



**The Growth of the Gambian Foreign Exchange Market and  
its Impact on the Profitability of Commercial Banks.**

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## Abstract

This study provides empirical evidence on the relationship between the growth of the foreign exchange market and the profitability of Gambian commercial banking industry. It uses non-interest income made by banks from January 2005 to June 2012 although the initial intention was to collect data from 2007 to June 2012 assessing the periods by quarters. This was because the Central bank data (Balance Sheets) made available to me for the period under study could only show income of banking industry in the form of either interest or non-interest income. I have already been reliably informed that the foreign exchange income constitutes a considerable proportion of the yearly non-interest income of banks. A total of 30 observations were made over a period of seven and a half years.

Related literature on Gambian FX market was hard to come by as a basis for comparison, thus literature from other countries has been used as basis for comparison. It should however, be noted that, good data relating to Growth of the foreign exchange markets and impact on profitability of banks was not easily available. Increases in transaction volumes of FX are negatively correlated to profitability of banks and the banking industry, suggesting that as total volume of FX transactions increase profitability of

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banks decreases. My findings also proved that volume of FX sales increases profitability while purchases decrease profitability but sale of FX increases profitability by a much greater proportion than the losses due to purchase. Finally the relationship between exchange rates and interest rate is inverse. As exchange rate decreases interest rate increases; but on the other hand exchange rate has a direct relationship with inflation. The two moves in the same direction. The results on a broad base are not inconsistent with the past findings made elsewhere.

## **Acknowledgements**

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Finally and most importantly, I wish to extend special thanks to my mother.

I firmly dedicate this piece of work entirely to her.

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**CHAPTER 1**

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## Introduction

The Gambia is a small country with a total population of about 1.8MM people by July 2011 (CIA world Fact book- Gambia). Real GDP per capita registered a growth of 3.3% in 2008. But this proved unsustainable and it consequently shrank by 2.2% in 2009 and a further 2.0% in 2011 (Index mundi 2011). GDP per capita PPP registered a growth from \$2,000 in 2009 to \$2,100 in 2011. The National domestic currency is the Dalasi, also called Gambian Dalasi (GMD or just D). Its exchange rate to the US dollar has been going up from 27.79 in 2007 to 30.29 in 2011. Interest rates are at 15% and inflation at 5% from 4% in 2010 ([www.CIAWorldfactbook.com](http://www.CIAWorldfactbook.com), Gambia).

The FX market can be characterized by the existence of banks, bureau De change (BDCs) and several individual dealers who are freely seen working in the streets to buy and sell foreign currency. Rather than an electronic trading platform, foreign currency deals are generally initiated and concluded through telephone calls. This illustrates the rudimentary nature of the Gambian FX market and clear signs of its underdevelopment. The Market can also be characterized by frequent shortages of foreign currency which makes it a demand driven FX market. My experience is that the Central bank corrects market excesses or

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shortages of Foreign exchange by their intervention strategies by mopping up or injecting currency respectively as a means of easing up. However, the issue is, whether the quantity intended to correct the market imbalance is enough or not at anytime. The biggest problem of the Gambian FX market is the frequent shortages of FX which in many cases in my view leads to high volatility. This can be confirmed from the MPC meeting -Foreign Exchange market 2010 in which the Central Bank Governor was quoted saying “ with a demand driven market, the Dalasi continued to slide against the major trading currencies and the volatility level remains significantly high” (MPC Forex August, 2010, CBG).

The Foreign exchange market virtually transacts in all international currencies such as the US dollar (\$), British Pound Sterling (£), Euro (€), Swiss Franc (CHF), XOF- CFA Franc, Swedish Krona (SEK), Norwegian Krona (NOK), Danish Krona (DKK) mainly. Among all this currencies, the US dollar has historically been the most traded currency. The reason can greatly be explained by the increasing volume of letters of Credit (LCs) most of which are done in US dollars.

The major sources of foreign currency are tourism, private remittances, re-exports, and Foreign Direct investments (MPC Forex September, 2011, CBG).

It must be specifically mentioned that towards the last quarter of 2007, the Gambia experienced an unprecedented depreciation of virtually all internationally traded currencies in the Gambian market especially the major traded currencies namely the USD, GBP and the EURO. The dollar dropped from somewhere around D27/\$ to below D20/\$. The reasons according to the CBG were a product of the pursuance of prudent macroeconomic policies, healthy reserve cover and growing confidence in the economy as well as increased inflows from tourism, FDI and private remittances (MPC Foreign Exchange, November 2007).

It must be noted that the functions of Commercial banks is beyond just foreign exchange. Commercial banks also mobilize savings account deposits and pay interest on such accounts. They avail credit/loans to both individuals and corporate organizations by charging a certain interest rate. However, this study is intended to find the relationship between growth of the FX market and profitability of commercial banks in the Gambia. The simple assumption is that when banks become profitable, this will put the economy on a healthy financial footing the ultimate effect of which is a higher standard of living for the Gambian populace.

## CHAPTER 2

### Literature Review

The increasing entry of new banks into the Gambian banking industry especially the Nigerian Subsidiaries is believed to be one of the most important explanations for the increasing level of activity in FX and FX related transactions and by implication leading to eminent volume of growth of foreign currency market in the last decade. A study entitled “the volume and volatility in the Icelandic Foreign Exchange by Porarisson (2009), observed that foreign exchange markets both abroad and Iceland, has had tremendous growth over the last two decades. Research on exchange rates economics has also grown, and the field has seen a number of important developments as econometrics progresses and data becomes more available. (Porarisson, 2009).

A study of the “influence of the financial markets and institutions on the economic growth” by Olguin Alvarez, Erik Sabah and Fred (2007 page14), argued that foreign exchange market is of undeniable importance for the economy of a country. In the foreign exchange market people trade one country's currency for another country's. Such transactions are needed whenever households, firms, or government want to acquire something

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from the rest of the world, something for which they must pay in the currency other than the one in which they receive their revenue. (alvarez Sabah and Fred 2007).

### **Profitability Vs Risk due to Volatility**

For continuity of business, financial institutions must just be profitable. Other things been equal, we would expect that an increasing supply of FX in the market should translate in higher profits but the various risks associated with trading could make this rather unattainable. Sometimes volatility for example can bring about quite a great deal of uncertainty (Porarisson 2009). He also observed that, the study of FX market growth and its impact on profitability will remain incomplete without the understanding of relative factors like volatility which impact on pricing. The study investigating the relationship between volume and volatility is arguably the most important concept in finance and can be thought of as a measure of uncertainty or risk. High exchange rate volatility for a given period corresponds to high degree of uncertainty regarding exchange levels for that period (Porarisson 2009).

According to him, banks protect themselves from exchange losses through hedging through the use of commonly known methods such as

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forwards, features and swaps. The most widely used methods of avoiding loses due to exchange rate movement in the Gambia is Swaps (spot) deals. The reason is best explained by the level of underdevelopment of the Gambian FX market. It is however, highly argued in academics that when people hedge, they are actually protecting themselves against any form of risk or loses. Sabri Hussain Maroof (2011), in his thesis entitled, "Foreign exchange Risk management in Commercial Banks in Pakistan made the conclusion that in Pakistan, commercial banks use three types of derivatives I.e. Forward Exchange contracts, Currency swaps and Foreign Exchange options. All these contracts according to him are over the counter. Forward exchange contracts are used by all banks whereas currency swaps are second popular tools used by commercial banks and foreign exchange options are used by only a few banks. The use of currency derivatives depends on the ownership of status of the bank, size of bank and the net foreign exchange exposure relative to net foreign exchange assets whereas it does not depend on rate volatility and type of bank.(Sabri Hussain Maroof, University of Lahore, 2011).

A similar work was done by William Barker Financial Department, Bank of Canada review in a paper entitled The "Global Foreign Exchange Market: Growth and Transformation". He asserted that Foreign Exchange is known

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to be the largest financial market in the world as measured by daily turnover, global foreign exchange markets is 3.2trillion a day.(Barker William, 2007).

Although the exchange rate regime in the Gambia is a floating one, the Central Bank of the Gambia (CBG) actually doesn't seem to be tolerant to currency weakness and strength. Hence, from experience the CBG is occasionally seen intervening in the foreign exchange (FX) market to bring about sanity, create equilibrium and exchange rate stability. A similar study by Joy (2010) came up with a similar conclusion by emphasizing that intervention whether implicit or explicit is compatible with the pursuit of an exchange rate target (Joy M. 2010)

### **Market growth**

The last 10 years from 2002 has witnessed an increasing flow of foreign banks (especially from Nigeria) in to the Gambian market which now has 13 banks from a total of only 4 in 2002. A study in Kenya by Olweny Tobias and Shipho (2011) observed that the number of structural reforms in that country has led to so many structural changes in their banking sector and had encouraged the foreign banks to enter and expand their operations in Kenya.

This study intends to establish a relationship between the growth of the FX market and its impact on profitability using volumes; and has no intension of establishing any relationship between volatility and trading volumes. However, the relevance of volatility in FX trading cannot be ignored as it creates a lot of uncertainties that all market players are bound to confronts. Thus, Porarisson (2009) in his thesis submitted in partial fulfillment for the requirement of a Masters in Financial Economics concluded that trading volumes should be positively correlated with volatility. He further found out that the relationship is even stronger during times of severe market stress. A similar study by Galati (2000) made a similar conclusion.

A moment's reflection reveals that importers and commodity dealers are more inclined to increase prices of their commodities during times when the price of dollar is tending upwards than any other time. During such times they are seen expressing their concerns about the price of the goods they sell. It gives one the obvious feeling that exchange rate hikes do possess inflationary tendencies. A similar study conducted by Edwards (2006), concluded that exchange rate is one of the most important macroeconomic variables in the emerging and transition countries. It affects inflation, exports, imports and economic activity. For decades the

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vast majority of emerging countries had rigid exchange rate regimes – either pegs (adjustable or hard) or managed. This, however, has changed during the last few years, when an increasingly large number of countries adopted flexible exchange rate regimes. This move away from exchange rate rigidity has tended to take place at the same time as many countries embraced inflation target for conducting monetary policy (Edwards Sebastian, 2006).

Common experience has shown that there is no doubt that income earned by Gambian banks from foreign exchange transactions constitutes an important part of any banks annual income. This explains why commercial banks endeavor to push their interbank share of the FX Market. Aburime (2008) in a paper entitled “Determinance of Bank Profitability: Macroeconomic evidence from Nigeria”, argued that exchange rate regime, real interest rate, inflation and monetary policy via liquidity ratio significantly determine the profitability of banks in Nigeria (Aburime, Toni Uhomobhi (September 2, 2008).



## **Theoretical Frame work: Bank Profitability**

### **Asset Portfolio Mix**

Previous studies (Rasiah 2010), point towards the fact that, a bank's revenue is basically generated from its assets. However, it is worth noting that not all assets generate revenue. Thus, the assets of a bank can basically be classified as income or revenue generating and non-income generating. To this extent, it is worth noting that banks' income comes from two sources:

- i. interest income
- ii. Non-interest income

### **Non-Interest Income Earning Assets**

Sources of income other than earnings from loans are called non-interest income. Non- interest income includes fees earned from offering unit trust services, service charge on deposit account, standard fees and charges for other bank services. With increasing globalization and financial liberalization the banking business has been undergoing a gradual transformation away from the traditional business of financial intermediation and towards provision of other financial services including

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mutual fund, insurance etc. Thus, non-interest income would represent a key source of bank revenue in the future (Rasiah, 2010). These views of Rasiah were also shared by DeYoung and Rice (2000) who also argued that non-interest income now accounts for nearly half of all operating income generated by U.S. commercial banks.

Without any contraction, it appears the greatest chunk of the non interest income earned by commercial banks in the Gambia comes from exchange income from currency trading.

### **What determines Exchange rate?**

#### **1. Trade Balance**

Exports, imports and the trade balance can influence the demand of currency aimed at real transactions. An increasing trade surplus will increase the demand for country's currency by foreigners (Kalra 2005).

If exports and imports largely determined by price competitiveness and the exchange rate are truly sensitive to trade imbalances, then any deficit would imply a depreciation followed by booming exports and falling imports. Thus, the initial deficit would be quickly reversed. Trade balances would almost always be zero.

Kalra (2005) further argued that exports and imports are not only determined by price competitiveness (and the exchange rate is not truly sensitive to trade imbalances), therefore trade imbalances can be quite persistent (as is the case with the current trade deficit in the United States). One reason is tariffs and quotas exist to protect a country's foreign exchange by reducing demand.

Capital movements of foreign currency are usually connected with international trade.

## **2. Relative Purchasing Power Parity**

Another form of real determination of exchange rate is offered by the "one price law" or the "purchasing power parity", according to which any freely moving good or service has the same price worldwide, after taking into account nominal exchange rates. But in order to equalize the price of several goods, more than one exchange rate may turn out to be necessary, or an exchange rate that represents a tradable basket of goods and services (Kalra 2005).

The purchasing power parity exchange rate (PPP) between a foreign currency and the U.S. dollar can be defined as:

$$\text{PPP} = \frac{\text{(Cost of a Market Basket of Goods and Services at Foreign Prices)}}{\text{(Cost of the Same Market Basket of Goods and Services at U.S. Prices)}}$$

This gives us the exchange rate in terms of the units of foreign currency per dollar. The dollar per unit of foreign currency is just the reciprocal.

The exchange rate between countries, therefore, should be such that the currencies have equivalent purchasing power. The foreign exchange market would adjust, over the long term, to permit the functioning of the "one price law", because the purchasing power of one currency increases (or decreases) relative to another currency. The above views of Kalra have also been echoed by (SARNO and TAYLOR 2002)

### **3. Relative Interest Rates**

Interest rates on treasury bonds according to Kalra (2005), will influence the decision of foreigners to purchase domestic currency in order to buy these treasury bonds. Higher interest rates will attract capital flow from abroad, thereby increasing demand for the currency, and therefore the currency will appreciate. Note, what is important is difference between domestic and foreign interest rates, thus a reduction in foreign interest rates would have a similar effect.

Accordingly, an increase of domestic interest rates by the central bank could be considered a way to defend the currency.

But, it may be the case that foreigners rather buy shares instead of treasury bonds. If this were the strongest component of currency demand, then an increase of interest rate may even lead to the opposite results, since an increase of interest rate quite often depresses the stock market, leading to share sales by foreigners. A restrictive monetary policy (increasing interest rates) usually also depresses the growth perspective of the economy.

If foreign direct investment are mainly attracted by future growth prospects and they constitute a large component of capital flows, then this FDI inflow might stop and the currency could weaken (Kalra, 2005).

#### **4. Relative Price Changes**

The inflation rate is also considered to be a determinant of the exchange rate. A high inflation rate should be accompanied by depreciation of the exchange rate. The more so if other countries enjoy lower inflation rates, since it should be the difference between domestic and foreign inflation rates to determine the direction and the scale of exchange rate movements.

The relationship between real, nominal exchange rates and inflation can be expressed as the following approximation (which can be applied to any two countries, not just the United States and Japan):

$$\% \Delta \text{Real Exchange Rate } (\text{¥}/\text{\$}) \approx \% \Delta \text{Nominal Exchange Rate } (\text{¥}/\text{\$}) - (\text{Japanese Inflation \%} - \text{U.S. Inflation \%})$$

In reference to the overall price level of the economy, if exchange rates would move exactly counterbalancing inflation dynamics, then real exchange rates should be constant.

Aside from trade balance, Relative Purchasing Power Parity, Relative Interest Rates and Relative Price Changes Kalra (2005) believe that there are other factors that also influence the exchange rates. They include change in government, wars or the believe that certain currencies such as Swiss franc behaves in a particular way, can have significant influences on currency exchange rate. This was evident during the financial crisis 2007 to 2009 especially in Europe and the United states when all the major currencies were depreciating/falling drastically. It was the psychology and politics that was driving the exchange rates mainly. Apart from the psychology political factors and speculators, the activities of foreign

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exchange traders and financial instruments also influence market exchange rates.

### **The Global Economy- Taking a brief look at the International Financial crisis 2007 to 2009.**

This study would appear incomplete if it fails to make mention of the international financial crisis that stroke the global economy in the late 2007 up to 2009. Many different reasons have since been advanced as to what led to it. Virtually every country had taken its fair share of the consequences. However, it is widely agreed that the crisis was mainly caused by corporate governance failures and failure of the Federal Reserve Bank to stop toxic mortgages. The corporate governance failure led to some small business organizations acting recklessly and unethically taking excessive risks. It is common knowledge that it started from the west (Europe and America) but its consequences cut across the entire global economy. Filardo (2012) emphasized that Asian economies were hard hit by the crisis. He further explains that Asian monetary policy could not completely protect themselves from consequences of the crisis as volatility spikes and uncertainties about the

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future gains momentum at various moments. Sanusi (2010) and Mishkin (2011) also share similar thoughts about the global Financial crisis and the lessons learnt there on.



## CHAPTER 3

### Methodology

This study has been conducted in the banking industry characterized by a very small size and simple but atypical.

Data was collected by making use of both primary and secondary data. The primary data used was in the form of questionnaire which was drawn from and administered at the Central Bank of the Gambia as the regulatory body of all commercial banks, 5 commercial banks and 5 major importers whose volume of FX transactions can be comparable to some small sized banks in the country.

The Gambia has a total of 13 commercial banks and 5 banks were selected through a random sample. The 5 major importers were selected on the basis of their size, and size in terms of volume of FX transactions. Their long standing experience and existence also reasons the criteria for their selection. The author initially intended to report and analyze on the profitability of both individual banks (top 3) and the banking industry at large. However, was told by the Central bank that, that was not reportable as it will serve as a bridge of confidentiality.

The statistical tool used to analyze data is SPSS. The variable market growth was initially tested using the relationship between the profitability

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of banks and the volume of sales and purchases. Data is presented using a regression. Profitability (Y) as the dependent variable is tested against growth factors such as FX Sales volume (SV) and FX Purchase Volume (PV).

In order to investigate the link between profitability and growth of industry, we can consider a simple small statistical model. Thus, the hypothesized relationship between the two variables can be represented in a linear relationship as:

$$Y = \beta + b_s SV + b_p PV + \varepsilon \quad (\text{equation 3.1})$$

$\beta$  = is the intercept (the constant) and it also represents the total amount of profit that would be made if no sales and purchases were made.

SV = the total of FX sold

$b_s$  = the parameter of sales volume

$b_p$  = the parameter of purchase volume

PV = the total of FX purchased

$\varepsilon$  = the disturbance or error term.

Looking at the sector in more detail, we now include other variables that influence the profitability. The variable market growth was test against the profitability of banks. Data is presented using a regression. Profitability (Y)

as the dependent variable is tested against growth factors such as FX Volume (V), time (T) and interest rate (I), exchange rate (Er) and inflation (IF).

In order to investigate the link between profitability and growth of industry, we can consider a simple small statistical model.

If we ignore the disturbance or noise term, the equation below for the relationship between profitability and the growth of FX market is represented by the equation for a line with the "intercept"  $\alpha$  and slope  $b_v$ ,  $b_t$ ,  $b_{di}$ ,  $b_{Er}$  and  $b_{IF}$ . We also assume that all other independent variables such as V, T, di, Er and IF, which affect profitability, remain constant. The V, T, di, Er and IF, are the independent variables or predictors of the profitability of Banks or the Banking industry.

Thus, the equation,

$$Y = \alpha + b_v V + b_t T + b_{di} di + b_n N + b_{Er} Er - b_{IF} IF + \varepsilon \quad (\text{equation 3.2})$$

Where

Y= profitability as an dependent" or "endogenous" variable;

$\alpha$ = a constant amount (what industry earns with zero growth in FX volume)

V= volume of FX as an independent variable that influences profitability

T = time from 2005 to 2012

$dI$  = Deposit Interest rates

$N$  = number of existing banks

$E_r$  = exchange rates

$I_F$  = inflation

$\varepsilon$  = the “disturbance” term showing other factors that influence profitability.

All the parameters are assumed to be positive with the exception of inflation

## CHAPTER 4

### Presentations of Data & Statistics

For the data collected from the Central Bank of The Gambia is presented in appendix (i).

#### **Recall the First Equation**

$$Y = \beta + b_s SV + b_p PV + \varepsilon \quad (\text{equation 3.1})$$

$\beta$  = is the constant and it also represents the total amount of profit that would be made if no sales and purchases were made.

SV= the total of FX sold

$b_s$  = the intercept of sales volume

$b_p$  = the intercept of purchase volume

PV=the total of FX purchased

$\varepsilon$  = the disturbance or error term.

Below is the presentation of statistics after been processed using spss on the data in appendix (i).

#### **Statistics for the first equation:**

Table 4.1

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#### **Coefficients<sup>a</sup>**

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Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95.0% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	69.818	41.646		1.676	.105	-15.632	155.269
	Pur Vol (\$)'million'	.815	.768	.594	1.061	.298	-.761	2.392
	Sales Vol (\$)'million'	-.115	.732	-.088	-.157	.876	-1.617	1.387

a. Dependent Variable: Profit/inco (GMD) million

$$Y = 69.818 + 0.815SV - 0.115PV + \varepsilon \quad \text{eq.3.1.1}$$

Std. Error      41.65                      0.768                      0.732

With the fitted coefficients, we can predict Y values and make our best guess of the sign of each intercept of S.  $\varepsilon$  is the non-deterministic component of our model.

Table 4.2

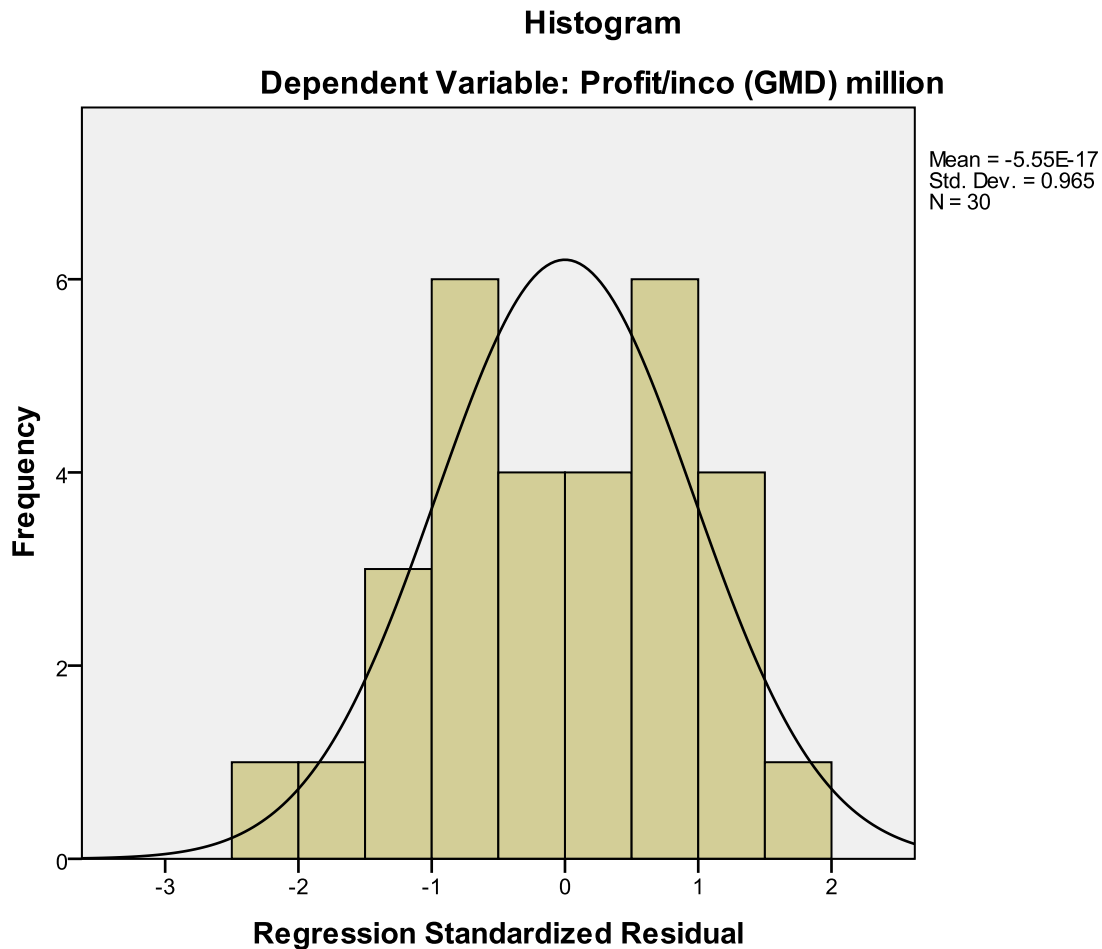
**Model Summary<sup>b</sup>**

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.510 <sup>a</sup>	.261	.206	48.933987	.261	4.758	2	27	.017

a. Predictors: (Constant), Sales Vol (\$) 'million, Pur Vol (\$) 'million'

A one percentage point increase of purchase volume decreases our predicted profitability level by 0.115 percentage points.

Figure 4.1



### Recall the Second Equation

$$Y = \alpha + b_v V + b_t T + b_{dl} dI + b_{Er} Er - b_{IF} IF + \varepsilon \quad (\text{equation 3.2.})$$

Where



$Y$  = profitability as an dependent" or "endogenous" variable;

$\alpha$  = a constant amount (what industry earns with zero growth in FX volume)

$V$  = volume of FX as an independent variable that influences profitability

$T$  = time from 2005 to 2012

$N$  = existing number of banks.

$DI$  = Deposit Interest rates

$Er$  = exchange rates

$IF$  = inflation

$\varepsilon$  = the "disturbance" term showing other factors that influence profitability.

All the parameters are assumed to be positive with the exception of inflation

## Statistics for the second equation:

Table 4.3

Model		Coefficients <sup>a</sup>						95.0% Confidence Interval for B	
		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Lower Bound	Upper Bound	
		B	Std. Error	Beta					
1	(Constant)	196.691	140.524		1.400	.175	-94.006	487.388	
	Time(t)	4.704	3.497	.754	1.345	.192	-2.530	11.938	
	FX Vol (USD' million)	-.023	.145	-.035	-.162	.873	-.323	.276	
	# of Banks	1.769	9.328	.084	.190	.851	-17.527	21.066	
	Exch. Rate	-1.511	3.387	-.077	-.446	.660	-8.518	5.496	
	Interest Rate	1.005	7.312	.034	.137	.892	-14.121	16.131	
	Dep.								
	Inflation	-12.090	5.766	-.360	-2.097	.047	-24.019	-.162	

a. Dependent Variable: Profit/inco (GMD) million

$$\begin{array}{l}
 Y = \quad \quad 196.691 \quad +4.704T \quad -0.023V \quad +1.769N \quad -1.511Er \quad +1.005dl \quad -12.09 IF \quad + \varepsilon \\
 \text{Std. Error} \quad 140.524 \quad 3.497 \quad 0.145 \quad 9.328 \quad 3.387 \quad 7.312 \quad 5.766
 \end{array}$$

The data also shows that an increase in exchange rate will lead to a fall in profitability as the relation from the results is negative. The relationship between Time, Number of Banks and Interest rates are all positive. This means that as time passes, number of banks increases and interest rates increases, profitability of banks also increases. The Volume of foreign

exchange has a negative relationship with profitability. As foreign exchange becomes more and more available banks capacity to make profit becomes impeded.

Table 4.4

**Model Summary<sup>b</sup>**

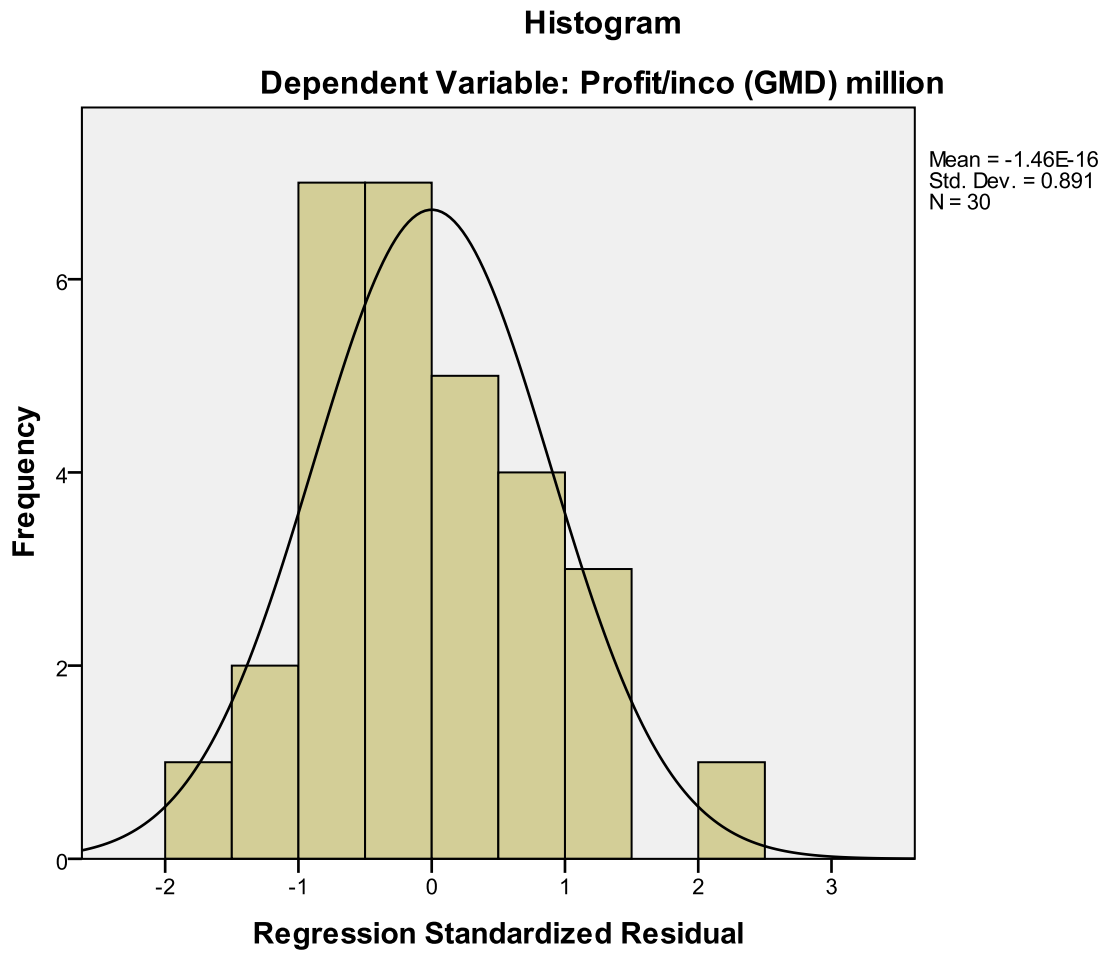
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	Df1	df2	Sig. F Change
1	.784 <sup>a</sup>	.615	.514	38.280125	.615	6.112	6	23	.001

-

a. Predictors: (Constant), Inflation, Exch. Rate, Time(t), FX Vol (USD' million), Interest Rate Dep., # of Banks

b. Dependent Variable: Profit/inco (GMD) million

Figure 4.2



## CHAPTER 5

### Analyses of Data

In this study attempts have been made to establish a relationship between growth of the foreign exchange market and the profitability of banks. If profitability is a proxy for growth, then it is the dependent variable and from the regressions. It can be observed that the relationships are positive for the two models used as their correlation coefficients are positive.

For the first model described in equation 1, we observed that with a given unit change in sales and purchases, it will respectively add 0.815 and minus 0.115 of sales and purchases to profitability. This implies that a sale of a Dollar will add 0.815 Dalasi to a profit and a Dollar purchase will reduce profit by 0.115 Dalasi. Given the public in the age of computer become more informed, it is in line with the analysis given above. The informed public would like to take as much as possible and the traders need these FX to finalize their trades, we also took that opportunity to recover the loss we incurred during purchases. These couples with the fact of scarcity of FX in developing countries like the Gambia make sales more profitable.

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We also observed a positive correlation between the profitability and the FX Sales and Purchase volumes which stand at 0.51 and R-Square stand at 0.261 indicating a relationship not strong. This leads us to use other variables outside the model to explain the profitability in banks' FX trading.

For the second model described in equation 2, we obtained the result as indicated as an equation below:

$$Y = 196.691 + 4.704T - 0.023V + 1.769N - 1.511Er + 1.005di - 12.09IF + \varepsilon$$

Std. Error	140.524	3.497	0.145	9.328	3.387	7.312	5.766	
------------	---------	-------	-------	-------	-------	-------	-------	--

A unit change of the Time (T), Number of Banks (N) and Deposit Interest Rates (di) do have positive increment on profit while transaction volume, exchange rate and inflation do have a negative increment on profit.

The correlation coefficient stand at 0.784 and with an R-Square of 0.615, it means that the relationship (correlation) of the dependent variable and the independent variable is 61.5%. This relationship is relatively strong and profitability is largely explained by these variables.

Looking at the effect of each of the independent variables we will assume the error to be constant plus all other variables and assess them one after the other. Thus, the total foreign exchange income that the

banking industry can possibly make if the disturbance or error term  $\varepsilon$  and all the variables are held constant is 196.691. A unit increment on time will increase the profitability of banks by 4.704 while profitability will drop by 0.023 if volume increases by one unit. This is important to note because by merely looking at the data on Appendix 3 one would be tempted to conclude that probably all the existing banks in the Gambia are profitable simply because the industry is already highly profitable. However, this outcome suggests that probably the greater proportion of the profit comes from only a few banks. This is consistent with my current experience as market player and as a currency trader. Less than 5 out of the 13 existing banks have been profitable in the Gambia. The industry leak table 2011 produced by the central bank indicates that only 4 banks out of 13 were profitable. The bottom 4 in fact made colossal losses. This means that there are other variables that influence profitability more importantly than just growth in volume of transactions.

A unit increase in the number of banks has the effect of increasing profitability by 1.769 holding all other things constant. If exchange rate and inflation increases by one unit, these will have the effect of reducing profitability by 1.511 and 12.09 respectively. This shows that inflation and exchange rate are directly correlated and move in the same direction.

This is not inconsistent with the current literature. Increase in exchange rates has the effect of increasing the prices of goods which has inflationary tendencies. Inflation makes imports more expensive and stifles economic activity. Interest rate on deposits has a positive correlation with profitability and as such, one unit increment on interest rates will have the effect of increasing profitability by 1.005.



## CHAPTER 6

### **Discussions and Interpretation of Findings**

Both exchange rate and inflation from 2005 to end of second quarter (Q2) 2012 have been relatively very stable. The stability of the exchange rates and inflation is in Appendix 2. The stability is associated with a more stable adjustment processes by the CBG in the foreign exchange markets through some sound macroeconomic policy management. From equation 2, it can be observed that the exchange rate and interest rates are having an indirect relationship. This is consistent with modern theories and has been proven in this model. When exchange rate goes up investors are tempted to convert their entire domestic currency to foreign currency to increase their earning in terms of exchange income. If everyone converts the little amount of money they hold in domestic currency it leads to excess supply of foreign currency. This may cause artificial shortage of domestic currency which will now push interest rates up. It goes on like this as a cycle.

This study assumed that factors such as time, interest rates and inflation affect the profitability of commercial banks and hence the banking industry. As the number of players (banks and BDCs) increases the volumes also increase as most of these banks are subsidiaries and have their parent offices outside this country. Their ability to have access to low cost foreign exchange loans to fulfill their obligations here at home would be a likely factor responsible for pushing bank's transaction volumes up.

The world is now a global village and often major events that happen in one location are generally felt on all the other parts. The Gambia therefore was never spared during the financial crises that stroke the world economy from 2007 to 2009.

The findings in this study through both formal and informal interviews revealed that the CBG, as the main financial regulatory arm of the country devoted its energies and directed its focus on building its foreign reserve. This helped to prevent the economy from the extreme effects of external shocks as a result of the crisis. The CBG also ensured sound financial and monetary policy framework to create an

environment of stability for inflation during this period. Although the effects of the crisis have been reportedly minimal, it still left its footprints on the Gambian economy. The major impact according to the results of the interviews conducted during this research especially with the Director of the Foreign Department Central Bank of the Gambia, was the significant fall in the interest earned on balances held with foreign banks. The crisis severely strangulated the earning capacity of the nations' foreign deposits as interest rates fell from around 5% down to 1% and below.

Commercial Bank's efforts to mitigate the impact of the crisis were directed at strengthening their foreign exchange sourcing as they expect imminent shortages during this time. They also shifted their strategy from exchange income to give much attention to commission and fee based income transactions. The availment of dollar loans was less frequent. Formal interview with business company executives reveals that the financial crisis has made their Business partners abroad much stricter in terms of settlements and negotiations. Another commented and I quote "the impact of the Global Financial crisis was never felt here until the end of the crises itself".

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## CHAPTER 7

### Conclusions, Implications and Recommendations

#### **Conclusion**

It has been established that sales increases profitability while purchases diminishes profitability but proportionally the profit due to sales is by far greater than the loss due to purchases. Hence, the more the banking industry increases its sale of foreign exchange the more profitable it becomes. The increase in the number of banks over the years has had a direct relationship with transaction volume in the banking industry. It can be concluded from the results obtained that profitability of banks is negatively correlated with transaction volumes of FX. This means that an increase transaction volume of FX will cause a reduction in the profitability of banks in the Gambia. It was also found that increase in volume does not necessarily lead to profitability. In fact an inverse relationship exists between transaction volume and the profitability of the banking sector. Interest rate on deposits is positively correlated to profitability.

From the results, it has been established that there is a strong relationship existing between exchange rate and inflation. The two move in the same direction. Determination of a much more complete accounting of the dynamic structure of the relationship between exchange rate and inflation should be possible with the passage of time as only seven years of data is been captured and analyzed in this research.

### **Implications**

There is common consensus that once banks become profitable, the financial sector also becomes stronger which translates in to a vibrant and healthy economy for all citizens. The findings of this study can be utilized by both foreign currency traders and policy makers for better decision making.

The findings of this study will also serve to create awareness for investors and those already engaged in the FX business.

## Recommendations

1. For banks to be profitable, they must create the demand of foreign currency and increase their transaction volume in sales.
2. For banks to remain profitable inflation must be kept low as high inflation diminishes the value of money (PPP). The CBG can do this by ensuring printing of money is adequately controlled and the demand side does not exceed supply side at certain times unless is by design.
3. The CBG should further ensure exchange rate stability to encourage trade and capital flows in to the country through its sound macroeconomic policies.
4. A study to determine a much more complete accounting of the dynamic structure of the relationship between exchange rate and inflation will be very meaningful to these research findings and is therefore recommended.
5. A separate study on the impact of the new banks on the profitability of the banking industry is recommended to empower the finding from this research.

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Appendix

Appendix 1: Questionnaire



**AMITY UNIVERSITY**  
UTTAR PRADESH



**INDIA**

**GAMBIA LEARNING CENTRE:**

**MBA INTERNATIONAL BUSINESS: 2010 TO 2012**

**Research topic:**

***The Growth of the Gambian Foreign Exchange Market and its impact on the profitability of commercial Banks.***

**Question 1 to 12 are meant for commercial Banks while 13 to 32 are for the Central Bank of the Gambia.**

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1. What volume of FX did you trade 2011?

.....

2. (I)What proportion of this makes up your sales/purchase?

.....

.....

(II)What is your opinion on the existence of 13 banks in the Country?

Do you see it as a curse or an opportunity?.....

.....

.....

3. In your opinion, do you believe that the FX market has grown over time from 2006 to date? Please tick your answer.

a. Yes, I strongly agree

b. Yes, I agree

c. No, I strongly disagree

d. No, I agree

4. Which of the following could have been responsible for the growth?  
if any. Please tick all that apply.
- a. Increase in FX volume
  - b. Increase in customer awareness
  - c. Increase in the number of banks
  - d. Introduction of new products in the form of new securities
  - e. Expansion in the number of Bureau De change (BDCs) and individuals involved in the FX business.

5. Who are your major sources of FX in the Market?

.....  
.....

6. What are the challenges associated with sourcing FX in this market?

.....  
.....  
.....

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7. What are the risks involved in currency trading?.....

.....

.....

i. Do you have any experience to share in this regard.....

.....

.....

.....

8. What strategies to you use in circumventing or minimizing losses due to exchange rate in your daily trading?

.....

.....

9. What kind of assistance are you getting from the Central bank?

.....

.....

10. Do you consider the assistance coming from the Central Bank sufficient?

Yes/No.....

If no, explain:

.....  
.....

11. What kind of assistance would you recommend to the Central Bank?

.....  
.....  
.....

12. What regulatory framework (if any) do you have in place to correct the constraints related to the foreign exchange market?.....

.....  
.....

**Questionnaire meant for *the Central bank***

**Annex**

13. How many registered BDCs do we have in the Market by
- a. 2005 .....
- b. June 2012.....
14. What was the total volume of FX traded in the industry in 2011?
- Outflows.....
- Inflows.....
15. Which banks are the most dominant on FX Trading in the industry?
- .....
- .....
- .....
16. Which ones are the top 3 or 4 most profitable banks

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- a.....
- b.....
- c.....
- d.....

17. Is their profitability linked to size by any chance? **Yes/No**

18. Are there mechanisms in place to control the movement of money in and out of this country? Please Specify.....

.....

.....

19. How do you enforce them?

.....

.....

20. Does the Central Bank intervene in the Market at all?

Yes/No.....

If                                  yes,                                  how                                  often?

.....

21.      What determines exchange rates in the Gambian FX Market?.....

.....

.....

22.      What is expected of exchange rates when interest rate go up?

.....

23.      What happens to exchange rates when interest rates drop?.....

.....

24.      What is the effect of exchange rates on inflation?

.....

In your opinion, explain the effect of an overvalued/undervalued domestic currency due to exchange rates?

.....  
.....

Have you experienced any increase or decrease in FX volumes traded from 2007 to date?.....

25. What has been the effect of increasing FX volumes on the profitability of banks?

.....  
.....

what was the total volume of remittances received in terms of FDI and diaspora?

.....  
.....

26. What volume of LCs did industry do from 2007 to 2012? Please specify in terms of the three main currencies.

.....

27. In which currency are most LCs done?

.....  
.....

28. What was the total FX income made by the industry.....and the total income made by the industry including FX income.....?

29. What has been the trend growth in volumes over the years?

.....

30. What has been the effect of the Global financial meltdown on Foreign exchange transactions in the Gambia?

.....  
.....

## [Appendix 2](#) Glossary

**CBG:** Central Bank of the Gambia

**BDC:** Bureau De Change

**FX:** also referring to Foreign Exchange

**Forex:** the same as foreign exchange

**MPC:** Monetary Policy Committee

### Appendix 3: Data from Central Bank of the Gambia

Year	Quarters(Q)	Time(t)	FX Vol (USD' million)	FX Vol (GMD' million')	Exch. Rate	Interest Rate Dep.	Inflation	# of Banks	Pur Vol (\$)'million'	Sales Vol (\$) 'million'	Profit/inco (GMD) million
2005	1	1	224.17	6,534.56	29.15	17.50	6.3349	6	117.54	106.63	108.48
	2	2	174.15	4,988.09	28.64	13.50	4.8133	7	82.32	91.83	96.34
	3	3	165.08	4,625.77	28.02	12.00	3.8664	7	83.35	81.74	113.55
	4	4	237.49	6,671.18	28.09	12.00	4.4132	7	116.75	120.74	117.92
2006	1	5	271.59	7,613.16	28.03	12.00	3.5252	7	138.68	132.90	118.40
	2	6	291.32	8,103.91	27.82	10.50	2.5428	7	156.11	135.21	261.63
	3	7	294.32	8,184.40	27.81	10.00	1.4281	7	162.02	132.29	242.83
	4	8	366.67	10,169.26	27.73	9.50	0.7833	7	199.28	167.39	210.61
2007	1	9	383.63	10,631.19	27.71	9.50	2.7758	8	207.19	176	120.43
	2	10	409.72	11,110.05	27.12	11.00	6.4166	8	201.87	207.85	122.59
	3	11	416.48	9,814.34	23.57	11.00	6.2403	8	205.45	211.03	152.63
	4	12	337.01	6,924.15	20.55	11.00	6.0173	9	167.94	169.07	211.07
2008	1	13	437.03	9,477.25	21.69	11.00	4.3777	10	222.81	214.22	169.85
	2	14	465.21	9,417.62	20.24	11.00	1.7428	10	230.26	234.95	190.23

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	3	15	415.37	8,946.53	21.54	11.00	5.0372	10	206.12	209.24	181.02
	4	16	302.40	7,728.95	25.56	11.25	6.6659	10	160.66	141.74	175.16
2009	1	17	297.12	7,788.15	26.21	10.75	6.9062	10	152.12	145.00	176.29
	2	18	371.45	9,914.80	26.69	10.75	5.8445	10	189.67	181.79	225.27
	3	19	368.92	9,871.05	26.76	9.50	3.0951	10	187.95	180.98	240.52
	4	20	452.02	11,934.50	26.40	9.50	2.5421	10	231.85	220.17	267.57
2010	1	21	458.46	12,436.46	27.13	10.50	3.7707	12	223.73	234.72	183.86
	2	22	372.72	10,548.00	28.30	10.50	4.2437	14	185.23	187.49	253.49
	3	23	395.67	11,447.76	28.93	10.50	6.1857	14	197.32	198.35	245.63
	4	24	444.63	12,653.27	28.46	11.15	5.9639	14	214.60	230.03	273.31
2011	1	25	381.24	10,830.28	28.41	8.25	5.2795	13	189.05	192.19	224.90
	2	26	379.71	10,787.45	28.41	8.25	5.4668	13	188.06	191.65	207.16
	3	27	350.57	10,333.90	29.48	8.50	4.1321	13	176.88	173.69	242.39
	4	28	315.52	9,508.10	30.13	8.50	4.3430	13	151.97	163.55	236.74
2012	1	29	392.36	12,001.72	30.59	8.50	4.0199	13	197.47	194.90	238.99
	2	30	423.41	13,135.97	31.02	8.50	4.2300	13	211.21	212.20	248.78

Source: Central Bank of the Gambia

Appendix 4: Data from Central Bank of the Gambia

**Industry Growth Trend in term of number of  
Banks and BDCs from 2005 to 2012**

<b>Period</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>%Change</b>
No. of BDCs	31	38	39	44	43	49	54	57	54
No. of Banks	7	7	9	10	10	14	13	13	53

Source: Foreign Department, *Central Bank of the Gambia*