

# CAPITAL MARKET, FINANCIAL DEEPENING AND ECONOMIC GROWTH IN KENYA

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## ***Abstract***

Financial sector plays a crucial role in economic development. The depth of the financial sector has generally been found to promote economic growth. It has been observed that well functioning capital markets increases economic efficiency, investment and growth. Kenya's capital market has been described as narrow and shallow. The stock market and private bond market have been raising less than 1% of growth financing. The vision 2030 development plan aims to achieve an annual economic growth of 10% with an investment rate of 30% to be financed mainly from mobilization of domestic resources. There has been significant focus on the capital market with for example the institutional development of the stock market and introduction of new instruments in the bonds market. It has been assumed that these efforts will facilitate mobilization of adequate resources and allocation of these resources efficiently to achieve growth objectives. This study therefore aims at answering the question on whether capital market deepening facilitates economic growth. This is analyzed by studying the contribution of the capital market in financing investment, the relationship between capital market deepening and productivity and finally, the relationship between capital market deepening and economic growth.

## **1. Introduction**

Long term capital is deemed crucial for economic development as evidenced by the positive relationship between long term capital and economic growth (Demirguc and Levine, 1996). In recognition of this, Kenya kicked-off the revitalization of the stock market in the late 1980s. In early 2000, it set out to revitalize the bonds market by strengthening the government bonds market. Despite the initiatives, the stock market that has been in existence for over 50 years is still shallow, narrow and thin. The bonds market is also in its infancy stage attracting more of the government bonds compared with corporate bonds. Development Financial Institutions (DFIs) set up at independence to close the resource gap for long term capital faced various problems that constrained

their performance (Ngugi and Njenga, 2005). As a result investors have relied on banks for short to medium terms loans. Further, savers have had to contend with a thin financial basket.

Kenya's long term development agenda spelt out in the vision 2030, targets an annual growth rate of 10% in the medium term with an investment rate of 30% of which a significant proportion will be financed through mobilizing domestic savings. While Kenya's financial sector is viewed as substantially diversified, it is dominated by banking institutions which have not evolved to provide long term capital adequately. The equity and debt market are struggling to gain momentum. The development financial institutions have also not been performing. If the anticipated investment level is to be achieved, it means that the financial sector must mobilize adequate and appropriate finance to meet the financing needs.

Capital market development is an important component of financial sector development and supplements the role of the banking system in economic development. Specifically, capital markets assists in price discovery, liquidity provision, reduction in transactions costs, and risk transfer. They reduce information cost through generation and dissemination of information on firms leading to efficient markets in which prices incorporate all available information [Yartey and Adjasi (2007), Garcia and Liu (1999)]. Overall, stock markets provide market liquidity that enables implementation of long term projects with long term payoffs thereby promoting a country's economic growth endeavour. Moreover, efficient capital markets not only avail resources to investors, they also facilitate inflow of foreign financial resources into the domestic economy.

The fact that the debt and equity market are not thriving has seen the credit market play a significant role in financing investment while deposits form a significant proportion of the financial assets basket. The recent experience with KenGen and Safaricom IPOs which saw huge oversubscriptions is an indication that there is pursuit for a diversified financial asset basket among savers. The liquidity shifts witnessed in the banking institutions saw some banks increase their deposit rates to compete for the deposits; a sure demonstration that access to alternative financial asset heightens competition in the sector. Capital market development therefore enables financial deepening by enabling the savers to diversify their financial asset basket and the firms to have access to alternative sources of financing.

This raises the following questions. Does capital market facilitate deepening the financial sector? How does the capital market interact with other financial system? Is capital market development related to economic growth? This paper aims to address these questions.

## **2. Capital market development in Kenya**

The capital market in Kenya is made up of stock market, bonds, development financial institutions, and pension funds. While the stock market has been in existence since 1920s, it failed to pick the growth momentum and currently, the market has just about 50 listed firms which are less than what the country inherited at independence. The bonds market is in its infancy stage almost getting to its youthful stage. DFIs have faced various problems from managerial to financial making it difficult for them to perform their initially desired role.

A study by IFC and Central Bank of Kenya in 1984 study recommended the need to develop capital markets in order to facilitate mobilization of long term capital. In Sessional Paper No. 1 1986 the government indicated its commitment in facilitating growth of the capital market and this saw the kick-off of the capital market reform in late 1980s which saw institutional and policy reforms.

### **2.1 Stock market**

The stock market saw in early 1990s the set up of the capital market authority that was given the double responsibility for development and regulation of the market operations. However, the performance of the market is an indication that the CMA is not delivering its services adequately. The development role calls for diversification of the financial assets and attracting IPOs. With the regulatory responsibility CMA is expected to keep surveillance of the market. The recent experience with stock brokers failing is an indication that the market is missing out in terms of surveillance. With institutional development, the market has witnessed, centralization of trading and automation aimed to reduce the transaction period to T+4. The market has also seen entry of investment banks that are expected to play various roles including, market making and underwriting. However, they have not managed to perform these roles adequately.

The performance of the stock market indicates that the market has not managed to make significant contribution to financing economic growth. Table 1 shows that the market has financed less than

1% of GDP. Further, the listings are intermittent and in the recent period, the participation of the private sector has been minimal.

**Table 1 Trends in issues of ordinary shares**

Period	IPO/GDP	IPOs		Other public offers		Private placements		Privatization	
		Number	Kshs (Millions)	Number	Kshs (Millions)	Number	Kshs (Millions)	IPOs	Others
1980				1	60.62	1	20		
1983				1	10.06				
1984				1	11.6				
1986	.0681	1	80						
1987						1	29.6		
1988	.1004	1	150	1	28.75	1	49.275	1(150)	
1989	.1784	1	304						
1990				1	297				1(297)
1991	.0214	1	40.8						
1992	.1684	2	370	1	126			1(232)	
1993				2	62.08				
1994	.4542	2	542	1	718			1(400)	
1995		1	22			1	102	1(22)	
1996	.5197	2	2748	2	1160			1(2264)	2(1160)
1997	.0721	2	449.359					1(167.09)	
1998				2	1840				1(1820)
2000	.0475	1	378						
2001	.1257	1	1125			1	331.208	1(1125)	
2002									
2003									
2004									
2005									
2006									
2007									
2008									

Source: NSE information desk, NSE annual reports, and monthly reviews and CMA annual reports

## 2.2 Bonds market

Corporate bonds<sup>1</sup> were introduced into the market on November 22 1996 when the East Africa Development Bank (EADB) bond was issued at a price of 99% raising Kshs 600 Million. The bond was traded in denominations of Kshs 1 Million with an interest of 1.2 % points above the prevailing 91-day Treasury bill rate. Further the EADB launched a Kshs 2 billion medium term note, which was listed on the NSE Fixed Income securities market segment on 2<sup>nd</sup> May 2001, which was viewed as a break from the long-term debt instruments. Proceeds from the issue were intended for mobilization and lending in local currencies and for the development of a sustainable tool for alleviating the exchange risk associated with long and medium term borrowing in foreign currencies. The Shelter Afrique made a medium term note of Kshs 350M to be issued in three tranches, the first

issued on the 8<sup>th</sup> December 2000, through a private placement to institutional investors. Proceeds from the sale were used for housing development in Kenya. The first locally controlled firm to offer bond was Safaricom whose proceeds were to be used to expand Safaricom and network coverage and capacity aiming to improve both the availability and reliability of their networks.

The government initially went for short maturity bonds issuing one-year floating bonds, with the first issue made in April 1997. The bond was lowly subscribed, with a subscription of 2.6 billion out of the Kshs 5 billion tendered. Low subscription was attributed to Central Bank failure to give sufficient notice for proper placement of the bond. The nominal annual yield was indexed 2.5 basis points above the 12-week moving average of the 91-day Treasury bill yield and reset quarterly. The government issued floating rate treasury bonds in September 1998 for one and two year maturity expected to raise Kshs 5 billion. Subscription was low with Kshs 2.8 billion and Kshs 0.5 billion worth respectively. The low subscription was attributed to the liquidity crises among the few small banks during the month. These issues were part of the objective to shift the short term debt consisting mainly of Treasury bills to long term debt and also help address the inverse yield curve. Further, as indicated in 1998/99-budget speech, the government issued tax amnesty bond to encourage compliance with income tax act and a special bond aimed to cover outstanding payments due to the government contractors and suppliers was issued. At the same time it was made a requirement that insurance companies should invest a minimum of 25% of their gross premiums in government securities, to provide liquidity to the bonds market. Currently, the government bonds maturity has expanded to 20 years. However, the market is facing liquidity problems.

### **2.3 Investment Funds**

The period 1996/97 saw the launching of investment funds and venture capital funds, including the Regent Undervalued Assets Africa Fund that applied for listing in Kenya, Bostwana and Ireland. This was an offshore investment fund and it was listed in the NSE in 1997. The fund offered 10 Million shares out of which Kenya was allocated 10.2% to subscribe for with minimum subscription per investor fixed at US\$100,000. Simba fund was set up by Barring Asset Management as a regional investment fund for Africa with a resource pool of US\$120million. The fund was invested in seven sub-Saharan African countries with favorable GDP growth rate. The Acacia Fund Limited was the first Kenya's venture capital fund. The fund is promoted by the Commonwealth Development Corporation with a capitalization of KShs 1 billion. The fund was launched as a ten-

year close-ended fund that would make equity investments in medium sized companies, which have the potential of being listed at the NSE. There were also efforts to help mortgage finance companies to issue asset-backed securities in an effort to facilitate increased savings in financial assets and at the same time develop alternative financial market instruments to raise capital. The main aim was to facilitate the raising of additional long-term capital, which would contribute towards the development of the housing sector. Regent Undervalued Assets Africa Fund was delisted in 2001 after failing to comply with the listing requirements.

**Table 2 Listing of Treasury bond 1997 to 2003 Update the table**

Year	Face Value (Kshs)	Amount Raised (Kshs)	Percentage (%) in Amount Raised based on 1997 issues (Using 1997 as base Year)	Percentage (%) Change in amount raised on Annual Basis	Subscription level (%)	Outstanding stock as at Dec'
1997	15,000,000,000	15,000,000,000			100.00	44,400,000,000
1998	29,000,000,000	28,519,700,000	90	90	98.34	52,970,000,000
1999	29,415,836,227	24,716,435,793	65	-13	84.02	29,650,000,000
2000	47,886,240,332	28,583,833,501	90	15.3	59.69	33,300,000,000
2001	78,866,956,064	69,795,743,621	378	145	88.50	78,730,000,000
2002	85,284,910,578	94,098,627,587	527	36.2	110.33	123,400,000,000
2003	95,928,650,000	94,535,985,129	530	0.04	98.55	178,352,320,000
2004	80,500,000,000	66,091,000,000	341	-30	90.41	180,867,110,000

*Source: Central bank of Kenya, statistical Bulletin.*

**Table 4 Approved and outstanding corporate bonds as at 2005. Update the table**

	COMPANY	Amount raised (Shs millions)	Date of approval	Interest rate	Tenor	Redemption date	Subscription Level (%)	Use of Funds
	Shelter Afrique MTN (Housing finance institution)	150 200	Nov'00 9 <sup>th</sup> Jul'01	91 DAY TBILL + 0.75%	3YR 3YR	Nov'03 9 <sup>th</sup> Jul'04	137.33 76.5	-To mobilize and lend in Kenya Shillings  -To develop a sustainable tool for alleviating the exchange risk associated with medium and long-term lending in foreign currency  -To participate in the development of the Kenyan Capital Markets through the issuance of securities
	E.A. D. B MTN (Dev't bank)	800 1,200 2,000 800	Nov '96 Jan '99 25 <sup>th</sup> pril'01 June '04	MA + 0.75%	3YR 3YR 4YR 7YR	Nov 1999 Jan '03 25 <sup>th</sup> Apr'06 Jun 2011	100 100 100 100	-To mobilize and lend in Kenya Shillings  -To develop a sustainable tool for alleviating the exchange risk associated with medium and long-term lending in foreign currency  -To participate in the development of the Kenyan Capital Markets through the issuance of securities
	**Safaricom Limited MTN (Mobile provider)	4,000	11 <sup>th</sup> June'01	91 DAY TBILL + 1%	5YR	31 <sup>st</sup> Mar '06	100	- Finance capital expenditure for the expansion of the Safaricom mobile telephone network in Kenya - Repay outstanding suppliers' credit - pay insurance cover to be given to by the Belgian Export Credit Authority as part of the security arrangements for the issue.
4	**Mabati Rolling Mills Ltd (Manufacturing Company)	1,000	14 <sup>th</sup> Oct'02	91 DAY TBILL + 0.75%	5YR	8 <sup>th</sup> Oct'07	112	- Reduction in the foreign currency exposure within the overall funding mix, thereby reducing foreign exchange risk and --Reduction of the existing level of Commercial Paper indebtedness
5	Faulu Kenya MTN (Micro finance institution)	500	22 <sup>nd</sup> March 2005	91 DAY TBILL + 0.50%	5Yr	22 <sup>nd</sup> March 2010	100	-Deepening of the institution's lending to micro businesses in Kenya
	TOTAL	10,650						

Source: Capital Markets Authority Data

### 3. Capital markets and financial deepening

When the capital market develops it offers an opportunity to the investors to diversify their financial asset basket and the firms an opportunity to diversify the sourcing of finance. The investors for example get a chance to diversify their asset basket with a risk free asset, the government bond. This acts as a good platform to bargain their returns in other markets. As firms list at the stock exchanges this enables to reduce the information asymmetry that keeps the bank lending rates high due to the risk premium attributable to information costs. Thus, capital market development makes the financial market move towards a level of complete market.

#### 3.1 Capital market, financial access and depth

First of all it is important to note that the presence of financial services per se as reflected by the size and depth does not imply the accessibility by different users. However, when the financial system has achieved depth then availability of and access to financial services is possible to achieved. The size and depth is viewed as important in determining saving and investment behavior. Furthermore, access and size and depth has significant implications on the real activity, economic growth and welfare.

##### 3.1.1 Financial access and depth

We looked at the indicators of financial access and depth across various countries and found that there are clear differences across the economies for the various measures. Table 3 shows that South American economies are performing poorly in almost all the indicators. The correlation between financial access and depth show a significantly low coefficient (0.368) indicating that depth and access are capturing different aspects of the output of the financial system.

Table 5 Financial market development indicators

Variables	South America	European countries	Asian countries	Developed markets	Others (Arab and African countries)
CAPMKT	0.179	0.345	0.294	0.337	0.761



STOCKS	0.056	0.113	0.193	0.297	0.198
BONDS	0.123	0.232	0.101	0.040	0.563
<i>PRIVATE</i>	7.140	28.930	10.239	12.940	41.643
<i>PUBLIC</i>	3.659	4.504	3.749	4.325	4.982
<i>INTERNATIONAL</i>	20.008	25.979	13.688	7.546	52.871
BANK	1.189	0.918	0.928	0.793	1.506
NON-BANK	0.546	0.779	1.037	0.519	2.164
ACCESS	0.226	0.457	0.381	0.310	0.975
DEPTH	0.466	0.470	0.937	0.486	0.970

Computed using Financial Development Indices, World Economic Forum (2008)

Looking at the relationship among the measures of access, it shows that financial market sophistication is associated with wider sourcing of finance such as the venture capital availability and the ease of access to loans. There is also a significant relationship between venture capital availability and ease of access to loans. Venture capital market in Kenya is very small and the results show that developing that market will enable firms have access to the loans market especially because of the widened ownership which may guarantee confidence. Interestingly, bank branches do not necessary mean access to credit. In the country today, banks are increasing their branching to rural areas but this has not necessary seen growth in bank loans.

Considering the measures of depth and size measures a major aspect is that M2/GDP is highly correlated with bank deposits, stock market capitalization and private credit. Similarly private sector credit is highly correlated with the private sector debt. Surprisingly the public debt is negatively correlated with stock market capitalization and also the stock market value added. Bank deposits are highly correlated with the relative value added of financial institutions.

#### **4. Access, depth and financial sector**

Our analysis shows a positive correlation between capital market, and the financial access and depth factors. The same is indicated by the various components of capital markets. For example, the measure of capital development is highly correlated with the depth of the financial sector than the access factor. While this is more pronounced for the stock market, it is almost balanced for the bonds market. With access variables, capital market are highly correlated with the financial market sophistication. With the depth measure the capital market is highly related to the private sector debt and also private sector credit. Stock market capitalization is negatively correlated with the public

sector debt. Interestingly, this may be reflecting the negative correlation between the IPOs and public sector debt. When we look at the different categories of the bonds we find that the private bonds are highly correlated with the private sector debt but also private sector credit. With the high correlation it means that private sector debt and credit are complementary. Interestingly the public bonds are negatively correlated with M2/GDP and the stock market capitalization. The expectation is that with a highly liquid economy the public bonds should thrive.

### *3.2 Capital market and other financial sector*

It is often argued that the two complement one another. The stock market facilitates in gathering information and reducing information gap so that banks are not exposed to issues of corporate governance that result in higher non-performing loans. Further it means that firms capital is priced. There is a significant relationship between the capital market and the banking and non-banking institutions. This implies that development of capital market has a complementary effect on the banking sector. It is often argued that in the process of the financial system, the banking sector development sees the evolution of the bonds and the stock market. The negative correlation between the stock market and the bonds market tend to indicate substitution. In the development of the bonds market the assumption is that government bonds precedes the private bonds. Results show a positive correlation between the public, private and international bonds.

### *3.4 Firms and sourcing of finance*

#### *a) Financing of new investment*

Firms have various alternatives for financing their investment. They can use the internal funding or borrow from outside either by raising external equity or using different debt instrument. The choice of the alternative depend on the cost element including the interest rate and agency costs, access and availability, and ability to service. Firms seek external funding when they face liquidity constraints.

Table 4 reports the financing strategies for new investments. New investment is mainly financed through internal funding and to some extent through the bank loans. Overdraft facility is also a major source of finance, whereas foreign loans and development financial institutions contribute minimally. Internal funds finance up to an average of 77 percent of the total investment; 61 percent of the respondents indicated that they fully finance their investments using the internal funds. Bank

loan and overdraft facility cover a similar average of 74 percent of the new investment; this facilities are mainly being used by financing investment with internal funding less than 100 percent. External equity is not a popular alternative may be because of the level of development of the capital market or the fact that loans do not seem very risky to the investors. The indicated pattern of financing seems to support the pecking order hypothesis where internal funds takes a priority then debt and the equity.

A positive and significant relationship is indicated between the use of internal finance and the level of new investment (.241(.014)). Interestingly firms financing investment externally have a higher investment rate (.157) as compared to the internal financing(.051). What this implies is that liquidity constraint is not a major problem especially when investment rate is minimal. However, to finance higher investments external sourcing becomes a viable option. Thus there is more demand for external financing when investment is growing at an accelerated rate.

Although foreign banks loan do not look very attractive there a growing tendency to finance investment with foreign currency loans. A positive correlation is indicated between the proportion of loans in foreign currency and the level of investment. Firms with a proportionately higher than 50 percent of their loans in foreign currency seem to reflect a higher level of investment and especially for the equipment; the investment rate is 7.7 percent for firms with more than 50 percent foreign currency loans compared to 6.2 percent for firms with foreign currency component of less than 50 percent.

**Table 6 Financing New Investments**

Method of financing the working capital	Number utilizing the service	Average percentages of new investment financed
Internal funds or retained earnings	51.9	77
Local commercial banks loans	17.3	74
Overdraft facility	11.7	74
Trade credit (supplier or customer credit)	4.8	56
Parent company	3.0	33
Lease arrangement	2.6	47
Foreign banks loans	2.2	77
Equity, sale of stocks	2.2	37
Family, friends	2.2	52
Development financial institutions, NBFIs, NGO	1.3	40
Credit card	0.9	20

*Source:* World Bank/KIPPRA, RPED Kenya, 2003

The relationship among the three major finance sources, show negative and significant correlation between internal funds and loans (-.961(.000), and also between the internal funds and overdraft is -.496(.121). A negative correlation is shown between the use of the overdraft and the loan in financing the new investment. This implies substitution among the various options of financing new investment.

The cost of finance show a positive correlation between interest paid on overdraft and loans; a negative relationship is indicated between the interest rates and the use of loan and overdraft. Relating the cost of finance to the alternative financing methods we find use of internal funds is negatively correlated with lending rates which implies that cost of finance is important in choice across the various alternatives.

Shareholding structure has a relationship with the method of financing with the agency problems emerging. To reduce agency costs and avoid the risk of managers consuming perquisites and investing less in managing firm's activities then idle cash is utilized to finance investment while debt is high as a commitment to pay out cash. Results in table 12 show that in firms where the individual shareholding is less than 40 percent utilization of internal funds and credit instruments is very high

and investment rate is relatively high. There seem to no clear pattern in financing between the foreign and local firms.

Table 7 Relationship between investment financing and firm ownership

	Internal financing	Overdraft facility	Bank loan	Proportion of foreign currency loan	Investment rate	Growth in sales
Less 40	77.75	86.00	82.86	42.31	.23	.28
40-70	76.25	67.73	77.69	62.32	.06	10.23
Over 70	74.06	75.45	65.89	56.88	.12	.38
Foreign firms	79.00	67.50	78.75	69.34	.09	17.82
Local firms	75.72	74.32	74.61	50.02	.14	.24

In conclusion we note first that investment is mainly financed through internal funds which seems to show liquidity as not a major problem. However the level of investment is higher when external financing is used significantly. It means that internal funds can sustain growth in investment up to a certain level while accelerated investment requires external capital injection. Second investment financing does not reject the presence of information asymmetry in the financial market; it reflect a pattern closer to the pecking order hypothesis where internal funds are first then debt and equity as a last resort. Equity financing is not popular and this may also reflect on the growth level of the capital market or an emerging financial structure with minimal role of financial markets. Third foreign currency loan forms a substantial amount of the total loans by the firms. This could be reflecting a situation where the exchange rate risk is significantly lower than the credit risk premium in the domestic market. And fourth cost of finance play a significant role in defining the use of alternative financing instrument.

## 5. Capital market deepening and economic growth

### 4.1 Empirical framework

To analyze the relationship between economic growth and financial deepening, we assume the following model.

$$Y = f(A, K, L) \tag{1}$$

Equation 1 can be expressed in per capita terms so that

$$\frac{Y}{L} = f\left(\frac{A}{L}, \frac{K}{L}, 1\right) \quad 2$$

Assuming a Cobb-Douglas function equation 2 can be expressed as

$$y_t = a_t k_t$$

where  $y$  is  $Y/L$ ;  $a$  is  $A/L$  and  $k$  is  $K/L$

The model assumes that investment is defined by

$$I_t = (K_t - K_{t-1}) \quad 3$$

and

$$I = S \quad 4$$

$$S = sy \quad 5$$

where  $s$  is marginal propensity to save

Change in technology overtime is defined as

$$(a_t - a_{t-1}) = g_a a_t \quad 6$$

$g_a$  is rate of technological change

The rate of growth of per capita is defined as

$$\frac{1}{y} \frac{dy}{dt} = g_a + as \quad 7$$

Thus the model assumes that the rate of per capita growth is defined by the saving rate and the rate of change in technology. Assuming an imperfect financial market, then not all of the savings may be channeled to investment. Thus, following Pagano(1993), we assume that a proportion of savings  $(1-\delta)$  leaks out of the system. Thus the rate of per capita growth is defined as:

$$\frac{1}{y} \frac{dy}{dt} = g_a + a\delta s \quad 8$$

Financial sector development is assumed to affect growth through the amount of savings put in investment ( $\delta s$ ) and the technological development ( $g_a$ ). King and Levine (1993) and Beck et al (2000) suggest that financial systems are important for productivity, growth and development. Well functioning institutions and markets, it is noted, augment technological innovation, capital accumulation and therefore economic growth (Goldsmith, 1969; McKinnon, 1973; Shaw, 1973; Boyd and Prescott, 1986; Greenwood and Jovanovic, 1990; King and Levine, 1993). Well-functioning financial markets lower the costs of transaction increasing the amount of savings put into investment. They also allows for capital to be allocated to projects that yield the highest returns and therefore enhance economic growth rates. McKinnon (1973) indicates that development of capital market is necessary and sufficient condition to foster the adoption of best practice technologies and learning by doing. However, development of all financial institutions and markets has different magnitudes of impact given the different services they provide (Levine and Zervos, 1998). It is also important to note that enhanced financial development reduces the cost of external finance to the firms promoting growth (Rajan and Zingales, 1998). Further, Wurgler (2000) show that even if financial development does not lead to higher levels of investment, it allocates existing investment better and therefore promotes economic growth. Thus,

$$\delta s_t = f(FD_t) = \alpha_0 + \alpha_1(FD_t) + \mu_t \quad 9$$

$$g_{a_t} = f(FD_t) = \beta_0 + \beta_1(FD_t) + \eta_t \quad 10$$

Thus,

$$g_y = f(FD_t) = \lambda_0 + \lambda_1(FD_t) + \varepsilon_t \quad 11$$

where  $g_y$  is growth in per capita;  $\lambda_0 = \alpha_0 + \beta_0$ ;  $\lambda_1 = \alpha_1 + \beta_1$ ;  $FD$  is financial sector development and  $\varepsilon_t$  is the error term with the usual properties.

#### 4.2 Analysis results

Table 8 relates financial development indicators with the economic growth indicators. Across the economies it is not clear to bring out the relationship between the financial development indicators and economic growth. Panel II of the table shows the relationship between the economic growth indicators and financial system development indicators. It shows that significant relationship with the access and depth measures. This is also true for the financial intermediaries and more so the

capital market. The correlation coefficients for economic growth are much higher than those of investment and saving rate.

Table 8 Correlations between the financial sector and economic growth indicators

Variables	OVERALL	GDP	INV	SAVING
Mean values across the economies				
South America	3.24	4.24	18.23	22.85
Europe	3.72	5.37	22.33	27.78
Asia	3.98	6.23	26.55	31.27
Developed markets	5.07	2.36	19.65	23.34
Others (Arab and African countries)	3.78	5.87	18.01	27.65
Correlations				
CAPMKT		0.478	0.183	0.120
STOCK		0.133	0.192	0.015
BOND		0.484	0.092	0.134
ACCESS		0.421	0.101	0.096
DEPTH		0.262	-0.053	-0.042
BANK		0.423	0.074	0.117
NON-BANK		0.268	0.008	0.232
PRIVATE BOND		0.461	0.034	0.071
PUBLIC BOND		0.367	0.131	0.226
INTERNATIONAL BOND		0.523	0.104	0.047

Regression results indicate a significant relationship between economic growth and capital market and banks variable but not with the non-banking variable. More specifically, banks and bonds are highly significant. When we consider the access and depth variables we find significant relationship with the overall measure of financial access and also with the financial market sophistication and availability of venture capital while the financial deepening factors were M2/GDP and Deposit/GDP.

The economic growth model performed better when we included other factors. The non-financial factors that showed significant relation include the infrastructure, cost of doing business and investment. They show the higher the level of investment the higher the level of economic growth. Keeping cost of doing business low and strengthening the infrastructure will increase economic growth.



Table 9 Regression results-GDP growth model

Variables						
Constant	9.576(7.871)	6.578(12.030)	6.468(11.694)	5.570(10.838)	1.766(1.621)	2.204(1.164)
OVERALL	0.507(4.165)					
CAPMKT		0.393(2.812)				
BANKS		0.305(2.175)	0.299(2.139)		0.260(2.264)	
NON-BANKS		-0.064(0.431)	-0.083(0.559)			
STOCKS			0.104(0.846)			
BONDS			0.415(3.000)			0.204(1.791)
ACCESS				0.446(3.053)		
FMS						0.376(1.962)
VCA						0.268(1.842)
DEPTH						
M2/GDP				1.471(2.280)	1.349(2.783)	
DEP/GDP				1.501(2.339)	1.160(2.447)	
NFRA					0.344(2.936)	0.216(1.771)
INV					0.342(3.105)	0.332(3.308)
COBD					0.423(3.674)	0.289(2.481)
R2	0.258	0.300	0.319	0.291	0.678	0.601
Adj-R2	0.243	0.256	0.261	0.234	0.619	0.547
F	17.345(0.000)	6.854(0.001)	5.511(0.001)	5.069(0.005)	11.558(0.000)	11.058(0.000)

The investment function shows significant relationship with various measures of financial depth including the market liquidity (M2/GDP), private debt/GDP and private credit/GDP. Investment is also higher with adequately developed stock market. the accelerator effect is also significant.

Table 9 Regression results-Investment model

Variables	
Constant	0.160(6.902)
M2/GDP	0.797(3.154)
Private sector credit/GDP	-0.774(2.013)
STOCK	-0.447(2.672)
GDP	0.292(1.788)
R2	0.3623
Adj-R2	0.2560
F	3.4089 (0.0147)

## 6. Factors defining development of capital market

Policy and institutional factors play a key role in development of the capital markets. Investors require confidence, protection and information to participate in the market. Firms look for fiscal incentives, ease of entry and the internal firm policy. For a bonds market to contribute significantly in the development process it requires that the market cater for a diverse risk preferences, be liquid, efficient and have minimal volatility. To achieve this, there must be a sound fiscal and monetary policy, effective legal and regulatory framework, secure and efficient settlement and custodial system, effective information disclosure system, a diversified investor base, favourable tax policies, an effective financial system and for Treasury bonds, a sound and prudent debt management and credible and stable government. In addition, the development of a well-functioning money market is essential in enhancing liquidity of the market; an active money market is the precursor to an active secondary bond market.

Correlation between the financial sector and the institutional and business environment factors show significant relationship with the various factors. Regression analysis indicated that the infrastructure and cost of doing business play a key role in development of the market. The various factors includes the human capital factors which include the quality of labor force. Infrastructure is also significant and it shows the ability to reduce the cost of transaction. The other factor is the legal and regulatory issues. The other aspect is the domestic financial sector liberalization.

Table 10 Regression results-GDP growth model

Variables	BOND	CAPMKT	PRIVATE BOND
Constant	-0.212(1.5913)	-0.044(0.274)	-33.283(2.348)
HCAP	0.307(0.199)	0.305(1.984)	0.408(2.294)
NFRA	0.503(2.980)	0.503(2.978)	0.272(1.430)
LEGAL	-0.506(2.996)	-0.331(1.959)	-0.414(2.183)
DFSL	0.313(2.465)	0.205(1.612)	0.490(3.426)
R2	0.4058	0.4037	0.4812
Adj-R2	0.3552	0.3530	0.4120
F	8.0243(0.000)	7.9549	6.9566

Having seen the factors that seem to influence the development of the capital market and especially the bond, the study moved on to analyze the strategies that the economies have put in place in ensuring that their markets achieve a high development.