

Stock Market Development and Economic Growth: The Case of West African Monetary Union

Aboudou Maman Tachiwou

Shanghai University of Finance and Economics

Shanghai 200083, China, Bulding 8 Room 209

E-mail: amtwatara@hotmail.com

Abstract

Stock market is an indicator of an economy financial health. It indicates the mood of investors in a country. As such, stock market development is an important ingredient for growth. The stock exchange of West African monetary union is fairly new compared to many countries. This paper examines the impact of stock market development on growth in West African monetary union. A time series econometric investigation is conducted over the period 1995 -2006. We analyze both the short run and long run relationship by constructing an ECM. Two measures of stock market development namely size and liquidity are used. We define size as the share of market capitalization over GDP and liquidity as volume of share traded over GDP. We found that stock market development positively affect economic growth in West African monetary union both in the short run and long run.

Keywords: Stock Market Development, Economic Growth, West African Monetary Union, Size and Liquidity

1. Introduction

In line with thinking of the new growth theorists, a well developed financial sector facilitates high but sustainable growth. The link between finance and growth has been controversially debates in economic literature. Many researchers are of the view that there still exists great dichotomy regarding the role of financial intermediaries in facilitating sustainable economic growth in the long-term.

In this paper, we explore the relationship between stock market development and economic growth in West African monetary union for the period 1995 - 2006. West African monetary union has experienced sustained and consistent growth over the years despite being affected by the disadvantages of a small country. The Stock Market of West African monetary union (BRVM) is fairly new, established in 1998. However, it is one of the best performing stock market in Africa. It is one of the seven stock markets which trade automatically in Africa. We use two measures of stock market development namely SIZE and LIQUIDITY. SIZE is denoted as market capitalization as a percentage of GDP. The assumption behind this measure is that overall market size is positively correlated with the ability to mobilize capital and diversify risk on an economy-wide basis. LIQUIDITY is calculated as value of shares traded on the stock market exchange divided by GDP. The total value traded ratio measures the organized trading of firm equity as a share of national output and therefore should positively reflect liquidity on an economy-wide basis. The total value traded ratio complements the market capitalization ratio: although a market may be large, there may be little trading.

The structure of this paper is as follows, section 2 presents a brief overview of the literature and we present overview of the West African stock market in section 3. The methodology and data measurement is described in section 4. Section 5 depicts the empirical results, section 6 presents the Policy Recommendations, and we conclude in section 7.

2. A Brief Overview of the Literature

Theoretically, a growing literature argues that stock market development boost economic growth. Greenwood and Smith (1997) show that large stock markets can decrease the cost of mobilizing savings, thus facilitating investment in most productive technologies. Bencivenga *et al* (1996) and Levine (1991) argue that stock market liquidity (the ability to trade equity easily) is crucial for growth. Although many profitable investments require a long run commitment of capital, savers do not like to relinquish control of their savings for long periods. Liquid equity markets ease this tension by providing an asset to savers that they can quickly and inexpensively sell. Simultaneously, firms have permanent access to capital raised through equity issues. Moreover, Kyle (1984) and Holmstrom and Tirole (1993) argue that liquid stock markets can increase incentives for investors to get information about firms and improve corporate governance. Finally, Obstfeld (1994) show that international risk sharing through internationally integrated stock markets improves resource allocation and can accelerate the rate

of growth. From the point of view of Greenwood and Jovanovic (1990); King and Levine (1993), a new stock exchange can increase economic growth by aggregating information about firms' prospects, thereby directing capital to investment with returns. These effects of a stock market opening result in a measured increase in productivity. Stock exchanges exist for the purpose of trading ownership rights in firms, and a new stock exchange may increase productivity growth for this reason as well. According to North (1991), the creation of a stock exchange can increase economic growth by lowering the costs of exchanging ownership rights in firms, an important part of some institutional stories of economic growth. Furthermore, Bencivenga and Smith (1992) state that a new stock market also can increase economic growth by reducing holdings of liquid assets and increasing the growth rate of physical capital, at least in the long run. In the short run, however, the equilibrium response of the capital stock to a new stock exchange can be negative because the opening of an exchange can increase households' wealth and raise their contemporaneous consumption enough to temporarily lower the growth rate of capital.

In principle, a well-developed stock market should increase saving and efficiently allocate capital to productive investments, which leads to an increase in the rate of economic growth. Stock markets contribute to the mobilisation of domestic savings by enhancing the set of financial instruments available to savers to diversify their portfolios. In doing so, they provide an important source of investment capital at relatively low cost (Dailami and Aktin, 1990). In a well-developed stock market share ownership provides individuals with a relatively liquid means of sharing risk when investing in promising projects. Stock markets help investors to cope with liquidity risk by allowing those who are hit by a liquidity shock to sell their shares to other investors who do not suffer from a liquidity shock. The result is that capital is not prematurely removed from firms to meet short-term liquidity needs. Moreover, stock markets play a key role in allocating capital to the corporate sector, which will have a real effect on the economy on aggregate. Debt finance is likely to be unavailable in many countries, particularly in developing countries, where bank loans may be limited to a selected group of companies and individual investors. This limitation can also reflect constraints in credit markets (Mirakhor and Villanueva, 1990) arising from the possibility that a bank's return from lending to a specific group of borrowers does not increase as the interest rate it charges to borrowers rises (Stiglitz and Weiss, 1981 and Cho, 1986).

The arguments for stock market development were supported by various empirical studies, such as Levine and Zervos (1993); Atje and Jovanovic (1993); Levine and Zervos (1998). Although these studies emphasise the importance of stock market development in the growth process, they do not simultaneously examine banking sector development, stock market development, and economic growth in a unified framework. On the other hand Levine and Zervos (1993); Atje and Jovanovic (1993); Levine and Zervos (1998); Rousseau and Wachtel (2000) and Beck and Levine (2003) show that stock market development is strongly correlated with growth rates of real GDP per capita. More importantly, they found that stock market liquidity and banking development both predict the future growth rate of the economy when they both enter the growth regression. They concluded that stock markets provide different services from those provided by banks. This is also consistent with the work by Levine and Zervos (1995) and the argument by Demirguc-Kunt (1994) that stock markets can give a big boost to economic development.

Stock exchanges are expected to accelerate economic growth by increasing liquidity of financial assets, making global risk diversification easier for investors, promoting wiser investment decisions by saving-surplus units based on available information, forcing corporate managers to work harder for shareholders' interests, and channeling more savings to corporations. In accordance with Levine (1991), and Bencivenga and Smith and Starr (1996) they emphasized the positive role of liquidity provided by stock exchanges on the size of new real asset investments through common stock financing. Investors are more easily persuaded to invest in common stocks, when there is little doubt on their marketability in stock exchanges. This, in turn, motivates corporations to go to public when they need more finance to invest in capital goods. Another important contribution of stock exchanges to economic growth is through global risk diversification opportunities they offer. However, Saint-Paul (1992); Deveraux and Smith (1994) and Obstfeld (1994) argue quite plausibly that opportunities for risk reduction through global diversification make high risk, high return domestic and international projects viable, and, consequently, allocate savings between investment opportunities more efficiently. Stock prices determined in exchanges, and other publicly available information help investors make better investment decisions. Better investment decisions by investors mean better allocation of funds among corporations and, as a result, a higher rate of economic growth. In efficient capital markets prices already reflect all available information, and this reduces the need for expensive and painstaking efforts to obtain additional information (Stiglitz, 1994). From the point of view of Schumpeter (1912), technological innovation is the force underlying long-run economic growth, and that the cause of innovation is the financial sector's ability to extend credit to the

entrepreneur.

The study done by Levine and Zervos (1998), find a positive and significant correlation between stock market development and long run growth. Greenwood and Smith (1996) show that stock markets lower the cost of mobilizing savings, facilitating investments into the most productive technologies. Obstfeld (1994) shows that international risk sharing through internationally integrated stock markets improves resource allocation and accelerates growth. Bencivenga *et al.* (1996) and Levine (1991) have argued that stock market liquidity, the ability to trade equity easily, plays a key role in economic growth; although profitable investments require long run commitment to capital, savers prefer not to relinquish control of their savings for long periods. Liquid equity markets ease this tension by providing assets to savers that are easily liquidated at any time.

Yet Kyle (1984) argues that, an investor can profit by researching a firm, before the information becomes widely available and prices change. Thus investors will be more likely to research and monitor firms. To the extent that larger, more liquid stock markets increase incentives to research firms, the improved information will improve resource allocation and accelerate economic growth. The role of stock markets in improving informational asymmetries has been questioned by Stiglitz (1985) who argues that stock markets reveal information through price changes rapidly, creating a free-rider problem that reduces investor incentives to conduct costly search. The contribution of liquidity itself to long-term growth has been questioned. Demirguc-Kunt and Levine (1996) point out that increased liquidity may deter growth via three channels. First, it may reduce saving rates through income and substitution effects; second, by reducing the uncertainty associated with investments, greater stock market liquidity may reduce saving rates because of the ambiguous effects of uncertainty on savings; third, stock market liquidity encourages investor myopia, adversely affecting corporate governance and thereby reducing growth.

The one important study mentioned earlier is one by Levine and Zervos (1998) who are among the first to ask whether stock markets are merely burgeoning casinos or a key to economic growth and to examine this issue empirically, finding a positive and significant correlation between stock market development and long run growth. However, Levine and Zervos's use of a cross-sectional approach limits the potential robustness of their findings with respects to country specific effects and time related effects. The legal liberalization of the stock market increased the importance of the stock market. It does not only link the importance of the stock market to economic growth over time, but also interpret it in relationship to the universal banking system. In a frictionless Arrow-Debreu world there is no room for financial intermediation. Explaining the role played by stock markets or banks requires building in frictions such as informational or transaction costs into the theory. Different frictions motivate different types of financial contracts, markets and institutions.

3. An Overview of the Stock Market of the West African stock market.

The establishment of an organized financial market was provided for in the treaty of November 14, 1973 forming the West African Monetary Union (WAMU), initially made up of seven countries (Benin, Burkina-Faso, Ivory Coast, Mali, Niger, Senegal, and Togo). The Union recently expanded with the addition of an eighth member (Guinea Bissau). In 1991, monetary authorities began considering setting up a single, efficient financial market for all WAMU countries. Since economies in the West African Monetary Zone were opening up more and more, economic regulation mechanisms, particularly those used to indirectly manage currency and generate savings, had to be adopted. Furthermore, creating a common financial market for all countries in the WAMU sub-region seemed to be a good way to strengthen regional integration for developing trade among the member states. From then on, besides the various integration sites in the zone-insurance, social assistance and commercial law-the existence of a central bank (BCEAO), a common banking commission and now a financial market-including a common securities exchange-seemed the best option without minimizing the symbolic aspect it gave to the project and the economies of scale. From that date on, many types of expertise were used, particularly that from France, the US, Canada and the World Bank, to conduct the project's design phase. Also, the Union's Council of Ministers decided in December 1993 to create a Regional Financial Exchange (BRVM: Bourse Regionale des Valeurs Mobilières) and so mandated the Central Bank of West African States (BCEAO) to conduct the project. The stock exchange creates a market place where companies can raise capital, often referred to as primary market. At this market shares are issued for the first time to the public; and shareholders can trade in shares of listed companies, that is, secondary market. At this market, shareholders buy and sell existing shares.

Market Indices

Market movements and trends in the West African regional stock market are depicted by two market indices namely the BRVM Composite, and BRVM 10. This information is made available on the BRVM's website in order to allow even foreign investors to have information on a real time basis.

- The BRVM COMPOSITE consists of all stocks admitted to trading.

- The BRVM 10 is composed of ten companies most active in the market.

The formulation and the selection criteria for the BRVM COMPOSITE and BRVM 10 inspired by the main stock market indices in the world, especially in the index FCG, the International Financial Corporation, a company affiliated with the World Bank.

The formula takes into account the indices of market capitalization, the volume of transactions per session and frequency of transactions. In addition, only the shares are used for the calculation of indices.

4. Data and Methodology

4.1. Model

We consider two measure of stock market development namely size and liquidity: SIZE denotes market capitalization as a % of GDP at constant price whereas LIQUIDITY denotes total value of share traded as a % of GDP at constant price. We build our model based on the following augmented production.

$$Y_t = f(FDI_t, HUMAN_t, SMD_t) \quad (1)$$

Where Y_t denotes real GDP per capita; FDI denotes foreign direct investment, HUMAN denotes human capital and SMD denotes stock market development. The econometric model can write as reduced form logarithm equation for SIZE and LIQUIDITY;

$$\ln Y_t = \beta_0 + \beta_1 \ln FDI_t + \beta_2 \ln HUMAN_t + \beta_3 \ln SIZE_t + \mu_t \quad (2)$$

$$\ln Y_t = \beta_0 + \beta_1 \ln FDI_t + \beta_2 \ln HUMAN_t + \beta_3 \ln LIQUIDITY_t + v_t \quad (3)$$

Over the years, the country has experienced sustain and consistent growth. Many factors have contributed to this namely successful trade liberalization, political stability, institutional factors among others. However, it can be argued two main factors that have help the country in the attainment of sustained growth is FDI and human capital.

FDI is increasingly being recognized as a major source of economic development. The general belief is that FDI facilitates the transfer of technology, organizational and managerial practices, skills and access to international market. Investors generally tend to adopt a two-stage process when evaluating countries as investment locations. First phase involve screening potential investors based on economic fundamentals. In the second phase, those countries which pass the first phase are evaluated based on the incentives they offer. Thus, as a factor in attracting FDI, incentives are secondary to the more fundamentals determinants such as market size, access to raw materials and availability of skilled labour.

Foreign Direct Investment plays a pivotal role in the development of WAMU's economy. It is an integral part of the global economic system. Advantages of FDI can be enjoyed to full extent through various national policies and international investment architecture. Both the factors contribute enormously to the maximum FDI inflows in West African monetary union, which stimulates the economic development of the Region.

Foreign Direct Investment in West African monetary union is allowed through four basic routes namely, financial collaborations, technical collaborations and joint ventures, capital markets via Euro issues, and private placements or preferential allotments.

FDI inflow helps the West African monetary union to develop a transparent, broad, and effective policy environment for investment issues as well as, builds human and institutional capacities to execute the same.

Attracting foreign direct investment has become an integral part of the economic development strategies for West African monetary union. FDI ensures a huge amount of domestic capital, production level, and employment opportunities in the developing countries, which is a major step towards the economic growth of the country. FDI has been a booming factor that has bolstered the economic life of West African monetary union, but on the other hand it is also being blamed for ousting domestic inflows. FDI is also claimed to have lowered few regulatory standards in terms of investment patterns. The effects of FDI are by and large transformative. The incorporation of a range of well-composed and relevant policies will boost up the profit ratio from Foreign Direct Investment higher. The Economic growth is one of biggest advantages of FDI enjoyed by West African monetary union, which is enormously benefited from foreign direct investment. A remarkable inflow of FDI in various industrial units in West African monetary union has boosted the economic life of country. Over the years, successive governments have put considerable effort in attracting FDI.

It is highly recognized that human capital is an important determinant of growth. Successive West African monetary union government have invested a lot in human capital namely education. The literacy rate of West African monetary union is one of the highest in Africa.

4.2. Data

Data was obtained from different source. FDI (expressed as a % of GDP) was obtained from the World Development Indicators (WDI); the data on stock development measures namely SIZE and LIQUIDITY was obtained from west African regional stock market journal various bulletin, HUMAN (proxied by secondary enrollment ratio) was obtained from Central Statistical Office, of west African monetary union (UMOA).

5. Estimation Result

The Long Run Equation

Table 1 and Table 2 reports result for the Long Run Equation of model 2. The results indicate that all the independent variables have the expected positive sign and are highly significant.

Both measures of stock market development demonstrate the importance of stock market development to growth. A 10% increase in SIZE leads to a 1.75% increase in RGDPPC whereas a 10% increase in LIQUIDITY leads to a 6.33% increase in RGDPPC. These results suggest that development of the stock market is an important ingredient for economic growth. However, LIQUIDITY has a greater impact on growth rather than SIZE.

We check for the presence of multicollinearity using the variance inflation factor (VIF). As a rule of thumb, a variable whose VIF values are greater than 10 may merit further investigation when it comes to multicollinearity. Equation (1) produces a VIF of 4.88 and equation (2) 3.37.

Table 3 and Table 4 depict results from the short run equations. The results are replicated compared to the long run ones. The Adjusted R^2 is 0.7635 and 0.7954 which indicate the ability of the model to fit the data reasonably well. The lagged error terms have the required negative sign and are significant at 1%. This reinforces the finding of along run relationship among the variables.

The results in Table 5-8 and Table 5-9 indicate that the immediate effect of SIZE as well as LIQUIDITY is positive and significant. In fact, the immediate impact of all other variables namely HUMAN and FDI is positive and significant. The size of the coefficient of the error correction terms, namely -0.755 and -0.635 for equation (1) and (2) suggests a high speed adjustment from the short run deviation to the long run equilibrium in RGDPPC. It indicates that 75% (for equation 1) and 63% (equation 2) of the deviation is corrected every year.

6. Policy Recommendations

The findings from this study raise some policy issues and recommendations, which will reinforce the link between the stock market and economic growth in West African monetary union.

Given that the stock market operate in a macroeconomic environment, it is therefore necessary that the environment must be an enabling one in order to realize its full potentials.

The demand for the services of the stock market is a derived demand. With the existence of a positive relationship between stock market development and economic growth, it is pertinent to recommend that there should be sustained effort to stimulate productivity in both the public and private sectors.

The determination of stock prices should be deregulated. Market forces should be allowed to operate without any hindrance. Interference in security pricing is inimical to the growth of the market.

The stock market is known as a relatively cheap source of funds when compared to the money market and other sources. The cost of raising funds in the West African monetary union market is however, regarded to be very high. There should be a review downward, of the cost, so as to enhance its competitiveness and improve the attractiveness as a major source of raising funds.

Given the present political dispensation, all the tiers of government should be encouraged to fund their realistic developmental programmers through the stock market. This will serve as a leeway to freeing the resources that may be used in other sphere of the economy.

7. Conclusion

The model analyzes relationship between stock market development and economic growth in West African monetary Union over the period of time 1995 to 2006. Using two measures of stock market development namely Size and Liquidity, we found that stock market development is an important ingredient for growth in West African monetary Union since the stock market gives a general idea of an economy's health. We adopt the simple two step procedure of Engle and Granger when it comes to the econometric methodology. Given the small size of our sample and the number of parameters to be estimated, the Engle – Granger approach is more attractive than the Johansen approach which would require the estimation of a system of 3 equations, implicitly

there is a loss of degree of freedoms. The positive relationship between stock market development and economic growth is replicated in both the long run and short run equations.

Our two controlling variables have the expected positive result and are highly significant. Both FDI and HUMAN are crucial determinants of growth in West African monetary Union.

The emerging literature on FDI stipulates that FDI's positive impact on growth depends on local conditions and absorptive capacities. Essential among these capacities is financial development. This model provides support for this hypothesis in the context of West African monetary Union.

Like FDI, the importance of human capital to economic growth is not a doubt. Today's workplace, with its focus on managerial skills and technological innovation, imposes higher educational demands on the labor force of developing nations, including West African monetary Union. Lower labor cost is no longer sufficient to attract investments. In its place, the "human capital of the local labor force" is gaining momentum as labor cost differentials or proximity to raw materials become less important in decisions to locate technology-intensive facilities. Like other capital, human capital could be increased through investment in, and commitment to human factors such as education, training and healthcare.

Strong human capital attracts and encourages growth, not the other way around. An educated population also leaves an enduring effect economically with a larger tax base and socially through increased political involvement. Although easier said than done, an investment in human capital should be a part of any economic development policy. The availability and the prevalence of a nation's human capital determine the rate of growth of its economy and integration in world markets

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Table 1. The Long Run Equation, Equation (1)

<i>Dependent Variable:</i>			
<i>Equation(1)</i>			
<i>Variables</i>	<i>Coefficient</i>	<i>t-ratios</i>	<i>p-value</i>
<i>FDI</i>	0.221	6.822	0.000
<i>SIZE</i>	0.175	4.423	0.000
<i>HUMAN</i>	2.033	5.237	0.000
<i>Constant</i>	-6.111	-3,435	0.000

Table 2. The Long Run Equation, Equation (2)

<i>Dependent Variable:</i>			
<i>Equation(2)</i>			
<i>Variables</i>	<i>Coefficient</i>	<i>t-ratios</i>	<i>p-value</i>
<i>FDI</i>	0.121	6.822	0.000
<i>LIQUIDITY</i>	0.633	4.423	0.011
<i>HUMAN</i>	2.537	5.237	0.000
<i>Constant</i>	-8.435	-3,435	0.000

Table 3. The Short Run Equation, Equation (1)

<i>Dependent Variable:</i>			
<i>Equation(1)</i>			
<i>Variables</i>	<i>Coefficient</i>	<i>t-ratios</i>	<i>p-value</i>
<i>FDI</i>	0.102	2.467	0.029
<i>SIZE</i>	0.132	3.211	0.007
<i>HUMAN</i>	1.846	3.773	0.002
u_{t-1}	-0.755	-3.321	0.010

Table 4. The Short Run Equation, Equation (2)

<i>Dependent Variable:</i>			
<i>Equation(2)</i>			
<i>Variables</i>	<i>Coefficient</i>	<i>t-ratios</i>	<i>p-value</i>
<i>FDI</i>	0.090	2.467	0.000
<i>LIQUIDITY</i>	0.089	3.211	0.000
<i>HUMAN</i>	2.027	3.773	0.000
v_{t-1}	-0.635	-3.321	0.000