FINANCIAL DEVELOPMENT AND UNEMPLOYMENT:

EVIDENCE FROM FIVE MIDDLE INCOME COUNTRIES IN WEST AFRICA

By

EBOI, Kablan Begniya Charlene Hermance

THESIS

Submitted to

KDI School of Public Policy and Management

in partial fulfillment of the requirements

for the degree of

MASTER OF DEVELOPMENT POLICY

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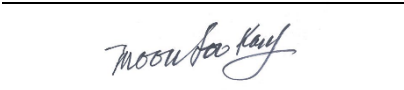

MASTER OF DEVELOPMENT POLICY

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ABSTRACT

FINANCIAL DEVELOPMENT AND UNEMPLOYMENT: EVIDENCE FROM FIVE

MIDDLE INCOME COUNTRIES IN WEST AFRICA

By

Kablan Begniya Charlene Hermance Eboi

This research investigates whether financial development can lower unemployment rate in five middle income countries of West Africa: Cape Verde, Cote d'Ivoire, Ghana, Nigeria and Senegal. For this purpose, the causal relationship of Granger is firstly explored to determine whether financial development can cause unemployment rate in these five countries. Then, the impulse response function is applied to identify the positive, negative or null impact from an increase of financial development on future unemployment rate. The method employed in this study is Vector Auto Regression (VAR) using annual time series data over the period 1991-2012 for each respective countries. Domestic credit to private sector by banks as share of GDP and liquid liabilities as share of GDP are the two measures of deepening financial development. Evidence shows that none of these two measures of financial development affect unemployment rate in Senegal. In addition, at the impulse of financial development, any response from

unemployment would be recorded in the coming eight years. However, the findings suggest that financial development under the proxy of domestic credit to private sector by banks is monumental to reduce unemployment in Cape Verde and Cote d'Ivoire. Undeniably, this proxy causes unemployment in the above two French colonies. Furthermore, escalating domestic credit to private sector will lower unemployment at the first, second and third year in Cape Verde as well as in Cote d'Ivoire. As of Nigeria and Senegal, the English colonies of this paper, the comprehensive money supply is the key to reach a decline in unemployment level. Indeed, liquid liabilities cause unemployment rate. At that, a one percent increase of liquid liabilities will reduce unemployment rate in Ghana at the third, fourth and sixth years. In the case of Nigeria, a shrinking of unemployment level will come out at the sixth year. Besides this empirical testing, an inquiry of the International Finance Corporation's enterprise survey has been initiated. The purpose is to discover which of the small, medium or large enterprises profit from banking loans in their daily activities. The findings prove that the share of large firms benefiting from the lending system disproportionately exceeds the share of small and medium firms. The suggestion from this research is to investigate the reasons why small and medium businesses are disadvantaged as compared to large firms. This will give a hand to the financial sector in enhancing the positive effect of loan in countries such as Cape Verde and Cote d'Ivoire. Moreover, in nations such as Ghana, Nigeria and Senegal, the positive impact of loans on underprivileged enterprises will materialize. Consequently, small and medium companies will access loans, ameliorate the running of their businesses and consequently leading to job creation.

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I would have never been able to reach the end of this thesis without support and indispensable collaboration. For their help and contribution, in one or other way, I would like to express my deepest gratitude to the following institution and persons.

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1. INTRODUCTION

This research aims to investigate the relationship between financial development and unemployment in five middle income growing economies in West Africa.

Economic growth indicators are important in measuring how well countries are performing. However, this measurement does not point out whether the growth is inclusive or not. An economic growth or a shift in a higher bracket of per-capita-income is not always correlated with a narrowed disparity within the population - living standard, business profit, job creation, and so forth - as is evident in Africa. As stated by Page (2012), "Africa has enjoyed fifteen years of sustained economic growth… Yet, there are worrying signs that this growth turnaround has not resulted in robust growth of '*good*' jobs."[1] Corroborating this view, the International Labor Organization, ILO in 2013 pointed out that, the economic growth in Sub-Saharan Africa has not led to decay in the unemployment rate[2]. From 2008 to 2012, the joblessness rate was stuck to 7.8%, and has not helped in ameliorating the woes of workers (ILO, 2011). Nonetheless, the level of jobseekers diverge from country to country. The economies of countries in this study: Cape Verde, Côte d'Ivoire, Ghana, Nigeria, and Senegal have respectively recorded 7.4%, 4%, 3.6%, 7.5%, and 9.9 % for total unemployment rate in 2012 (World Bank indicator, 2014).

According to the ILO (2013), the aforementioned unemployment challenge for Africa is linked to its weak labor productivity. To this, Page (2012) added the deficiency

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[1] Page, John. "Youth, Jobs, and Structural Change: Confronting Africa's "Employment Problem"." *In Working Paper Series*, no. 155. Tunisia, Tunis: African Development Bank, October 2012.
[2] International Labour Organization. International Labour Office. *"Global employment trends 2013: Recovering from a second jobs dip."* Geneva. 2013. Accessed July 29, 2014.

in structural change. To remedy this, the authors above have argued a fast structural change towards a more industrialized region for Africa. To add to the above, the theory of Schumpeter can be explored. This theory is summed up in the principle of innovation that can only be brought about by entrepreneurs (Adil, 2011)[3]. However, the advocated recommendations required a set of key drivers including an assortment of financial funds (access to finance) to support investments and innovative ideas. Besides, access to finance depends on financial development. Financial development is achieved when the financial system is able to lower the costs in generating, mobilizing and pooling saving in order to finance productive investments (Levine, 1997)[4] which can lead to better job creation. Subsequently, financial development allows greater investment and hence job opportunities. Financial development encourages entrepreneurship; leading to job creation. Financial development improves inclusive economic growth; therefore, employment. However, if financial development allows only the wealthy, the educated, and those politically connected to access capital, then financial development reduces job opportunities. This implies that, financial development may have three effects on unemployment: positive, negative and none.

The study on the relationship between financial development and unemployment in the five middle income countries in West Africa sources its first relevancy on the following: on one hand, the level of unemployment is linked to the level of poverty and inequality. And on the other hand, financial development has been suggested as a mean to improve economic growth and reduce inequality and poverty rate. Claessens and Feijen

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[3] Adil, Mouhammed. "Important Theories of Unemployment and Public Policies." *Journal of Applied Business and Economics*, no. 12-5(2011): 100-110.

[4] Levine, Ross. "Financial Development and Economic Growth." *Journal of Economic Literature*, vol. 35, no. 2(1997): 688-726

(2007) would not counter this assertion due to their research findings. Financial development through agricultural productivity widening (economic growth) and less income poverty, minimizes the level of inequality in terms of undernourishment. Therefore, can financial development lower unemployment in order to scale up the level of economic growth inclusiveness?

The second imperative point of this research is rooted in the demographic transition – pyramidal structure of the population- that Africa is going on. Contrary to the expectations that these demographic trends are windows for economic and social prosperity (Mubila, 2012), higher human resources which might trigger labor productivity; this transition might be a curse not only for the five countries of this research but also for the region. Indeed, according to statistics from westafricagateway.org, the population of these 5 countries represents 67.73% of the 317 million people in West Africa in 2010[5]. Forty two percent of this figure are under the age of 15 years. The dependency ratio for those countries is comprised between 81.6 and 112. The median age falls between 17.8 years and 22.8 years; the lower percentage belongs to Senegal while the upper to Cape Verde[6]. The mean of median age is 18.9 years. With high and disparate level of unemployment among the youth and the growing population, policy makers must implement suitable policy frameworks, to tackle this issue. Otherwise, they will have to overcome a higher level of jobseekers, poverty and inequality. From the aforementioned, it is important to discover whether financial development can lower unemployment via job creation for middle income countries characterized by youth

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[5] http://www.westafricagateway.org/topic/demographic-trends
[6] http://www.westafricagateway.org/topic/demographic-trends

population and different stage of unemployment. From the findings, governments can frame better policies to reduce joblessness.

The questions underpinning this research are as follows:

- Does financial development cause unemployment in each of the 5 countries?

- Would financial development reduce unemployment in each particular country?

- Do banks ease access to finance for small businesses in every specific economy?

This study found out that the relationship between financial development and unemployment is diverging among countries depending on the variable. Domestic credit to private sector is a key player in unemployment reduction in only Cape Verde and Cote d'Ivoire. Even though the share of large firms beneficiating of loans is high in Cape Verde, a high share of SMEs enjoy access to credit. Moreover the private sector's access to finance has kept increasing over years. However, liquid liabilities are the key player to decrease unemployment in Ghana and Nigeria. This can be due to the significant proportion of the labor market engaged in informal sector and the predominant share of young among job seeking. As for Senegal, neither domestic credit to private sector nor money supply M3 as percentage of GDP impact unemployment rate.

The methodology used in this research is the time series data analysis with Vector Auto Regression (VAR). The model specification is in a matrix form. Unemployment is the dependent variable and financial development the independent variable. Domestic credit to private sector and liquid liabilities (M3), both as a percentage of GDP are the proxies of financial development.

In this paper secondary data is used. The indicators of financial development and unemployment are from the 2014 World Bank indicators available on its website. To estimate the relationship between entrepreneurs and bank, the research relied on the 2007, 2009 and 2013 enterprise survey conducted by the International Financial Corporation. This paper adds to the few scholarly works on this topic. By using time series five new countries are studied and the impact of each proxy of financial development is observed individually to better frame policy. However, further studies can remove the weakness of this study that is the limited observations to run a regression.

2. LITERATURE REVIEW

Diverse theories attempt to attribute a specific cause of unemployment with numerous solutions adduced to curb it. As a synthesis of Adil (2011), unemployment can be rooted in a mismatch between demand and supply of labor, in a cyclical business theory, in a phenomenon of inflation or in a lack of innovation and labor productivity. [7] Some scholars from Pakistan (Shabbir et al, 2012) and others from Nigeria (Aliero et al, 2013) emphasized rather on financial development to get rid of the level of unemployment. In this paper, the review of literature will focus on how financial development contributes in unemployment reduction through 3 channels: investment, entrepreneurship and inclusive growth.

2.1. INVESTMENT

This subsection of the literature attempts to clarify and simplify how the development of the five functions of the financial system – financial intermediaries - helps in unemployment levels falling. A growing economy through capital accumulation or via technological innovation has been proven to be the requisite to crossing the divide between financial development and unemployment. This paper focuses on capital accumulation as a channel and the hypothesis used is the supply-leading growth. Hence, financial intermediaries' development in participating to the economic growth allows greater investment, and consequently job opportunities.

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[7] Adil, Mouhammed. "Important Theories of Unemployment and Public Policies." *Journal of Applied Business and Economics*, no. 12-5(2011): 100-110.

Levine (1997)[8] is the author who divided the primary function of the financial system into five categories. He indicated 1) how the market frictions (information costs and transaction costs) induced the advent of the financial markets and intermediaries; and 2) how each function of the financial system through the channel of capital accumulation contributes to the economic growth. The five functions of the financial system are: facilitate the trading, hedging, diversifying and pooling of risk; allocate resources; monitor managers and exert corporate control; mobilize savings; and, facilitate the exchange of goods and services.

Mobilization of savings

In the process of economic growth, production units require external capital to enlarge their production capacities. Nonetheless, in the absence of financial intermediaries and markets, collecting saving from different individuals and/or companies could be tough for production units. Indeed, it is costly to collect savings from each individual and companies. To add to this previous point, savers are reluctant to abandon control of their funds; they would like to access to their financial resources as soon as they require them. The financial intermediaries arise as the key element to address those complications since they may bring about different kinds of financial instruments and ensure the liquidity of money.

Facilitating Risk Amelioration

[8] Levine, Ross. "Financial Development and Economic Growth: Views and Agenda." *The journal of Economic Literature,* vol. XXXV(1997): 688-726

The liquidity risk associated with the market frictions has induced the emergence of financial institutions to ease the economic growth and development. "Liquidity is the ease and speed with which agents can convert assets into purchasing power at agreed prices"[9]. Thus, the suspicions and difficulties to easily interchange those assets into financial resources is called the risk of liquidity. This risk matters for projects with huge profits since they favor the growth and development of an economy. However, high-return projects implied higher investments. Therefore, it will be less likely to implement projects of high return if financial intermediaries do not enhance the liquidity of the long term investment.

Acquiring Information about Investments and Allocating Resources

In the presence of financial intermediaries, those intermediaries obtain and evaluate information on behalf of multiple investors. Hence, they become one of the engines of economic growth. In the example of Levine (1997), it is assumed that the cost of information procurement for a production technology is fixed. Moreover, each investor must pay this cost in the absence of an intermediary to evaluate the firm's project. Entrusted this function to the financial system will remove the burden that each investor would have done to examine the profitability of their investment. Also, it will ease the operations and lower the transactions costs.

Monitoring Managers and Exerting Corporate Control

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[9] Levine, Ross. "Financial Development and Economic Growth: Views and Agenda." *The journal of Economic Literature,* vol. XXXV(1997): 6688-726

The impossibility of monitoring and exerting corporate control are functions which can obstruct the mobilization of funds from savers to finance investment. Apart from information acquiring, the financial intermediaries after its lending activity is better off in project monitoring and corporate control exercising. Indeed, before bestowing a loan, the lender in the interests of the saver, inserts some clauses into the loan contract to protect savers' investment. These covenants will enable him to monitor the borrower and exercise corporate control if the lender takes part in risky activities conducting to default. By taking away the difficulty that outsiders' savers have to secure their assets, the financial system can facilitate the pooling of saving to invest in projects.

The five functions above relate how financial intermediaries are deeply involved in the funding process. The following meanwhile will show how the investments enabled by agents such as bank can lower unemployment level.

In analyzing the relationship between capital investment and unemployment, Jósef (2013)[10] developed a model where labor employed by firms are either dedicated to the production of capital or to the production of a final good. Using a cross-country data, the results of his quantitative analysis indicated that raising the level of technology to produce capital lowers the level of unemployment. In addition, this is due to an improvement of the capital formation. The two propositions of the author to explain the capital formation are the following:

> Increase in the technology growth rate g increases employment in the capital production sector but decreases employment in final-good production, partially through reallocation into capital production. Because

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[10] Jósef, Sigurdsson. "Capital Investment and Equilibrium Unemployment." *Central Bank of Iceland- Working Paper,* no. 61, February 2013

the job creation effect more than offsets the reallocation effect, unemployment decreases.

Increase in the technology growth rate g increases capital formation in equilibrium and decreases equilibrium unemployment.

These findings implies how capital accumulation is conducive for job creation, hence unemployment reduction. Consequently, financial intermediaries such as banks become the keystone in an economy with low financial market. For, firms within such an economy require external capital for their expansion. Such expansion will result into employment.

2.2. ENTREPRENEURSHIP

One of the options to tackle the unemployment problem is innovation. The concept of innovation develops five channels of innovative ideas through which changes in the economy occur (Schumpeter, 1934). There are: the launch of new products, the introduction of new production processes, the use of new suppliers, the penetration of new markets, and the carrying out of a new organization in the industry. [11] By paraphrasing another point of Schumpeter's idea, Adil (2011) goes on to say that "the new combinations are usually embodied in new productive enterprises which start by utilizing the unemployed working people, the unsold raw materials, the new technologies, and the unused productive capacity."[12] Moreover, Mortensen and Pissarides (1994)[13] but also Vecchi (1995)[14] claim also the benefit of innovation on unemployment. They

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[11] Schumpeter, Joseph. Theory of Economic Development. Cambridge, MA.: Harvard University Press, 1934. Original published, 1912.

[12] Adil, Mouhammed. "Important Theories of Unemployment and Public Policies." *Journal of Applied Business and Economics*, no. 12-5(2011): 100-110.

[13] Mortensen, Dale., and Pissarides, Christopher. "Job Creation and Job Destruction in the Theory of Unemployment." *The review of Economic Studies*, vol 61, no 3(1994). 397-415.

[14] Vecchi, Nicole. *Entrepreneurs, Institutions and Economic Change: The economics thought of J.A. Schumpeter (1905-1925)*. Translated by Anne J. Stone. London: Edward Elgar Publishing, 1995.

indicated that through innovation, the level of job creation outbalances the degree of job destruction. For Joseph Schumpeter, it is entrepreneurs who are able to come up with innovative ideas (Adil, 2011). In *Innovation and Entrepreneurship in a Global Economy*, the author argues that entrepreneurs are likely to be the remedy of joblessness if and only if they encounter creativity and innovation in their running business.[15] Therefore, the previous models imply that entrepreneurial activities can tackle unemployment.

Subsequently, several scholars and organizations will attempt to study the theory between entrepreneurship and unemployment, in order to obtain evidence for endorsing or not endorsing the model. Thus, the European Commission indicated in 2003 that entrepreneurship is a cure for joblessness. Even so, some findings point out the dynamic relationship between unemployment and entrepreneurship. Indeed, entrepreneurial activity can lighten the unemployment burden - "Schumpeter" or pull effect - as unemployment can encourage entrepreneurship, which is the push, refugee, or shopkeeper effect. Remeikiene and Startiene (2009) asserted that both the pull and push effects can be observed in theory and practice.[16] The study of Ghavidel and others (2011) compared developed and developing countries. They concluded that for both countries classification, the pull effect is established as a definite but the push effect is not clear.[17] In contrast, Audretsch, Carree and Thurik (2001) arrived with different outcomes; their investigations allowed them to conclude that entrepreneurship scaled up the level of

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[15]Innovation and Entrepreneurship in a Global Economy, Accessed July 30, 2014. http://druckersociety.at/repository/scientific/Pearl.pdf

[16] Remeikiene, Rita., and Startiene, Grazina. "Does the Interaction between Entrepreneurship and Unemployment Exist?" *Economics & Management*, no. 14(2009): 903-911.

[17] Ghavidel, Sahel., Farjadi, G., and Mohammadpour, A. "The Relationship between Entrepreneurship and Unemployment in Developed and Developing Countries." *International Journal of Economic Behavior*, no. 1(2011): 71-78.

created job.[18] In addition to Audrey et al, Japan is another evidence of the Schumpeter effect, as entrepreneurship lowers unemployment with a lag of four yearly data (Van Stel et al, 2007).[19]

In studies which reveal that entrepreneurs participated deeply in job reduction, researchers emphasized on the lack of financial resources as the biggest challenge facing these business owners. Their limited capability to raise funds prevents most of them from launching their businesses, and growing their companies. In the Schumpeter view, in order to materialize innovations, start-ups need credit and finance. Since banks create and save money, they are able to redistribute the wealth by lending to entrepreneurs. Kerr and Nanda (2011) concluded in line with Schumpeter in *Financing Constraints and Entrepreneurship* that "financing constraints are one of the biggest concerns impacting potential entrepreneurs".[20] According to them, entrepreneurs need adequate capital. The suggestion arising from the previous authors is that, loans from the banking system are a catalyst to launching, running, and sustaining the innovative business of entrepreneurs. The prominence of banks in this process is accentuated by Shabbir and others (2012)[21]; additionally they give emphasis not only on banks but also on market sector. The financial sector includes the market sector as well as the banking sector. Consequently, financial sector development appears to be a catalyst of reducing unemployment.

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[18] Audretsch, D.B., Carree, M.A., and Thurik, A.R. "Does Entrepreneurship reduce Unemployment?" *Tinbergen Institute Discussion Paper*, vol 74, no 30(2001). Erasmus University Rotterdam.
[19] Van Stel, A.J. and others. "The relationship between Entrepreneurship and Unemployment in Japan." *Tinbergen Institute Discussion Paper*, vol 70, no 30(2007). Erasmus University Rotterdam.
[20] Kerr, William., and Ramana Nanda. "Financing Constraints and Entrepreneurship." *In Handbook of Research on Innovation and Entrepreneurship*, edited by David Audretsch, Oliver Falck, and Stephan Heblich, 88–103. Cheltenham, U.K.: Edward Elgar Publishing, 2011.
[21] Shabbir, Ghulam and others. "Contribution of Financial Sector Development in Reducing Unemployment in Pakistan." *International Journal of Economics and Finance*, no. 4-1(2012): 260-268.

2.3. INCLUSIVE GROWTH: POVERTY AND INCOME INEQUALITY

Albeit personal skills and ambition capacities; parental wealth; social status and political bonds influence individual economic opportunities; financial development may affect the extent to which those economic opportunities are contrasting within poor and rich across generation (Demirgüc-Kunt and Levine, 2009). The following literature will discuss how the direct mechanism of financial development to the extensive margins and the indirect mechanism through labor market lower poverty and inequality.

2.3.1. Direct mechanism

Several authors believe that financial development can impact inequality by the direct apparatus. This can be done if the financial system tackles the extensive margins: eases access to those non-users of financial services impeded for one reason or another. Two major challenges that the financial system can help address are human capital buildup and investment opportunities.

Human capital endowment is one of the factors involved in a company's human resources department's hiring decision. Demirgüc-Kunt and Levine (2009)[22] based on the theory of Becker (1979) and Tomes (1986) stress on the fact that finance is a noteworthy player in modelling the gap of human capital accrual between rich and poor families. Though the production of skilled labors is affected by the dynastic endowment of ability and schooling, poor parents face obstacles to develop and invest in the education of their children. Therefore, a negative shock toward their wealth along with financial market

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[22] Demirgüc-Kunt and Levine. "Finance and Inequality. Theory and Evidence." Working Paper Series, no. 4967, June 2009.

frictions might lead them to withdraw one child or more children from the educational system to child labor.

In testing the 'Luxury Axiom' hypothesis generated by Basu and Van in 1998, Ray (2000)[23] with the household survey data sets of Pakistan has confirmed the above assumption. The results implying the relationship between poverty and child schooling are the following: "When a Pakistani household falls into poverty, i.e. crosses the poverty line from above as defined over non child household income, it significantly and substantially increases its children's involvement in outside, paid employment by approximately 500 hours annually for every child, just as the "Luxury Axiom" predicts." Hence, if the financial market allows extensive margin to access their financial services, this will lead to more economic growth. Mainly, financial development will enable less income households to allocate resource to their children schooling and prevent dropouts, which in turn will bridge schooling and job opportunities.

Beside human capital accumulation, financial development which breaks the barriers hindering investment opportunities in the direction of non-wealth societies may lessen generational income inequality and poverty. This favors shrinking of unemployment rates. Financial development is essential for capital mobilization and redistribution in high returns investment project (Levine, 1997).[24] Nevertheless, when the financial system is not efficient enough to obviate risk adverse or moral hazard, investment opportunities for talented and innovative spirit are constrained by family wealth. For those whose parental assets are at the bottom of the scale, their likelihood to

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[23] Ray, Rajan. "Child Labor, Child Schooling, and Their Interaction with Adult Labor: Empirical Evidence for Peru and Pakistan." *World Bank Economic Review,* no. 14-2 (2000): 347-67

[24] Levine, Ross. "Financial Development and Economic Growth: Views and Agenda." *Journal of Economic Literature,* vol 35, no. 35-2 (1997): 688-726.

set up a micro or small venture are undermined and quasi inexistent. As a result, the use of financial services becomes their last resort to enter in the labor market through self-employment.

In investigating whether access to financial services, particularly credit, lowers poverty in Nigeria, Aliero and Ibrahim (2012)[25] focus on rural areas. Implementing a questionnaire randomly distributed in rural areas of Katsina state, they obtained a cross-sectional primary data. Their findings enabled them to raise the subsequent inference: escalating branch facilities in rural areas and easing financial access of poor can reduce poverty. This conclusion converges to their literature stating that "The capacity of poor for entrepreneurship would be significantly enhanced through the provision of financial services to enable them engage in economic activities and be more self-reliant, increase employment opportunities, enhance household income thereby leading to economic growth."

2.3.2. Indirect mechanism

Out of the direct mechanism, theories suggest that a decline in inequality may also be feasible through indirect canals entailing the financial market. In others words, the use of financial services by the extensive margin is not the only way to decrease the tenacious inequality fissure between the fortunate and unfortunate households. Those excluded from the financial system can profit from the economic opportunities and new policy implementation.

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[25] Aliero, Haruna., and Ibrahim, Saifullahi. "Does Access to Finance Reduce Poverty? Evidence from Katsina State." *Mediterranean Journal of Social Sciences,* Vol. 3-2(2012): 575-581

Gine and Townsend (2004)[26] through their theory of the general equilibrium reveal that the greater impact of finance on inequality reduction comes through the indirect labor market mechanism. In the long term, financial development will help raising the demand for low skilled labor. Moreover the general equilibrium model, different authors proved that a modification in a financial institution policy can drive a decline in inequality. Among them Beck, Levine and Levkov (2007)[27].

For testing the hypothesis that exogenous change in policy in financial sector has a negative relationship with inequality; Beck, Levine and Levkov focused on bank deregulation. Using the Gini coefficient to measure income inequality, their research confirmed the assumption. They found that when a state frees geographical constraints, inequality decreases compared to both the state's previous level of inequality and the others state. Furthermore, their findings stress that less than 10% of income inequality reduction is due to more entrepreneurial activities backed by loans. Rather, they mention that 75% of inequality decline is the result of financial deregulation which disproportionately without hurting the rich increases the earnings of low income individual. Indeed, this deregulation will lead to increase demand for low skilled workers in the labor market.

3. METHODOLOGY

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[26] Giné and Townsend. "Evaluation of Financial Liberalization: A General Equilibrium Model with Constrained Occupation Choice." *Journal of Development Economics*, 74-2 (2004): 269-307.
[27] Beck, Thorsten., Levine, Ross., and Levkov, Alexey. "Bid Bad Banks? The Impact of U.S. Branch Deregulation on Income Distribution." Working Paper Series, no. 13299, August 2007.

Divided in two parts, the methodology allows the comprehension of the process underpinning the hypothesis testing. The first part will display the followed approach used to specify the model. The second portion will emphasize on the dataset characteristics.

3.1. METHODOLOGY AND MODEL SPECIFICATION

This research aims to pinpoint whether financial development would affect unemployment in each of five middle income countries of the Western Africa. It allows the study to operate through time series data analysis. Subsequently, the presence or not of unit root in the series should be tested; for it will help determining the model to use. However to be able to define the model, the length of the lagged variables must be identified. Then, others tests will be passed to state whether the model is usable. Finally, Granger causality and Impulse Response Function will be initiated to find out if financial development would reduce unemployment in those countries.

3.1.1. Unit root tests

The preliminary step before identifying the relationship between multiple time series is to check their stationary. For running a regression between non-stationary time series data leads to spurious result. Checking whether the series are stationaries or not imply determining if they have a unit root or not. A series with a unit root is declared non-stationary.

Dicker Fuller and Augmented Dicker Fuller tests are used to determine the presence or not of the unit root. The null hypothesis is the presence of unit root. The alternative hypothesis confers to the absence of the unit root. A series which is stationary

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without differentiation is said integrated of order 0, I(0). Then, Vector Auto Regression (VAR) is the conformist model to estimate some further relationships between the variables.

When the series are stationary with differentiation –integrated of order n– the cointegration test must be adopted to establish the existence or not of a long run relationship between the variables. At that point, Vector Error Correction Model can be used. Others models can be used in time series analysis.

3.1.2. Test of lag length

The coefficients and the estimation of the VAR model depend on the number of lagged variables. One measure to decide of the lag length in VAR models are information criterion. The best model would be the selection of the number (p) of lags that produces an information criterion with the smallest value − $p<p_{max}$. The Akaike's information criterion (AIC), the Bayesian (or Schwarz) information criterion (BIC or SC), or the Hannan-Quinn criterion (HQ) are some measurement of information criteria.

3.1.3. Vector AutoRegression and model specification

Once the lag length is settled, the VAR model can be estimated. A VAR is a model depicted by various authors as providing a reliable framework to describe data, forecast, make structural inference and analyze policy. It is an n-equation, n-variable model in which each variable is expressed as a function of its own lagged values and the lagged values of the remaining variables. A VAR model of length p is denoted VAR (p). Three different forms of VAR can be used: the reduced form, the recursive and the structural VAR. This study uses the reduced form.

The reduced-VAR structure is that each of the variables is the result of the linear function of its own lagged value and the past lagged value of the other variables. OLS enables the estimation of each equation. The error terms must be serially uncorrelated; they represent the surprise movements in the variables after taking past values into account. A VAR of length 1 is estimated as the following:

$$\mathbf{Z_t = \alpha + \beta Z_{t-1} + \epsilon_t}$$

$$Zt = \begin{bmatrix} X1,t \\ X2,t \end{bmatrix} \quad Zt\text{-}1 = \begin{bmatrix} X1,t\text{-}1 \\ X2,t\text{-}1 \end{bmatrix} \quad \mathbf{\epsilon_{t}} = \begin{bmatrix} \epsilon_{1,t} \\ \epsilon_{2,t} \end{bmatrix} \quad \mathbf{\beta} = \begin{bmatrix} \mathbf{\beta_1} \\ \mathbf{\beta_2} \end{bmatrix}$$

However before making any investigation with VAR model, the estimated model with its lag length must satisfied some properties for being quite robust. The model will be then diagnosed. Hence, the test of normality, the test of stability and the test of correlation must be applied.

3.1.4. Diagnostic checking: Normality, Stability and Correlation tests

Three tests will be introduced to analyze the quality of the VAR model. The first test will measure how stable the model is. The VAR must satisfy the stability condition. For that all the Eigenvalue must lie under the circle: their value must be less than 1.

The second test will be about checking whether the model presents a serial correlation. In order to implement additional tests with a VAR estimated through OLS, each equation must satisfy a condition: the residuals of the series must not be correlated. To inspect this, the Lagrange multiplier test will be employed. The null hypothesis in this test is "no autocorrelation at lagged order" and this null hypothesis must not be rejected

to fulfill the requirement. Hence, the p-value must be greater than the level of significance of five percent.

The third and last test will focus on the normality distribution of the residuals. Indeed, with a sample covering limited observations, the residuals may not follow a normal distribution. To obviate this uncertainty the normality test of Skewness is adopted. Under the null hypothesis the data are normally distributed; thus, if p-value is greater than the level of significance (5%), we fail to reject the null hypothesis. And, it matches the condition.

Those three tests will enable examination of two of the three principals' relationship in a VAR model in this research. How time series variables are interlinked in the system of equations.

3.1.5. Granger causality

One of the three elements than experts try to determine with a VAR model is the causal impact of an endogenous variable on another (Brandt and William, 2007).[28] Such an analysis elucidates whether a variable X_1 is enough explanatory in predicting X_2. In order to evaluate the causal effect among endogenous variables in a time series analysis, we refer to the statistical model of Cliver Granger: the Granger causality concept.

Does a time series appropriate in foretelling another time series? This is the question that the statistical idea of Granger causality attempt to clear up. Subsequently, the following condition must be meet so that X_1 will "Granger-causes" (or "G-causes") X_2. The past values of X_1 must encompass enough information to better forecast X_2 than

[28] Brandt and Williams. "Multiple Time Series Models." *Quantitative Application in the social science,* Sage publication series 7, no. 148(2007)

only the owned past values of X_2. The application of Granger causality assumes that the analyzed signals are covariance stationary. The null hypothesis of the Granger causality states that X_1 does not cause X_2. If the p-value is greater than the significance level, we fail to reject the null hypothesis.

3.1.6. Impulse Response Function

The second investigation of researchers in VAR models is the dynamic effect begotten by the change of one variable to another. Hence, interest will be direct to the impulse response functions' outcomes. Afterward a one unit increase or one standard deviation increase in the present value of one of the VAR errors terms, the scope of the impulse response function is to figure out the response of the present and forthcoming values of each variable. However, it is assumed that the error will subsequently return to zero while holding the others errors terms constant. Also, the errors terms must not be correlated across equations in the system.

3.2. DATA

The data here are clustered in two. Those which are not employed in the regression model and the others applied in the estimated model.

3.2.1. Relation bank-private sector

One issue raised in this paper is the relation between banks and the private sector mainly with small and medium enterprises. Indeed, the previous points of the literature mentioned their significance for job creation when they are innovative and not constrained by financing. The estimation of banks relationship with firms is a weakness in this study.

Data are punctual, yearly specific to country and are available for one or two years. Hence, the data cannot be used for time series regression analysis. Yet some variables extracted from the enterprise survey of the International Financial Corporation will be used to depict the bank-private sector environment. These are: the percent of firms with a bank loan/line of credit, the proportion of loans requiring collateral (%), the value of collateral needed for a loan (% of the loan amount), the percent of firms not needing a loan, the proportion of investments financed by banks, and the percent of firms identifying access to finance as a major constraint. The latest study had been held in Ghana in 2013 with a sample of 720 firms. The most recent studies occurred after Ghana at year 2009 in Cape Verde and Cote d'Ivoire; and, respectively accounting 156 and 526 firms. Concerning Nigeria 1891 firms had been interviewed while 506 firms in Senegal 506. The surveys had been done in 2007.

3.2.2. Model variables

The data of this paper have been extracted from the World Development Indicators (2014). They cover the period of 1991 to 2012. Five countries are individually examined in this paper. They are Cape Verde, Cote d'Ivoire, Ghana, Nigeria and Senegal. To find out the questions raised in this research via the Granger causality test and the Impulse Response Function, the dependent variable refers to total unemployment in each country and the independent variable to financial development.

In the Western part of Africa, the market sector is fewer developed and expanded than the banking sector. Subsequently, this research has focused his choice of indicators on the banking sector to come with accurate and best outcomes. Moreover, the measurement evaluates the depth of the financial sector. However, numerous indicators

of financial deepening are within easy reach. To capture the significance of financial development and the best promising variables in specific countries, the research relies on two notorious proxies of financial deepening.

The first proxy of financial depth is the domestic credit to private sector by bank as percentage of GDP. In the log form, it is labeled "ldcpsgdp". Used by countless researchers, this measure is centered on investment tailored by banks towards the private sector. "Domestic credit to private sector by banks refers to financial resources provided to the private sector by other depository corporations (deposit taking corporations except central banks), such as through loans, purchases of nonequity securities, and trade credits and other accounts receivable, that establish a claim for repayment".

The second proxy is the comprehensive measure of financial depth, money in circulation, M3. Also named liquid liability, it is calculated as a percentage of the country's GDP and include all financial institutions. Liquid liabilities are "the sum of currency and deposits in the central bank (M0), plus transferable deposits and electronic currency (M1), plus time and savings deposits, foreign currency transferable deposits, certificates of deposit, and securities repurchase agreements (M2), plus travelers checks, foreign currency time deposits, commercial paper, and shares of mutual funds or market funds held by residents". This indicator is branded in his log form as "llqlygdp".

The first proxy, for directed the engine of development namely the private sector, has been estimated revelatory than the broadest measure of money in circulation by several researchers. However, liquid liabilities is also meaningful to the extent that the underprivileged can access to finance outside the financial zone.

With reference to unemployment, it is defined as the share of the labor force that is without work but available for and seeking employment (WDI, 2014). The data have been compiled in the log form and labeled "luntotal". The summary of the statistics are in the following table 1.

Table 1: Data Description

Countries	Variables	Mean	Standard deviation	Min	Max
Country 1 Capo Verde	Unemployment, total	7.89	0.12	7.60	8.10
	Domestic credit to private sector by banks (% of GDP)	35.69	17.22	4.45	65.28
	Liquid liabilities (M3) as % of GDP	68.60	13.12	34.91	87.74
Country 2 Cote d'Ivoire	Unemployment, total	4.44	0.77	4.00	6.70
	Domestic credit to private sector by banks (% of GDP)	18.13	5.85	13.45	35.60
	Liquid liabilities (M3) as % of GDP	26.89	4.57	21.68	38.37
Country 3 Ghana	Unemployment, total	6.09	2.68	3.20	10.40
	Domestic credit to private sector by banks (% of GDP)	10.84	4.16	3.66	15.83
	Liquid liabilities (M3) as % of GDP	26.20	5.03	15.56	34.11
Country 4 Nigeria	Unemployment, total	7.55	0.09	7.40	7.70
	Domestic credit to private sector by banks (% of GDP)	15.32	7.42	8.95	38.35
	Liquid liabilities (M3) as % of GDP	22.69	6.60	13.23	40.77
Country 5 Senegal	Unemployment, total	9.96	0.06	9.90	10.10
	Domestic credit to private sector by banks (% of GDP)	21.18	4.75	14.60	29.85
	Liquid liabilities (M3) as % of GDP	28.87	7.28	20.59	40.39

4. EMPIRICAL RESULTS

4.1. PRELIMINARY RESULTS: PRIVATE SECTOR AND ACCESS TO FINANCE

The outcomes from the enterprise survey tell how much firms are constrained by the banking sector in their respective countries. The whole pinpoint figures in the below analyses are inserted in the appendix A for Cape Verde, appendix B for Cote d'Ivoire, appendix C for Ghana, appendix D for Nigeria and appendix E for Senegal.

4.1.1. Cape Verde

In Cape Verde, 33.1% of small enterprises identified access to finance as a major constraint for their business running. This figure is not as much of medium and large enterprises which are respectively estimated at 45.1% and 57.4%. Even though it seems like fewer Small and Medium-sized Enterprises (SMEs) do not require funding to flourish, evidences show that they are disadvantaged when they aspire to bank's lending. Indeed, the collateral needed for a loan as a percentage of the loan amount is higher for small enterprises, 201.2%. However, large and medium companies must respectively guarantee 161.3% and 137.2%; although the value of the guarantee is for all firms above the requested amount of loan. This could explain why the proportion of investment financed by banks in Cape Verde is larger for medium enterprises (41%).

4.1.2. Cote d'Ivoire

Access to finance in Cote d'Ivoire differs from Cape Verde. It is rather a greater share of SMEs which acknowledged access to finance as a main restriction in the business running: small companies accounted for 66.4% while medium companies,

73.3%; and large companies, 45.4%. Subsequently, more SMEs have stated their necessity of external financing albeit their proportion of loan requiring collateral (30.4%) is 39% lower than those of the medium and large companies. Certainly other features of SMEs in Cote d'Ivoire hinder their access to finance. Their proportion of loan or line of credit is smaller than the large companies. Ten percent of small businesses are been conferred a loan or a credit line, 15.9% the medium businesses and 37.4% of large businesses.

4.1.3. Ghana

The 2013's Ghana findings are more truthful of the current environment between the banking system and the private sector. Inside it, it is about 51% of large Ghanaian firms which are bestowed of a loan or a credit line. However, it is around 20% of SMEs which can profit of this financial service. Also, despite the fact that large firms face higher proportion of loans requiring collateral, the survey conclusions reveal that they grant less value of collateral compare to SMEs. Nonetheless, the proportion of collateral required for a loan is very high. As in Cape Verde in 2009, the percentage of collateral goes over 200% of the loan value. However, it is smaller for large firms. Subsequently, small and medium firms identified access to finance as a major constraint to run their companies.

4.1.4. Nigeria

As in previous countries' analysis, fewer large firms complain about the access to finance as a major handicap to their businesses in Nigeria. In the survey of 2007, only 13.2% of large firms identified access to finance as their constraint against 59.3% of small firms. Despite the above-mentioned, few portion of companies profited of loan or

credit line. About 14.2% of large companies accessed to this financial service while 2.9% of small companies and 5.8% of medium companies profited of it. In addition, secure the loan recommended a share of collateral between 71 and 83% of the requested loan.

4.1.5. Senegal

Large and small firms are almost proportionally unanimous in declaring access to finance as a key impeding the business running in Senegal. Indeed, 51.6 % of the smaller companies and 54.5% of larger firms agree to this fact while 54.5% for while 34.1% for the medium enterprises. However, large businesses are better off in accessing loan. Fifty five of them obtained a line of credit, but only 10% of small businesses and 28% of medium ones have contracted this financial service.

The analysis of the banking lending system concludes that unlike to large firms, fewer SMEs can access to finance. In addition, within the majority of countries, the magnitude of SMEs mentioning they do not need a loan is smaller than the volume of large firms touching on the same idea. However more than twice of this aforementioned volume of SMEs acknowledged access to finance to finance as a main constraint to their enhancement. The excessive value of collateral could be the impediment of SMEs. Obstacles such as the business's management, technological innovation can also prevent SMEs to rely on external financing. Indeed, the improvement of businessmen managerial skills is relevant especially when it remains a buzzword in the sampled countries. Moreover, the commercial banks available within these countries fear the unpredictability of innovation.

4.2. FORMAL TEST FINDINGS

4.2.1. Unit root results

The table 2 displays the findings of the unit root test. Excepting liquid liabilities as percentage of GDP in Senegal and Cote d'Ivoire, all variables are declared stationary of order 0. As to M3, there are stationary at first difference. The model specification can then be completed via the Vector Auto Regression model.

Table 2: Unit Root Estimation

Countries	Variables	Level	Difference
Country 1 Capo Verde	Unemployment, total	-2.036**	
	Domestic credit to private sector by banks (% of GDP)	-3.386**	
	Liquid liabilities (M3) as % of GDP	-4.275***	
Country 2 Cote d'Ivoire	Unemployment, total	-1.919**	
	Domestic credit to private sector by banks (% of GDP)	-3.592**	
	Liquid liabilities (M3) as % of GDP	-5.31	-6.406***
Country 3 Ghana	Unemployment, total	-2.131**	
	Domestic credit to private sector by banks (% of GDP)	-2.212**	
	Liquid liabilities (M3) as % of GDP	-2.734***	
Country 4 Nigeria	Unemployment, total	-1.949**	
	Domestic credit to private sector by banks (% of GDP)	-2.266**	
	Liquid liabilities (M3) as % of GDP	-2.258**	
Country 5 Senegal	Unemployment, total	-3.894**	
	Domestic credit to private sector by banks (% of GDP)	-9.576***	
	Liquid liabilities (M3) as % of GDP	-0.424	-3.794***

This table presents the results of unit-root estimation at level and 1st difference. Note: ***, ** and * represent 1%, 5% and 10% levels of significance

4.2.2. Cape Verde

4.2.2.1. Domestic credit to private sector

- Diagnostic results

After issuing the test of lag length with the independent variable –domestic credit to private sector, the results have recommended a 3-years length. The diagnosis of the model shows that the Granger causality and the forecasting tests can be implemented. Indeed, the model satisfies the stability condition, all the eigenvalue are less than 1, then lies under the circle (table 3). Moreover, there is no serial correlation in the VAR model as a whole. At lag 1 and 2, both p-value of 0.838 and 0.845 are greater than the 5% level of significance. Then, the null hypothesis of no serial correlation is not rejected (table 4). Finally, the residuals of the model are normally distributed; p-value of approximately 0.13 (table 5) is greater than 0.05; and null hypothesis stating that residuals are normally distributed fails to be rejected. Our VAR model has passed the diagnosis checking.

Table 3: Eigenvalue Stability Test's Results in Cape Verde: Proxy 1

Eigenvalue		Modulus
0.9277321		0.927732
-0.7236781		0.723678
0.4068282	+ .3643967i	0.546163
0.4068282	- .3643967i	0.546163
0.2994445		0.299445
0.00269814		0.002698

Table 4: Lagrange-multiplier Test's Result in Cape Verde: Proxy 1

lag	chi2	Df	Prob > chi2
1	1.4346	4	0.83815
2	1.3903	4	0.84589

H0: no autocorrelation at lag order

Table 5: Skewness Test's Results in Cape Verde: Proxy 1

Equation	Skewness	chi2	Df	Prob > chi2
Luntotal	-0.23996	0.182	1	0.66937
lpcreditgdp	-1.1106	3.906	1	0.04812
ALL		4.088	2	0.12949

- Granger causality

Table 6: Results from Granger Causality Wald in Cape Verde: Proxy 1

Equation	Excluded	chi2	df	Prob > chi2
luntotal	ldcpsgdp	29.009	3	0.000
luntotal	ALL	29.009	3	0.000

With lag of 3, p-value of $0.000 < 5\%$, the null hypothesis is rejected. Then, the indicator of financial development Granger causes unemployment in Cape Verde.

- Impulse Response Function

An unexpected increase of 1% domestic credit to private sector will affect unemployment in Cape Verde the first, second and third year. The effect will be a reduction of unemployment by 0.4%, 0.58% and 0.56% respectively. As shown in the graph from the fourth year the results are not significant. Indeed, looking at the vertical axis, the confidence interval (CI) would have not include zero for concluding results.
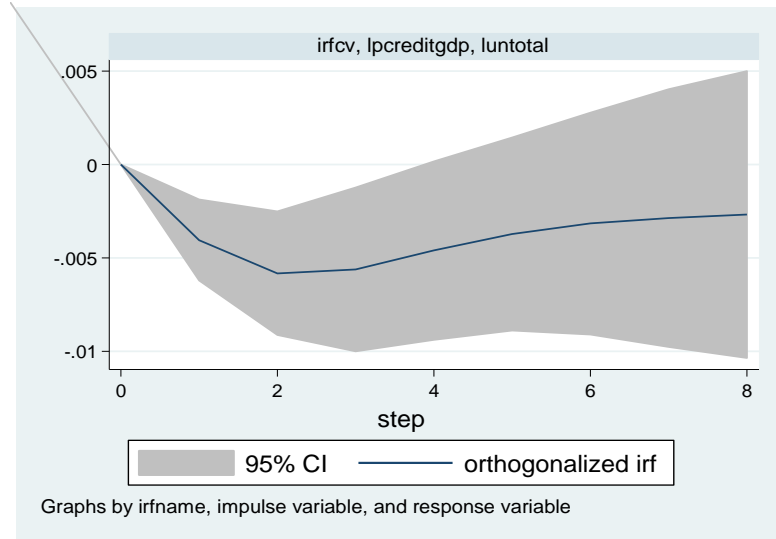
Figure 1: Impulse Response Graph in Cape Verde with the Proxy 1

Table 7: Results from Impulse Response Function in Cape Verde: Proxy 1

Step	(1) Oirf	(1) Lower	(1) Upper
0	0	0	0
1	-0.004046	-0.006217	-0.001876
2	-0.005823	-0.009131	-0.002515
3	-0.005615	-0.010001	-0.001229
4	-0.004608	-0.009391	0.000175
5	-0.003732	-0.008897	0.001434
6	-0.003161	-0.009096	0.002774
7	-0.002868	-0.009765	0.004029
8	-0.002682	-0.01037	0.005006

95% lower and upper bounds reported
(1) impulse = ldcpsgdp, and response = luntotal

4.2.2.2. *Liquid liabilities*

- Diagnostic findings

Unlike to domestic credit to private sector, the model containing liquid liability is advocated to maintain a length of one year for the lagged variables. Similarly to the

31

previous model with a different indicator of financial development, this one has passed the diagnosis checking. Firstly, the VAR model satisfies the stability condition (table 8). Secondly, the Lagrange-multiplier test reveals a no serial correlation within the model at lag 1 and 2. At lag 1, the p-value of 0.28 and is greater than 0.05, the level of significance. At lag 2 the p-value is also greater than the level of significance (table 9). Then, we failed to reject the null hypothesis of no serial correlation. Thirdly, the residuals within the VAR are normally distributed. Indeed, both p-value via the Skewness test are greater than 5% (table 10). The null hypothesis cannot be rejected.

Table 8: Eigenvalue Stability Test Results in Cape Verde: Proxy 2

Eigenvalue	Modulus
0.8808248	0.8808248
0.7827224	0.7827224

Table 9: Lagrange-multiplier Test Results in Cape Verde: Proxy 2

lag	chi2	Df	Prob > chi2
1	5.0584	4	0.28136
2	0.3509	4	0.98630

Table 10: Skewness Test Results in Cape Verde: Proxy 2

Equation	Skewness	chi2	df	Prob > chi2
luntotal	-0.19401	0.132	1	0.87118
llqlygdp	0.43362	0.658	1	0.51414
ALL		0.79	2	0.79775

- Granger causality

The conclusions brought about by the table 11 refute the probability that liquid liabilities in Cape Verde Granger cause unemployment. The probability value is greater than 5%.

Table 11: Results from Granger Causality Wald tests in Cape Verde: Proxy 2

Equation	Excluded	chi2	df	Prob > chi2
luntotal	llqlygdp	0.2388	1	0.625
luntotal	ALL	0.2388	1	0.625

- Impulse Response Function

In the next 8 years, any 1% positive change in liquid liabilities in Cape Verde will not have any impact on unemployment.
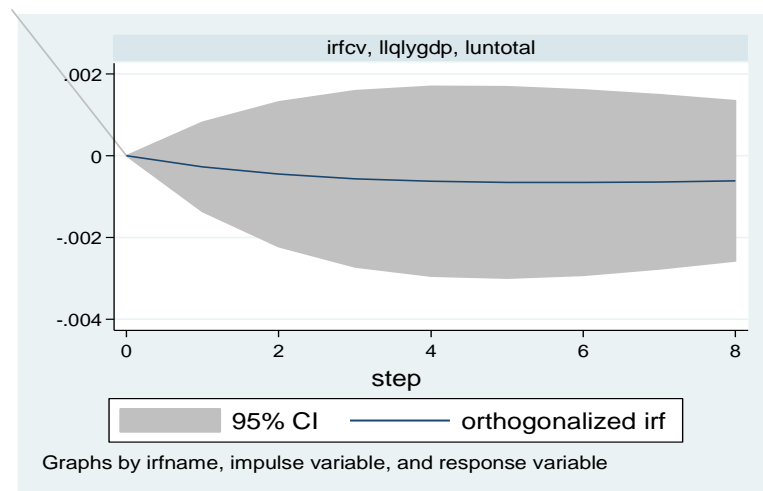
Figure 2: Impulse Response Graph in Cape Verde with the Proxy 2

Table 12: Results from Impulse Response Function

Step	(1) Oirf	(1) Lower	(1) Upper
0	0	0	0
1	-0.000271	-0.00136	0.000819
2	-0.000451	-0.002221	0.00132
3	-0.000563	-0.002715	0.001589
4	-0.000626	-0.002947	0.001695
5	-0.000653	-0.002995	0.00169
6	-0.000655	-0.002921	0.001612
7	-0.000639	-0.002769	0.001491
8	-0.000612	-0.002573	0.0013

95% lower and upper bounds reported
(1) impulse = ldcpsgdp, and response = luntotal

Looking at different lag period, domestic credit to private sector as a percentage of GDP has been proven to be the most appropriate indicator to lessen unemployment rate in Cape Verde. Thus, the argument of Schumpeter can be valid in this country. Banks can favor the falling of unemployment by granting loans to SMEs and entrepreneurs. In the 2009 enterprise survey of Cape Verde, there are more medium firms wishing to finance their investments through the banks.

4.2.3. Cote d'Ivoire

4.2.3.1. Domestic credit to private sector

- Diagnostic findings

At the recommended 4 years of lagged variables with the second proxy in Cote d'Ivoire, the VAR model satisfies the three diagnostic tests enumerated in the methodology step. Table 13 shows that the model fulfills the stability condition. The Lagrange-multiplier findings in the table 14 reports that there is no serial correlation in the VAR model at lag 1 and 2. Both p-values are greater than the level of significance which is 5%. Hence the null hypothesis is not rejected. The table 15 tells us that the residuals are normally distributed in the model.

Table 13: Eigenvalue Stability Results in Cote d'Ivoire: Proxy 1

Eigenvalue		Modulus
0.824262	+ .353144i	0.896727
0.824262	-0.3531144i	0.896727
-0.4098971	+0.5867237i	0.715724
-0.4098971	+0.5867237i	0.715724
0.396185		0.396185
-0.01282371	+0.3702517i	0.370474

-0.01282371	+0.3702517i	0.370474
0.353332		0.353332

Table 14: Lagrange-multiplier Results in Cote d'Ivoire: Proxy 1

lag	chi2	df	Prob > chi2
1	4.2316	4	0.37557
2	0.9917	4	0.91105

Table 15: Skewness Results in Cote d'Ivoire: Proxy 1

Equation	Skewness	chi2	df	Prob > chi2
luntotal	0.40794	0.499	1	0.47983
ldcpsgdp	-0.19534	0.114	1	0.7351
ALL		0.614	2	0.73575

- Granger causality

Table 16: Results from Granger Causality Wald tests in Cote d'Ivoire: Proxy 1

Equation	Excluded	chi2	df	Prob > chi2
luntotal	ldcpsgdp	77.246	4	0.000
luntotal	ALL	77.246	4	0.000

Within the VAR model of four years of lagged variables, domestic credit to private sector by banks has a causal effect on total unemployment in Cote d'Ivoire. Indeed, the null hypothesis is rejected since p-value in the above table 16 is less than 0.05.

- Impulse Response Function

Figure 3: Impulse Response Graph in Cote d'Ivoire with the Proxy 1

Table 17: Results from Impulse Response Function in Cote d'Ivoire: Proxy 1

Step	(1) oirf	(1) Lower	(1) Upper
0	0	0	0
1	-0.004414	-0.006599	-0.002228
2	-0.004426	-0.007307	-0.001546
3	-0.003301	-0.006564	-0.000039
4	-0.001779	-0.00543	0.001873
5	-0.000649	-0.004819	0.003521
6	0.000608	-0.004054	0.005271
7	0.00154	-0.003387	0.006467
8	0.001947	-0.002813	0.006706

95% lower and upper bounds reported

(1) impulse = lpcreditgdp, and response = luntotal

The results issued from the previous table reports that in the next three years a positive shock on domestic credit to private sector will reduce unemployment rate in Cote d'Ivoire. At year 1 and 2, the decline will be of 0.4% each. At the third year a drop of 0.33% will be perceived.

4.2.3.2. Liquid liabilities

- Diagnostic findings

The present model covering 2 years of lagged values has passed the diagnostic checking. Indeed, the model is stable. There is no serial correlation in the model at lag 2 (table 19). Besides that, the model as a whole encompasses normally distributed residuals. At 5% of significance level, the p-value of 0.064 (table 29) is greater than 0.005, hence the null hypothesis is rejected.

Table 18: Eigenvalue Stability Results in Cote d'Ivoire: Proxy 2

Eigenvalue		Modulus
0.3907659		0.390766
-0.2519854	+0.2219238i	0.335778
-0.2519854	-0.2219238i	0.335778
0.3088098	- .3643967i	0.30881

Table 19: Lagrange-multiplier Results in Cote d'Ivoire: Proxy 2

Lag	chi2	df	Prob > chi2
1	38.5437	4	0.00000
2	1.7282	4	0.78560

Table 20: Skewness Results in Cote d'Ivoire: Proxy 2

Equation	Skewness	chi2	df	Prob > chi2
luntotal	-1.3063	5.404	1	0.02009

dllqlygdp	-0.16197	0.083	1	0.77317
ALL		5.487	2	0.06434

- Granger causality

The yearly change of liquid liabilities does not Granger cause total unemployment in Cote d'Ivoire. As demonstrated through the Granger causality Wald tests within the 21st table, p-value is greater than 0.05. Consequently, we failed to reject the null hypothesis.

Table 21: Results from Granger Causality Wald Tests in Cote d'Ivoire: Proxy 2

Equation	Excluded	chi2	df	Prob > chi2
luntotal	dllqlygdp	0.23388	2	0.890
luntotal	ALL	0.23388	2	0.890

- Impulse Response Function

In the eight coming years, even though liquid liabilities face a shock in Cote d'Ivoire, this will not cause any statistically significant change in unemployment. A one percent rising of financial development will have no incidence of unemployment rate (table 22).

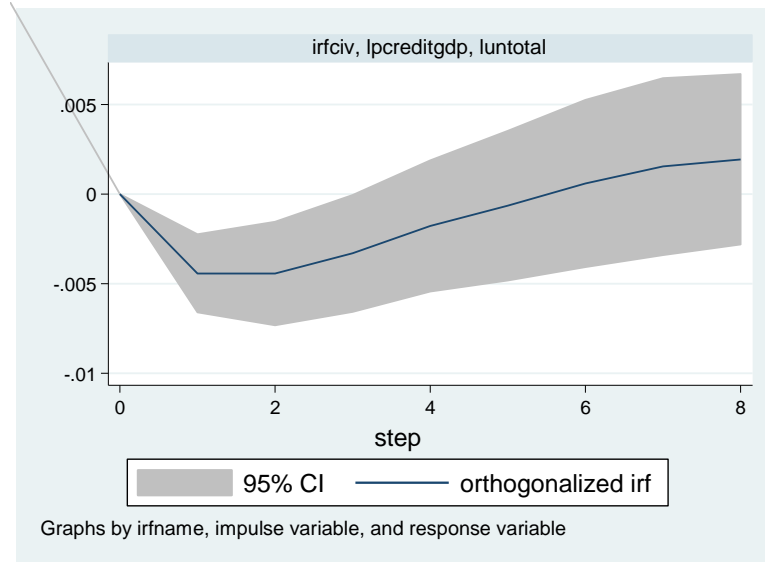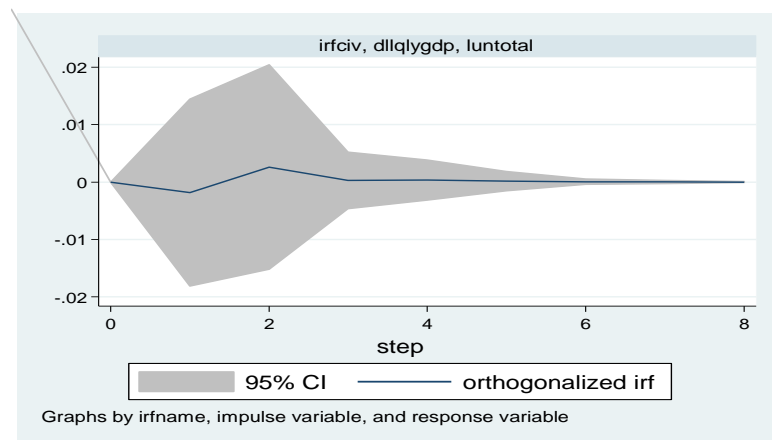Figure 4: Impulse Response Graph in Cote d'Ivoire with the Proxy 2

Table 22: Results from Impulse Response Function in Cote d'Ivoire: Proxy 2

Step	(1)	(1)	(1)

	oirf	Lower	Upper
0	0	0	0
1	-0.001827	-0.018122	0.014467
2	-0.002628	-0.015186	0.020443
3	0.000296	-0.004615	0.005208
4	0.000338	-0.003153	0.003829
5	0.000174	-0.001508	0.001856
6	0.000044	-0.000427	0.000515
7	0.000031	-0.000251	0.000313
8	9.90E-06	-0.000072	0.000092

95% lower and upper bounds reported

(1) impulse = dllqlygdp, and response = luntotal

In Cote d'Ivoire, scale up the level of domestic credit to the private sector is the appropriate instrument to decrease unemployment level. This variable Granger causes unemployment but also if raising up by 1% the level of unemployment will fall.

4.2.4. Ghana

4.2.4.1. *Domestic credit to private sector*

- Diagnostic findings

In the Ghana example, the VAR model with the proxy of domestic credit to private sector as a percentage of GDP has passed the three tests of diagnostic. The lagged variables have a length of one year in the model. Model meeting the stability condition, since all the eigenvalues in the table 23 are less than 1. Furthermore there is no serial correlation in the VAR. The probability values resulting of the Lagrange-multiplier test at lag 1 and 2 are higher than the 5% percent of significance level; then, the null hypothesis is not rejected. Finally, the test of Skewness (table 25) testifies of the normality of the residuals in the VAR.

Table 23: Eigenvalue Stability Results in Ghana: Proxy 1

Eigenvalue	Modulus
0.8404158	0.8404160

0.5795794	0.5795790

Table 24: Lagrange-multiplier Results in Ghana: Proxy 1

lag	chi2	df	Prob > chi2
1	5.2019	4	0.2672
2	4.8617	4	0.30178

Table 25: Skewness Results in Ghana: Proxy 1

Equation	Skewness	chi2	df	Prob > chi2
luntotal	0.52329	0.958	1	0.32759
ldcpsgdp	-0.40459	0.573	1	0.44909
ALL		1.531	2	0.46502

- Granger causality

With just one year of past values recommended within this model, the test of causality viewing from Granger has been revealed negative. The causal relationship from our proxy of financial development – domestic credit to private sector – to unemployment does not exit. The findings in the table 26 prove it; the p-value of 0.433 is superior to the level of significance 0.05. Therefore, we fail to reject the null hypothesis stating that ldcpsgdp does not Granger cause unemployment.

Table 26: Results from Granger Causality Wald Tests in Ghana: Proxy 1

Equation	Excluded	chi2	df	Prob > chi2
luntotal	ldcpsgdp	0.61542	1	0.433
luntotal	ALL	0.61542	1	0.433

- Impulse Response Function

At a one percent shock on domestic credit to private sector, unemployment eight years forecasting of unemployment unveils the null effect of the increase in Ghana. Indeed,

even if the below graph show a decreasing of unemployment, the results are not statistically significant.

Figure 5: Impulse Response Graph in Ghana with the Proxy 1

Table 27: Results from Impulse Response Function in Ghana: Proxy 1

Step	(1) Oirf	(1) Lower	(1) Upper
0	0	0	0
1	-0.01808	-0.063564	0.027413
2	-0.02567	-0.089146	0.040182
3	-0.02764	-0.095466	0.040182
4	-0.02675	-0.092288	0.038788
5	-0.02452	-0.084762	0.03572
6	-0.02179	-0.075618	0.032038
7	-0.018997	-0.066284	0.028289
8	-0.016363	-0.057474	0.024748

95% lower and upper bounds reported

(1) impulse = ldcpsgdp, and response = luntotal

4.2.4.2. *Liquid liabilities*

- Diagnostic findings

The choice of past values in this model lead to four-years lagged variables models with the proxy 2 of financial development that is liquid liabilities. After running the regression, the model has passed the checking. Firstly, the stability condition for the model is satisfied. Secondly, the VAR model does not include any serial correlation as demonstrated within the outcomes of the Lagrange-Multiplier test of the table 29. Thirdly, the residuals are normally distributed in the model; the probability values for each single variable and for both are greater than the level of significance of 5 percent (table 30).

Table 28: Eigenvalue Stability Results in Ghana: Proxy 2

Eigenvalue		Modulus
0.997342		0.997342
-0.54305	+ .6659888i	0.859326
-0.54305	- .6659888i	0.859326
-0.33656	+ .7558163i	0.827364
-0.33656	- .7558163i	0.827364
0.645013	+ .4755581i	0.801372
0.645013	- .4755581i	0.801372
0.608052		0.608052

Table 29: Lagrange-multiplier Results in Ghana: Proxy 2

Lag	chi2	df	Prob > chi2
1	4.8327	4	0.30489
2	2.5164	4	0.64169

Table 30: Skewness Results in Ghana: Proxy 2

Equation	Skewness	chi2	df	Prob > chi2
luntotal	-0.35889	0.386	1	0.5342
llqlygdp	-0.59677	1.068	1	0.30131
ALL		1.455	2	0.48316

- Granger causality

The Granger causality test proves that there is a causal link between the two variables from liquid liability to unemployment with the four lagged variables. Indeed, the null hypothesis is rejected since p-value is inferior to the five percent level of significance.

Table 31: Results from Granger Causality Wald Tests in Ghana: proxy 2

Equation	Excluded	chi2	df	Prob > chi2
luntotal	llqlygdp	10.094	4	0.039
luntotal	ALL	10.094	4	0.039

- Impulse Response Function in Ghana: proxy 2

With the results of the impulse response function, it is possible to improve the situation of jobseekers in Ghana. This can be done by raising the level of liquid liabilities. Indeed, with a one percent intensification of liquid liabilities at present year, the forthcoming third and fourth year will spot a dropping of unemployment respectively by 0.2% and 0.09%. Beside this, another shrinking of unemployment will occur at the sixth year (table 32). These results are statistically significant.
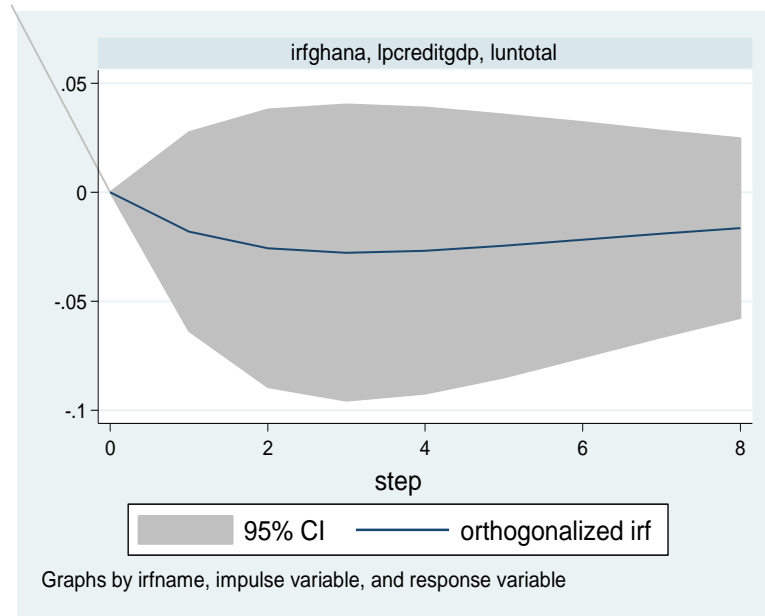
Figure 6: Impulse Response Graph in Ghana with the Proxy 2

Table 32: Results from Impulse Response Function in Ghana: proxy 2

Step	(1) Oirf	(1) Lower	(1) Upper
0	0	0	0
1	-0.04252	-0.11876	0.033725
2	-0.04798	-0.13036	0.034391
3	-0.09831	-0.17617	-0.02045
4	-0.08969	-0.17019	-0.00919
5	-0.05734	-0.13586	0.021173
6	-0.08984	-0.1769	-0.00278
7	-0.05882	-0.13885	0.021219
8	-0.03622	-0.11308	0.04065

95% lower and upper bounds reported

(1) impulse = llqlygdp, and response = luntotal

The findings in Ghana differ from our previous countries. It is rather the comprehensive money supply which can give a hand in unemployment decreasing. Domestic credit to private sector even if increasing by 1% would not be able to negatively affect the unemployment rate. The value of domestic credit as a percentage of GDP has reached is highest value of 14% in 2012. Besides, fewer SMEs can access to a bank loan as the large firms.

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4.2.5. Nigeria

4.2.5.1.   *Domestic credit to private sector*

- Diagnostic findings

In determining how many years of lagged variables will tie to the Nigeria's VAR model with domestic credit to private sector, 1 year of lagged value is recommended. Therefore proceeding to the model analysis points out the stability of the model since all the Eigenvalue lie under the circle. There values are lower than 1 (table 33). Moreover, the model does not include a serial correlation. The p-value inside the 34th table representing the Lagrange-multiplier test is superior to the significance level. Lastly, the residuals are normally distributed as exposed within the 35th table – the Skewness test results. Hence the model has handled the diagnosis checking.

Table 33: Eigenvalue Stability Results in Nigeria: Proxy 1

Eigenvalue	Modulus
0.779435	0.779435
0.475403	0.475403

Table 34: Lagrange-multiplier Results in Nigeria: Proxy 1

Lag	chi2	df	Prob > chi2
1	6.4394	4	0.16865
2	4.3647	4	0.3589

Table 35: Skewness Results in Nigeria: Proxy 1

Equation	Skewness	chi2	df	Prob > chi2
luntotal	0.79714	2.224	1	0.13588
ldcpsgdp	0.45514	0.725	1	0.39449
ALL		2.949	2	0.22889

- Granger causality

In testing the causal relationship's hypothesis from domestic credit to private sector as percentage of GDP to unemployment, the Granger causality brought about a no causal

link between the variables at one year of past values. The p-value of 0.189 is greater than 0.05. We hence failed to reject the null hypothesis specifying that ldcpsgdp does not cause unemployment.

Table 36: Results from Granger Causality Wald Tests in Nigeria: Proxy 1

Equation	Excluded	chi2	df	Prob > chi2
luntotal	ldcpsgdp	1.7247	1	0.189
luntotal	ALL	1.7247	1	0.189

- Impulse Response Function

With a shock on domestic credit to private sector, this will not impact unemployment level within Nigeria in the eight coming years. Indeed, even though the graph shows an upshifting then a decrease in unemployment rate, those results are not statistically significant. The band of the confidence interval includes zero from the ordinate axis of the Impulse Response Function.
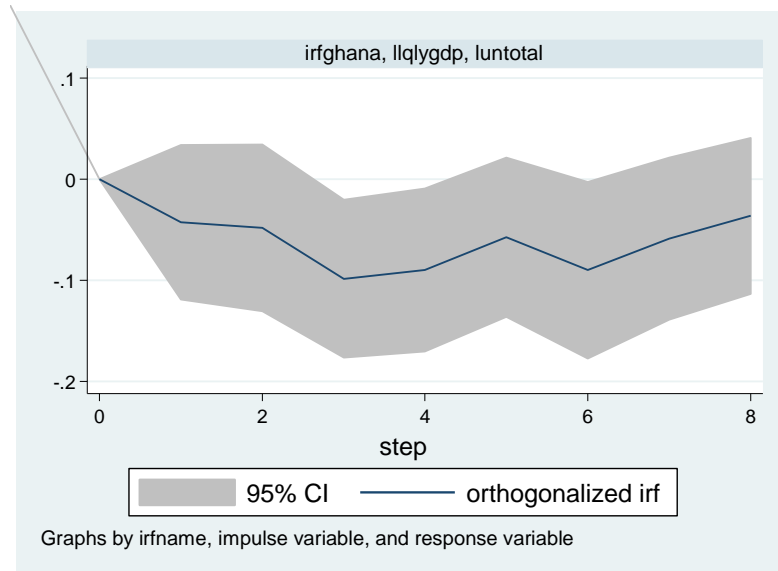

Figure 7: Impulse Response Graph in Nigeria with the Proxy 1

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Table 37: Results from Impulse Response Function in Nigeria: Proxy 1

Step	(1) Oirf	(1) Lower	(1) Upper
0	0	0	0
1	0.001485	-0.00078	0.003745
2	0.001863	-0.00084	0.004567
3	0.001788	-0.00084	0.004418
4	0.001553	-0.00087	0.003973
5	0.001286	-0.00089	0.003461
6	0.001039	-0.00089	0.002965
7	0.000827	-0.00086	0.002515
8	0.000652	-0.00082	0.00212

95% lower and upper bounds reported
(1) impulse = ldcpsgdp, and response = luntotal

4.2.5.2. *Liquid liabilities*

- Diagnostic findings

Unlike the above model with domestic credit to private sector, the actual model includes 4 years of lagged variables. However, it satisfies the three checking test. Indeed, each of the eigenvalue lies under the circle, the different values are less than 1. Besides, there is no serial correlation within model. It is noticed in the table 39 that the p-values are above the level of significance. Hence, the null hypothesis is not rejected. To end, the results of normality test displays inside the table 40 demonstrate that the residuals are normally distributed. Subsequently, the hypotheses of this research can be tested for Nigeria with this second proxy of financial development.

Table 38: Eigenvalue Stability Results in Nigeria: Proxy 2

Eigenvalue		Modulus
0.555524	+ .7282245i	0.915925
0.555524	- .7282245i	0.915925
0.844898	+ .2997966i	0.89651
0.844898	- .2997966i	0.89651
-0.7349	+ .2408845i	0.773374
-0.7349	- .2408845i	0.773374
-0.34695	+ .6674066i	0.752203
-0.34695	- .6674066i	0.752203

Table 39: Lagrange-multiplier Results in Nigeria: Proxy 2

lag	chi2	Df	Prob > chi2
1	5.7697	4	0.21702
2	2.7524	4	0.60008

Table 40: Skewness Results in Nigeria: Proxy 2

Equation	Skewness	chi2	Df	Prob > chi2
luntotal	0.01952	0.001	1	0.97304
llqlygdp	0.04376	0.006	1	0.93958
ALL		0.007	2	0.99656

- Granger causality

In the table below, it is clearly proven than liquid liabilities in the model affects total unemployment in Nigeria. The table 41 discloses a p-value of 0.000 which is greater than the level of significance. Hence, the null hypothesis is rejected and llqlygdp Granger causes luntotal.

Table 41: Results from Granger Causality Wald Tests in Nigeria: Proxy 2

Equation	Excluded	chi2	df	Prob > chi2
luntotal	llqlygdp	21.926	4	0.000
luntotal	ALL	21.926	4	0.000

- Impulse Response Function

The previous test found a causal relationship between the both variables. However, a shock on liquid liabilities is more specific about the quality of the bound. Indeed, by rising financial development by one percent, unemployment will be reduced in Nigeria at the sixth year by 0.03% (table 42).
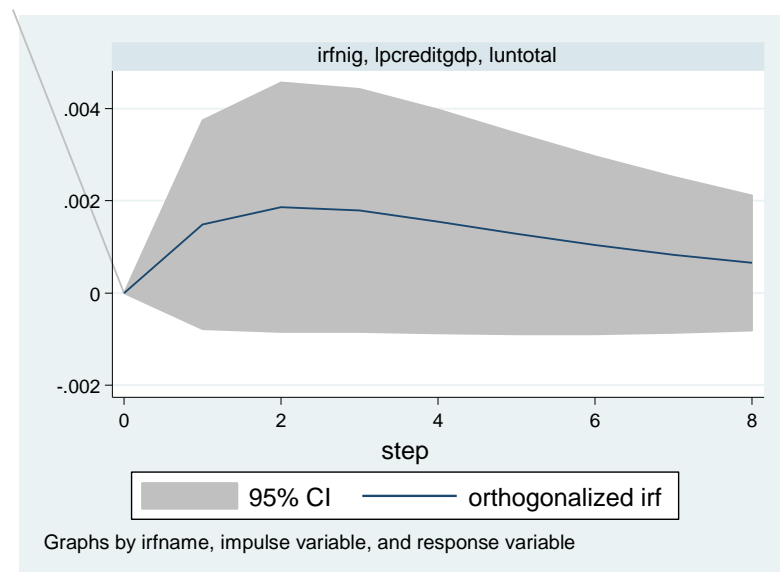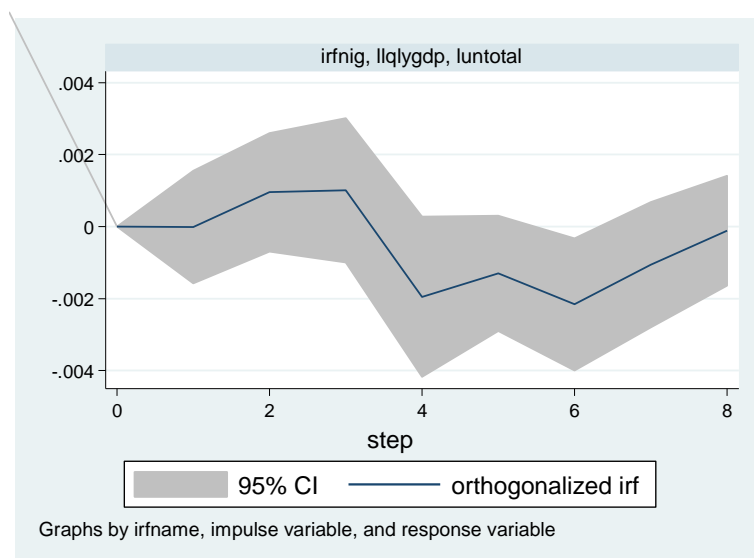

Figure 8: Impulse Response Graph in Nigeria with the Proxy 2

Table 42: Results from Impulse Response Function in Nigeria: Proxy 2

Step	(1) Oirf	(1) Lower	(1) Upper
0	0	0	0
1	-9.70E-06	-0.00157	0.001553
2	0.000952	-0.00069	0.002596
3	0.001004	-0.001003	0.00301
4	-0.00195	-0.00418	0.000274
5	-0.0013	-0.0029	0.000297
6	-0.00216	-0.003996	-0.000328
7	-0.001061	-0.002799	0.000676
8	-0.000118	-0.001643	0.001407

95% lower and upper bounds reported
(1) impulse = llqlygdp, and response = luntotal

The findings of Nigeria have identified only M3/GDP as the indicator to reduce unemployment rate in Nigeria. The enterprise survey of 2007 may contribute in explaining this outcome since it shows that access to finance was lower in Nigeria. Fourteen percent of large firms contracted a loan while 2.9% and 5.8% of small and medium firms obtained this opportunity. To add, the SMEs complained about their financing difficulty.

4.2.6. Senegal

4.2.6.1. Domestic credit to private sector

- Diagnostic findings

The determination of the lag length had led to 4 years of lagged variables in this VAR model. The model has passed the three test recommended to investigate the hypotheses of this research. The eigenvalue being less than one in the 43rd table, the model is stable. Following this, the 44th table specifies that the model does not contain any serial correlation. And, in the 45th table, the residuals have been found normally distributed.

Table 43: Eigenvalue Stability Results in Senegal: Proxy 1

Eigenvalue		Modulus
0.4955527	+ .8226881i	0.960410
0.4955527	+ .8226881i	0.960410
0.8394558		0.8394560
0.7777479		0.7777480
-0.6383158	0.3347275i	0.7207560
-0.6383158	0.3347275i	0.7207560
-0.1404934	+ .6721047i	0.6866320
-0.1404934	+ .6721047i	0.6866320

Table 44: Lagrange-multiplier Results in Senegal: Proxy 1

lag	chi2	Df	Prob > chi2
1	5.4294	4	0.24601

	2	2.4067	4	0.66142

Table 45: Skewness Results in Senegal: Proxy 1

Equation	Skewness	chi2	df	Prob > chi2
luntotal	0.59971	1.079	1	0.29893
ldcpsgdp	0.62575	1.175	1	0.27844
ALL		2.254	2	0.32406

- Granger causality

The four lagged variables model indicates that there is no "cause-effect" from domestic credit to private sector to total unemployment. Indeed, the table 46 points out a p-value greater than 5% level of significance. This allows a rejection of the null hypothesis.

Table 46: Results from Granger Causality Wald Tests in Senegal: Proxy 1

Equation	Excluded	chi2	df	Prob > chi2
luntotal	ldcpsgdp	5.8943	4	0.207
luntotal	ALL	5.8943	4	0.207

- Impulse Response Function

In aiming to determine whether domestic credit to private sector in Senegal can affect the level unemployment, the impulse response function has given the answer. By a 1% amplification of domestic credit at year 0, no positive or negative effect will be detected over the 8 coming years with unemployment rate.

Figure 9: Impulse Response Graph in Nigeria with the Proxy 1

Table 47: Results from Impulse Response Function in Senegal: Proxy 1

Step	(1) Oirf	(1) Lower	(1) Upper
0	0	0	0
1	0.000346	-0.000323	0.001015
2	-0.000506	-0.001142	0.00013
3	-0.000558	-0.001213	0.000097
4	-0.000011	-0.000577	0.000556
5	0.000318	-0.000274	0.00091
6	0.00036	-0.000232	0.000953
7	0.000046	-0.000444	0.000536
8	-0.000229	-0.000731	0.000273

95% lower and upper bounds reported
(1) impulse = ldcpsgdp, and response = luntotal

4.2.6.2. *Liquid liabilities*

- Diagnostic findings

In the case of liquid liabilities in Senegal the variables are at first difference level. They represent the percentage change of liquid liabilities from one year to the succeeding one. The length of lag values recommended for this model is four years. From the stability, Lagrange-multiplier and Skewness's tests, the model has passed the checking. Indeed, the

model is stable (table 48). It does not encompass a serial correlation (table 49). Then, the residuals are normally distributed (table 50).

Table 48: Eigenvalue Stability Results in Senegal: Proxy 2

Eigenvalue		Modulus
0.065699	+0.1484478i	0.162336
0.065699	+0.1484478i	0.162336

Table 49: Lagrange-multiplier Results in Senegal: Proxy 2

Lag	chi2	Df	Prob > chi2
1	3.7498	4	0.44093
2	0.9415	4	0.91854

Table 50: Skewness Results in Senegal: Proxy 2

Equation	Skewness	chi2	df	Prob > chi2
luntotal	0.48081	0.771	1	0.38003
dllqlygdp	-0.55427	1.024	1	0.31156
ALL		1.795	2	0.40766

- Granger causality

As for the first proxy of financial development, liquid liabilities do not Granger-cause unemployment rate in Nigeria. The p-value issued within the Granger causality Wald test is greater than the 5% level of significance.

Table 51: Results Granger Causality Wald Tests in Senegal: Proxy 2

Equation	Excluded	chi2	df	Prob > chi2
luntotal	dllqlygdp	1.2138	1	0.271
luntotal	ALL	1.2138	1	0.271

- Impulse Response Function

In order to know whether liquid liabilities would impact unemployment, the impulse response outcomes do not reveal a statistically significant impact in the 8 coming years. Indeed, escalating liquid liabilities by one percent will not affect unemployment rate.
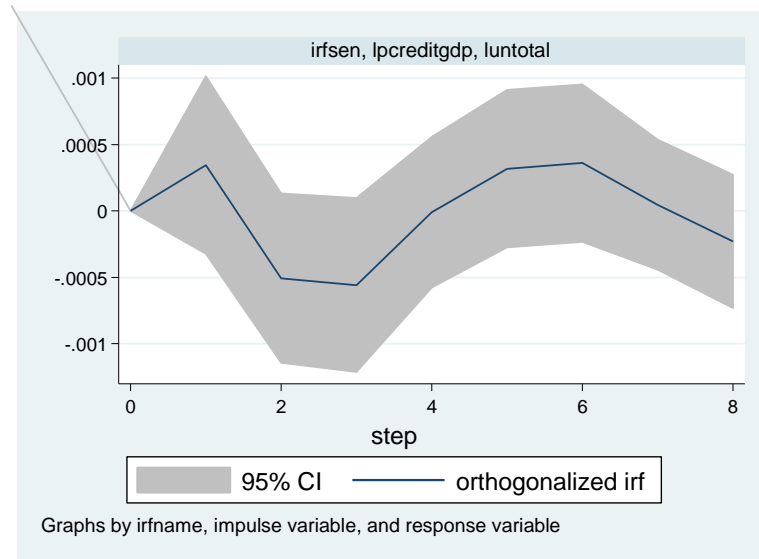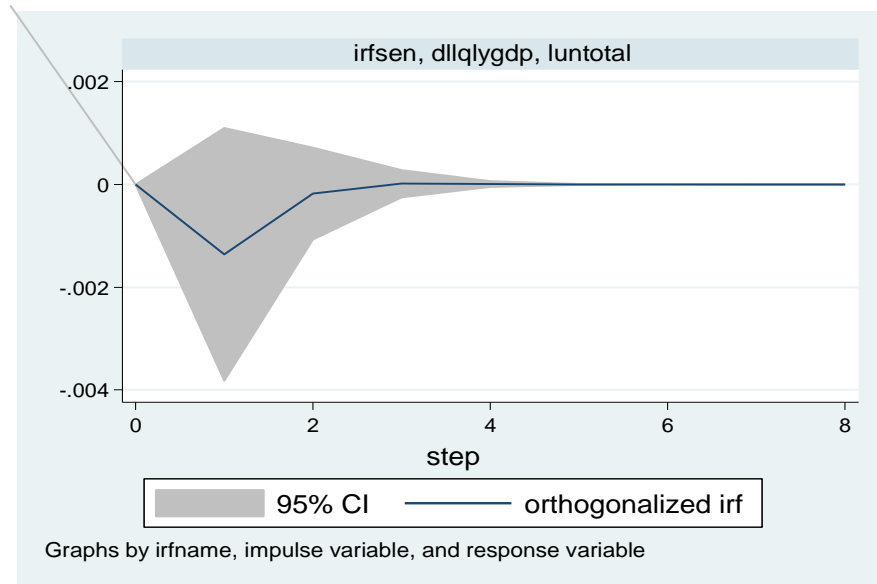
Figure 10: Impulse Response Graph in Senegal with the Proxy 2

Table 52: Results from Impulse Response Function in Senegal: Proxy 2

Step	(1) Oirf	(1) Lower	(1) Upper
0	0	0	0
1	-0.00136	-0.003817	0.001096
2	-0.00018	-0.001073	0.000715
3	0.000012	-0.00025	0.000275
4	6.30E-06	-0.000053	0.000066
5	5.10E-07	-9.20E-06	0.00001
6	-1.00E-07	-2.60E-06	2.40E-06
7	-2.70E-08	-4.70E-07	4.20E-07
8	-8.40E-10	-7.00E-08	6.90E-08

95% lower and upper bounds reported
(1) impulse = dllqlygdp, and response = luntotal

The two proxies of financial development have no causal link with unemployment rate.

Moreover, scaling up their share as percentage of GDP would not be inductive to

minimize unemployment level in Senegal.

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5. CONCLUSION AND RECOMMENDATIONS

Financial development has been prescribed as a relevant tool to foster inclusive economic growth. However, the majority of investigators who have tested this hypothesis have focused on whether financial development can reduce inequality and poverty. Their researches are either country-specific, grasped by economy level or regional. Depending on the region, the economy, the choice of variable and the value of indicator their findings are either positive or negative. In spite of the fact that poverty, inequality and unemployment are linked, few scholars studied the impact of financial development on unemployment. Though, the review of the literature explains how financial development could foster job creation.

Reviewing many scholarly works has led to the particularity of a developed financial system in producing unemployment reduction in every economy via diverse ways. For this purpose, the channels conducting to this specific aftermath of the financial development have been grouped into three. All three channels rely on the ability of the financial system to lower the costs of generating, mobilizing and pooling saving in order to finance productive investment (Levine, 1997). To add to the aforementioned requirement, if only the wealthier, the educated, and those politically connected access to capital, this will not rise job opportunities.

Indeed, when the banking system can allow capital accumulation, the firms requiring external capital would expand their businesses; hence job creation. Capital accumulation is the first channel to decrease unemployment level in a country. Beside this channel, entrepreneurship is the second channel proposed by Schumpeter (1934) and others scholars. Studies reveal that entrepreneurs participate deeply in job reduction but

those business owners lack of financial resources to start up or grow up their companies. The last channel is via the reduction of poverty and inequality. Financial development affects the extent to which economic opportunities contrast between rich and poor. Actually financial development can allow the extensive margins to use the financial services. Moreover, the excluded can profit of the rising demand for low skilled labor and new policy implementation. This study attempts to fill this gap in the literature by conducting an empirical research for five middle income countries of the western Africa.

To elucidate the questions raised in this paper, two groups of data have been collected. The first data are from the enterprise survey of the International Financial Corporation and cover a period which is specific to each country. Those data portray the relation and the aftermaths of the private sector with banks in accessing loans. The second type of data was drawn up from the World Development Indicators (2014). They are spread over the period 1991-2012. Unemployment rate is the dependent variable whereas liquid liabilities (% of GDP) and domestic credit to private sector by banks (% of GDP) the proxies of financial development, the independent variable. The main objectives was to determine whether financial Granger-causes unemployment in each country but also whether in the long run an increase of financial development can lower unemployment.

With the empirical findings, the variables are stationary of order 0 except liquid liabilities in Cote d'Ivoire and Senegal; with the same Dicker fuller test they are stationary at first difference. The causal relationship from domestic credit to private sector is proven in two countries Cape Verde and Cote d'Ivoire. In those countries, it is demonstrated that at the impulse of the proportion of domestic credit to private sector as

percentage of GDP, unemployment will fall in the first three years for both economies. In Ghana and Nigeria, it is the proxy M3/GDP which will Granger cause unemployment. Moreover, escalating liquid liabilities as percentage of GDP by 1% will lessen the unemployment in Ghana and Nigeria. However, this impact will appear at long run that is the third, fourth and sixth year in Ghana; and only at the sixth year in Nigeria. The impact in those last countries are lower than those of Cape Verde and Cote d'Ivoire. In the case of Senegal both proxies of financial development do not Granger-cause unemployment. In addition, a positive shock on financial development will not impact the unemployment rate.

The findings with money supply ratio contrast with the results of Shabbir et al (2012). Those with the ratio of domestic credit to private sector by banks correspond with the outcomes of Shabbir et al (2012) in Cape Verde and Cote d'Ivoire. However, whatever the proxy when it induces unemployment rate declining in the economy is consistent with the literature review. Consequently, policy makers must favor domestic credit to private sector in order to decrease unemployment level in Cape Verde and Cote d'Ivoire. For the others economies as well the two aforementioned, they must make inquiry into the impediments of firms to access finance. Moreover, for the Nigeria and Ghana, emphasis must be directed to the comprehensive money supply and also on microfinance because regular lending from bank is not sufficient to the reduction of unemployment levels.

The aforementioned situation where financial development could not decrease unemployment in some countries matches with one theory of this research. Indeed, we stated that if only the wealthy, the educated and the politically connected profit of the

financial development, it will not favor job creation. The results of the enterprise survey showed in each sampled country a greater proportion of small and medium firms qualifying their access to finance as a constraint to the development of their activity. Moreover, fewer of them are granted of loans while more large firms enjoyed this financial service. This paper suggests financial development as a key to unemployment decrease. However further studies must focus implement a better model including more explanatories variables and a minimum length period of 30 years. Moreover, it is recommended to find out the obstacles which impede entrepreneurs in accessing loan. And finally priority must be given to domestic credit to private sector. Indeed, its positive effect in unemployment reduction last over time and occur at a fast pace than the comprehensive money supply.

ANNEXES

Table 53: Relation Banking System – Private Sector in Cape Verde

Indicators	Business Sector		Firms size			Ownership	
	Manufacturing	Services	Small	Medium	Large	Domestic	10% or more foreigner
Percent of firms with a bank loan/line of credit	13.7	50.2	38.6	47.4	63.7	42.7	33.6
Proportion of loans requiring collateral (%)	89.3	98.5	87.3	95.6	100	89.4	96.4
Value of collateral needed for a loan (% of the loan amount)	212.4	174	201.2	137.2	161.3	180.2	n.a.
Percent of firms not needing a loan	30.8	30.4	30.1	27.2	50	32.2	15.7
Proportion of investments financed by banks (%)	12.4	27.7	18.7	41	20.1	26.4	10.9
Percent of firms identifying access to finance as a major constraint	3705	36.4	33.1	45.1	57.4	32.9	59.6

ANNEX B

Table 54: Relation Banking System – Private Sector in Cote d'Ivoire

Indicators	Business Sector		Firms size			Ownership	
	Manufacturing	Services	Small	Medium	Large	Domestic	10% or more foreigner
Percent of firms with a bank loan/line of credit	10.3	11.9	10.1	15.9	37.4	11.9	8.8
Proportion of loans requiring collateral (%)	88	31.3	30.4	86.2	71	40.9	60.7
Value of collateral needed for a loan (% of the loan amount)	65	48.3	31.1	78.8	78.2	52.9	72.9
Percent of firms not needing a loan	7.7	17.6	15.4	10.7	24.6	13.4	25.3
Proportion of investments financed by banks (%)	3.4	3.8	3.3	4.4	7.2	3.9	3
Percent of firms identifying access to finance as a major constraint	82.3	61.1	66.4	73.3	45.4	70.3	40.6

ANNEX C

Table 55: Relation Banking System – Private Sector in Ghana

Indicators	Business Sector		Firms size			Ownership	
	Manufacturing	Services	Small	Medium	Large	Domestic	10% or more foreigner
Percent of firms with a bank loan/line of credit	22.2	24.7	19.9	22.9	50.8	23.6	21.8
Proportion of loans requiring collateral (%)	85.3	74	70.6	87.9	95.3	79.1	82.3
Value of collateral needed for a loan (% of the loan amount)	212.7	258.8	259.8	213.4	215.8	246.9	n.a.
Percent of firms not needing a loan	21.2	23.8	19.6	22.5	44.1	21.8	26.4
Proportion of investments financed by banks (%)	14.4	10.6	8.1	15	25.7	12.3	13.9
Percent of firms identifying access to finance as a major constraint	58.4	66.2	71.5	52.1	23	66.5	39.4

Table 56: Relation Banking System – Private Sector in Nigeria

Indicators	Business Sector		Firms size			Ownership	
	Manufac turing	Services	Small	Medium	Large	Domestic	10% or more foreigner
Percent of firms with a bank loan/line of credit	3	4.4	2.9	5.8	14.2	3.6	23.2
Proportion of loans requiring collateral (%)	84.6	76	83	71.7	80.8	77.7	n.a.
Value of collateral needed for a loan (% of the loan amount)	159.4	128	147.2	106.4	n.a.	137.6	n.a.
Percent of firms not needing a loan							
Proportion of investment s financed by banks (%)	1.1	1.5	0.9	2	4.5	1.1	12.4
Percent of firms identifying access to finance as a major constraint	55.7	51.1	59.3	37.1	13.2	53.3	25

Table 57: Relation Banking System – Private Sector in Senegal

Indicators	Business Sector		Firms size			Ownership	
	Manufacturing	Services	Small	Medium	Large	Domestic	10% or more foreigner
Percent of firms with a bank loan/line of credit	16.1	14.8	10.8	28.1	55.5	13.9	36.7
Proportion of loans requiring collateral (%)	96.8	84.4	85.5	90.5	100	88.8	91.2
Value of collateral needed for a loan (% of the loan amount)	108	141	126.6	120	140.6	123.9	147.1
Percent of firms not needing a loan	18.8	25.5	21.8	32.5	8.8	23.4	12.7
Proportion of investments financed by banks (%)	9.9	12.5	9	7	45.3	8.2	33.7
Percent of firms identifying access to finance as a major constraint	51.1	48.2	51.6	34.1	54.5	50	36.3

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