequalities Country Report-Ghana. In the *Pan-African Conference on Inequalities in the Context of Structural Transformation*.
- Persson, T., & Tabellini, G. (1994). Is Inequality Harmful to Growth? Theory and Evidence. *American Economic Review*, 84(3): 600-621.
- Pesaran, M. H., & Shin, Y. (1998). An autoregressive distributed lag modelling approach to cointegration analysis. *Econometric Society Monographs*, 31, 371-413.
- Pesaran, M. H., Shin, Y., & Smith, R. J. (2001). Bounds testing approaches to the analysis of level relationships. *Journal of applied econometrics*, 16(3), 289-326.

- Porta, R., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1997). Legal determinants of external finance. *The journal of finance*, 52(3), 1131-1150.
- Porta, R. L., Lopez-de-Silanes, F., Shleifer, A., & Vishny, R. W. (1998). Law and finance. *Journal of political economy*, 106(6), 1113-1155.
- Quartey, P., & Kayanula, D. (2000). The policy environment for promoting small-scale and medium-sized enterprises in Ghana and Malawi. Finance and Development Research Programme, *working paper series*, 15.
- Rajah, R., & Zingales, L. (1998). Financial Dependence and Growth. *The American Economic Review*. Vol. 88, No. 3 (June, 1998), pp. 559 – 586.
- Rajan, R. G., & Zingales, L. (2003). The great reversals: the politics of financial development in the twentieth century. *Journal of financial economics*, 69(1), 5-50.
- Rajan, R., & Zingales, L. (2003). Saving Capitalism from the Capitalists: Unleashing the power of financial markets to create wealth and spread opportunity. *New York: Crown Business*.
- Ranciere, R., Tornell, A., & Westermann, F. (2006). Decomposing the effects of financial liberalization: Crises vs. growth. *Journal of Banking and Finance*, 30, 3331-3348.

- Rehman, H. U., Khan, S., & Ahmed, I. (2008). Income distribution, growth, and financial development: A cross-countries analysis. *Pakistan Economic and Social Review*, 1-16.
- Rotheli, T. F. (2011). The Kuznets curve: determinants of its shape and the role of finance. *Studies in Economics and Finance*, 28(2), 149-159.
- Romer, C. D., & Romer, D. H. (1998). Monetary policy and the well-being of the poor. *NBER Working Paper No. 6793*, Cambridge, MA.
- Schinasi, G., J. & International Monetary Fund. (2006). Safeguarding Financial Stability: Theory and Practice. Washington, D.C: International Monetary Fund.
- Selim, A. & Liu, Y. (2010). Cross country evidence on the linkages between financial development and poverty. *International Journal of Business and Management*, Vol.5 No.1, pp. 1-19.
- Sebastian, J., & Sebastian, W. (2011). Financial development and income inequality. *CES working paper: Fiscal Policy, Macroeconomics, and Growth*, No. 3687.
- Sehrawat, M., & Giri, A. K. (2015). Financial development and income inequality in India: An application of the ARDL approach. *International Journal of Social Economics*, 42(1), 64-81.

Shahbaz, M. & Islam, F. (2011). Financial development and income inequality in Pakistan: An application of ARDL approach. *Journal of Economic Development*, Vol.36, pp. 35-58.

Stiglitz, J., E. (2012). *The Price of Inequality: How Today's Divided Society Endangers Our Future*. W. W. Norton, New York, NY.

Jeanneney, S., G., & Kpodar, K. (2011). Financial Development and Poverty Reduction: Can There Be a Benefit Without a Cost? *The Journal of Development Studies*, Taylor & Francis (Routledge), 2011, 47(1), pp.143-163.

Tan, H.B., & Law, S.K. (2012). Nonlinear dynamics of the finance-inequality nexus in developing countries. *Journal of Economic Inequality*, 9, 1–13.

Tita & Aziakpono, (2016). Financial development *and* income inequality in Africa: A panel heterogeneous approach. *ERSA working paper 614*, Economic Research Southern Africa.

Todaro, M. P. & Smith C. S. (2009). Poverty, inequality, and development. Chapter 5. *In Economic development*. 10th ed. Boston: Pearson Addison Wesley.

Were, M., & Wambua, J. (2014). What factors drive interest rate spread of commercial banks? Empirical evidence from Kenya. *Review of Development Finance*, 4(2), 73-82

Westley, G.D. (2001). Can Financial Market Policies Reduce Income Inequality? *Sustainable Development Department Technical Paper Series, No. MSM-112*. Washington: Inter-American Development Bank.

World Economic Forum, (2012). *The Financial Development Report 2012*. Available at <http://www.weforum.org/reports/financial-development-report-2012>.

World Bank. (1994). Ghana financial sector review: Bringing savers and investors together. World Bank Report No. 13423-GH. Washington, DC.

World Bank, (2016). *World Development Indicators*. Washington, DC. <http://openknowledge.worldbank.org/handle/10986/23969>. Cited 16 December, 2016.

Zhang, J., Wang, P., & Qu, B. (2012). Bank risk-taking, efficiency, and law enforcement: Evidence from Chinese city commercial banks. *China Economic Review*, 23(2), 284-295.

Zhang, Q., & Chen, R. (2015). Financial development and income inequality in China: An application of SVAR approach. *Procedia Computer Science* 55 (2015) 774–781. Retrieved from [https:// doi.org/10.1016/j.procs.2015.07.159](https://doi.org/10.1016/j.procs.2015.07.159).

Ziorklui, S. Q. (2001). The impact of financial sector reforms on bank efficiency and financial deepening for savings mobilization in Ghana. African Economic Policy Discussion Paper 81.