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INFLUENCE OF DEBT MONITORING ON THE PERFORMANCE OF GOVERNMENT SECURITIES

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Abstract: *Kenyan government has persistently failed to collect adequate resources to finance its budget, and continues to rely on external and domestic debt to finance its developmental activities. Its public debt surged to trillions with 44.5% external and 55.5% domestic debt. This has raised concerns among policymakers that the rapid increase in public debt has the potential of eroding the country's sovereign rating. Public debt management is the process of establishing and executing a strategy for managing the government's debt in order to raise the required amount of funding and achieve its risk and cost objectives, sound debt structures help governments reduce their exposure to interest rate, currency devaluations risks and meet any other debt management goals that a government may set. The government security market has faced various challenges since its inception in 1980s in Kenya. The performance has been dismal. The purpose of this study is to assess the influence of debt monitoring on the performance of Government Securities. The study was guided by the following theories: The Firm Foundation Theory, Theory of Investment Value, Technical Theory and Random Walk Theory. The study used cross sectional survey design. The study unit of analysis was Kenya National treasury. The target populations was 25 officials of CBK and Treasury department of Public Debt management. Sample size was equal to target population; implying the adoption of census (saturated) sampling technique on the 25 officials of CBK and Treasury department of Public Debt management. The primary and secondary data was obtained from CBK for the period between 2000 and 2022 period. Primary data was collected using questionnaires. Data reliability was measured using Cronbach's alpha. The data collected was analyzed using descriptive and inferential statistics. Content analysis was performed on qualitative data. The results indicate a negative spearman's rho coefficient with debt monitoring (-.401, P= 0.00< .05) but significant association and a weak association exist between debt monitoring and performance of government securities as measured by yields of the securities (r = 0.375), further the debt monitoring can explain up to 14.1% of the variation in performance of government securities (r^2 = 0.141).*

Keywords: *Debt Management, Government Securities, Performance*

1.1 Introduction

In the last two decades the issue of commercial banks capital adequacy has become one of the most analyzed topics in banking and finance. Banks, regulators and academics have devoted substantial resources to developing capital adequacy regulations that could be generally applied to banks everywhere in the world. The central bank normally cannot become illiquid as long as the currency it issues is legal tender. Nevertheless, recent studies have concluded that positive central bank capital is required if the central bank is to perform its tasks successfully, in particular, to achieve price stability. The issue of central bank capital and financial

independence has in the past not attracted the level of public attention paid in relation to the operational and statutory or institutional independence of central banks.

According to Stella (1997, 2002), several central banks had incurred such large losses that they had to be recapitalized by the government, or were in the process of being recapitalized. Their balance sheets had become so weakened and capital was substantially negative. Any further losses were inevitable in these banks and this consequently interfered with the attainment of the central bank's policy objectives, primarily maintaining a low inflation rate. For instance in Uruguay in the late 1980s, the central bank's losses were equal to 3% of GDP; in Paraguay the central bank's losses were 4% of GDP in 1995; in Nicaragua losses were a staggering 13.8% of GDP in 1989. By end of 2000, the Central Bank of Costa Rica had negative capital equal to 6% of GDP. However, the study found that there were some rather puzzling outliers: for example, the Central Bank of Chile made losses over years but there was no effect on its very good inflation performance.

Government Security is a debt obligation instrument issued by a government authority, with a promise of repayment upon maturity that is backed by said government. A government security may be issued by the government itself or by one of the government agencies. These securities are considered low-risk, since they are backed by the taxing power of the government (Barr, 2009). Government securities promise repayment of principal upon maturity as well as coupon or interest payments periodically. Examples of government securities include savings bonds, treasury bills and notes. Government securities are usually used to raise funds that pay for the government's various expenses, including those related to infrastructure development projects. Because they are low risk, the return on the securities is generally low. Borrowing through government securities leads to public debt (Waweru, 2009). Public Debt is an obligation of a government and is also sometimes referred to as government debt. It is a term for all of the money owed at any given time by any branch of the government. It encompasses public debt owed by the federal government, the state government, and even the municipal and local government (Barr, 2009). Public debt, indebtedness of a central government expressed in money terms, often referred to as national debt.

Public borrowing is generally believed to have an inflationary effect on the economy and for that reason is often resorted to in recessionary periods to stimulate investment, employment, and consumption (Boyles, 2010). The link between the central bank's financial strength and the need to abandon price stability or repress the financial system is drawn from the possibility that the central bank becomes illiquid. The sustainability of central bank debt issuance is a function of the same factors that determine the sustainability of government debt in general. These include expectations of the future income and expenditure stream of the central bank, the growth rate of demand for the securities being purchased from the central bank, the reputation of the issuer of the security, macroeconomic developments, the government's commitment to guarantee obligations of the central bank, budgetary development among others (Martinez-Resano,2004). A sound and prudent debt-management operation is central to the government's credibility as an issuer.

The principal components of sound debt-management in many countries are based around the importance of having clear debt management objectives, proper coordination between debt management and monetary and fiscal policy, a prudent risk management framework, an effective institutional framework, and a strong operational capacity enabling efficient funding and sound risk management practices. Further, reliance by governments on captive sources of funding, whereby financial institutions are required to purchase and hold government securities, often at below market interest rates, is diminishing in many countries. A trend of countries developing a diversified investor base for their government securities is observed in the recent past.

According to the June 2009 Government of Kenya(GoK 2009) Publication on Medium Term Debt Practices (MTDP 2009), the key drivers to practices were a desire to minimise refinancing risk by lenthening the maturity profile of the domestic debt portfolio and to develop the domestic debt market further. The government also highlighted the need to minimise the degree of foreign exchange risk exposure associated with the external debt portfolio. It envisaged a significant reliance on domestic debt to meet the central government budget financing requirement. Government bonds are the backbone of most fixed-income securities markets in both developed and developing countries. They provide a benchmark yield curve and help establish the overall credit curve. Government bonds typically are backed by the "faith and credit" of the government and not by physical or financial assets.

The Bank for International Settlements conference in 2012 (BIS, 2012) addressed issues related to fiscal dominance, average public debt maturity, development of domestic bond markets, and the role of central bank in debt management and its implications for monetary policy for emerging markets. The findings highlighted that improvements in fiscal positions in many emerging markets (EMs) helped them to stabilise their economies during the recent global financial crisis. Montoro, et al., (2012) especially argued that the decline in fiscal deficits and public debt reduced the problem of fiscal dominance in EMs. An examination of these issues in Kenya reveal that fiscal dominance was not a problem by 2008 (Nyamongo, et al., 2010 and Baldini and Ribeiro, 2008). However, there is need to re-look at the issues given the rise in public debt and deficits in recent years.

Kenyan government has persistently failed to collect adequate resources to finance its budget, and continues to rely on external and domestic debt to finance its developmental activities (Putonoi & Mutuku, 2013). Kenya's public debt surged to 1.9 trillion according to the Quarterly Economic and Budgetary Review (October, 2013), with gross public debt increasing from Sh 1.633 trillion at the end of June 2012 to Sh 1.894 trillion by June 30, 2013, comprising of 44.5% external and 55.5% domestic debt. There have been concerns among policymakers that the rapid increase in public debt has the potential of eroding the country's sovereign rating, particularly if it is not supported by proportionate growth in the size of the economy (Nord, Harris, & Giugale, 2013).

1.1 Statement of the Problem

The creditworthiness and supply of Treasury securities have resulted in a highly liquid secondary market with high levels of trading activity and narrow bid-ask spreads. Treasuries trade in an extremely active repo market in which market participants can borrow securities and finance their positions. As Treasuries are considered to be free of default risk, yields on these securities represent risk-free rates of return. The performance of corporate bonds, for example, is often examined relative to that of Treasury securities, as the comparison allows one to separate yield changes due to changes in the risk-free rate from yield changes due to changes in credit risk. It is on this basis that Treasury securities are used extensively for pricing securities and hedging positions in the fixed income markets. Hudson et. al,(1998), the effeciency in the bond market is what every government requires in order to enhance economic growth and development. However, the bond market in Kenya has faced various challenges since its inception in 1980s (Njuguna, 2010). It has been dogged by the problem of bond fragmentation, low liquidity at the secondary market; high bid spreads at the primary market, little or no corporate issuances and unstable yield curve.

2.0 Theoretical Framework

2.1 Technical Theory

This theory holds that the historical price patterns are expected in the future. This price patterns can be sub dividend into Primary movements which are long term in nature. Trend that represent a period greater than one year, secondary movements which are seasonal variations in the share prices capturing periods covering several weeks and tertiary movements which refer to the daily changes in stock prices. The theory ignores the tertiary movements and uses the secondary movements to determine changes in primary movements. The ability to make commodity price forecasts is only the first step in the price decision making process. The second, and often more difficult step, is market timing. Since commodity futures markets are so highly leveraged (initial margin requirements are generally less than 10% of a contract's value), minor price moves can have a dramatic impact on trading performance. Therefore, the precise timing of entry and exit points is an indispensable aspect of any market commitment. Timing is everything when dealing in the commodities markets, and timing is almost purely technical in nature. This is where a practical application of charting principles becomes absolutely essential in the price forecasting and risk management process. There are three basic assumptions on which technical analysis is based: The technician believes that the price posted on the board of a commodity exchange at any given time is the intrinsic value of the commodity based upon the fundamental factors affecting the supply and demand of the product.

Therefore, if the fundamentals are already reflected in the price, market action (charts- price, volume, open interest) is all that is needed to be studied to forecast future price direction. Although not knowing the specifics of the fundamental news, the technician indirectly studies the fundamentals by studying the charts which reflect the fundamentals of the marketplace. Prices can move in one of three directions, up, down or sideways. Once a trend in any of these directions is in effect it usually will persist. The market trend is simply the direction of market prices, a concept which is absolutely essential to the success of technical analysis. Identifying trends is quite simple; a price chart will usually indicate the prevailing trend as characterized by a series of waves with obvious peaks and troughs. It is the direction of these peaks and troughs that constitutes the market trend. Technical analysis includes the psychology of the market place. Patterns of human behaviour have been identified and categorized for several hundred years and are repetitive in nature. The repetitive nature of the marketplace is illustrated by specific chart patterns which will indicate a continuation of or change in trend.

2.2 Random Walk Theory

This theory holds that prices of securities depend on factors that affect expected return and expected risk. Information on these factors is released to the market at different intervals and investors react differently to the information, security prices therefore follow a random walk trend and cannot therefore be predicted. It has the support of the efficient market hypothesis. Random walk theory gained popularity in 1973 when Burton Malkiel wrote "A Random Walk Down Wall Street", a book that is now regarded as an investment classic. Random walk is a stock market theory that states that the past movement or direction of the price of a stock or overall market cannot be used to predict its future movement. Originally examined by Maurice Kendall in 1953, the theory states that stock price fluctuations are independent of each other and have the same probability distribution, but that over a period of time, prices maintain an upward trend. In short, random walk says that stocks take a random and unpredictable path. The chance of a stock's future price going up is the same as it going down. A follower of random walk believes it is impossible to outperform the market without assuming additional risk. In his book, Malkiel preaches that both technical analysis and fundamental analysis are largely a waste of time and are still unproven in outperforming the markets. Malkiel constantly states that a long-term

buy-and-hold strategy is the best and that individuals should not attempt to time the markets. Attempts based on technical, fundamental, or any other analysis are futile. He backs this up with statistics showing that most mutual funds fail to beat benchmark averages like the S&P 500. While many still follow the preaching of Malkiel, others believe that the investing landscape is very different than it was when Malkiel wrote his book nearly 30 years ago. Today, everyone has easy and fast access to relevant news and stock quotes. Investing is no longer a game for the privileged. Random walk has never been a popular concept with those on Wall Street, probably because it condemns the concepts on which it is based such as analysis and stock picking.

3.0 Research Methodology

A research philosophy is a belief about the way in which data about a phenomenon should be gathered, analyzed and used. Two major research philosophies can be identified, namely positivist (sometimes called scientific) and interpretivism (anti-positivist) this is according to Galliers (1991). Positivists believe that reality is stable and can be observed and described from an objective viewpoint (Levin, 1988), without interfering with the phenomena being studied. The beginning of designing a research is the specification of research paradigm after defining the topic of concern. Research paradigm is a broad view or perspective of a study (Taylor *et al.*, 2006) or patterns of beliefs and practices that regulate inquiry within a discipline by providing lenses, frames and processes through which investigation is accomplished (Weaver and Olson, 2006). Dill and Romiszowski (1997) advanced the importance of research paradigm. This study was guided by quantitative positivism paradigm, since it is an inquiry based on testing of a theory, is composed of variables measured with numbers, and to be analyzed with statistical procedures, in order to determine whether the predictive generalizations of the theory held are true (Cresswell, 2003).

Research design is a plan and structure of investigation aimed at obtaining answers to research problem (Cooper & Schindler, 2008). The aim of a research design is to control the experimental, extraneous and error variables of a particular research problem being investigated. Burrell and Morgan (1979) reveal that research design can have the extremes of objectivism and subjectivism, that is, the 'sociology of regulation' and 'sociology of radical change'. This study used cross sectional survey design. According to Nachmias and Nachmias (2008), a survey design is most suitable in a research aimed at establishing a problem and determining its extent. The cross sectional approach helped to determine whether and to what degree a relationship exists between the quantifiable variables in this study and this concurred with past scholarly works of Mugenda and Mugenda (2003) and Cooper and Schindler (2003).

The study unit of analysis will be Kenya National treasury. The target populations will be 25 officials of CBK and Treasury department of Public Debt management. A sample design is a definite plan for obtaining a sample from a given population. For this study all the units of analysis and respondents in the sampling frame were included in the sample size. Therefore the sample size will be equal to target population; implying the adoption of census (saturated) sampling technique on the 25 officials of CBK and Treasury department of Public Debt management. The secondary data was obtained from CBK for the period between 2000 and 2022 period. Primary data was collected using questionnaires. The data collected was analyzed using descriptive and inferential statistics.

The regression model below was adopted;

$Y = \beta 0 + \beta_1 DM_{1i} + \varepsilon$ ……. (Equation 1)

Where:

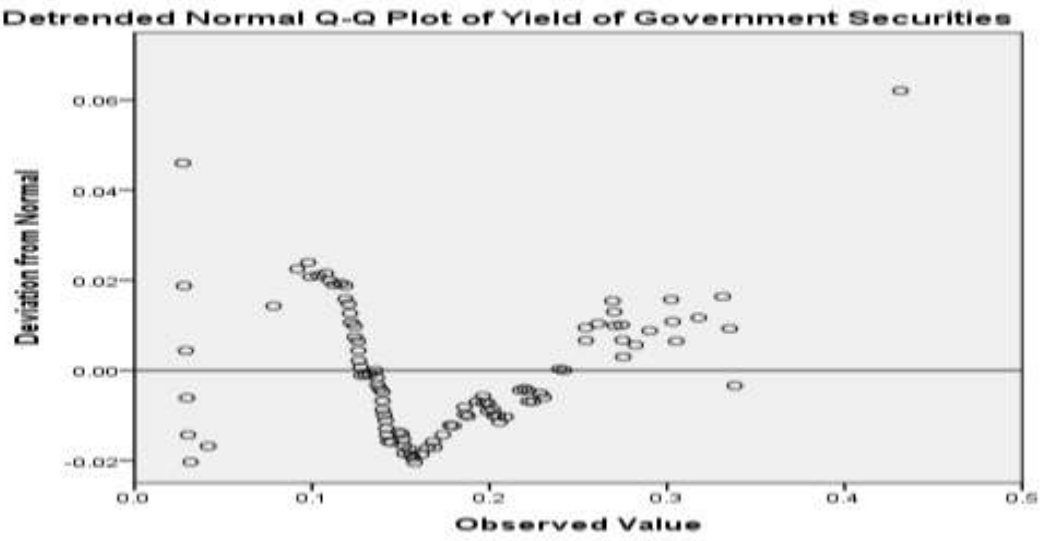
Y= Dependent Variable (performance of Government securities- level of turnover).

DM – Debt monitoring of securities

4.0 Results

Debt monitoring and performance of government securities in Kenya. The study established the influence of debt monitoring on the performance of Government Securities in Kenya. The results are presented as below

Fig. 1: Normality Distribution



The horizontal line at the origin represent the quantiles expected when the data is normal. The dots represent the magnitude and direction of deviations in the observed quantiles. When the data is approximately normally distributed the points are on or close to the horizontal line on the Q-Q plot. The stray points are far from the line of the expected values. This shows systemic deviations from normality as the shape of the detrended plot is almost parabolic (U shaped) indicating that these deviations are relatively large. Further, on skewness in the box plot there exist a strong and systemic deviations in the Q-Q plots and the two significant normality test ($p < .001$) there exist evidence of the variable weight.

Table 1: Correlations

			Debt Monitoring	Yield of Government Securities	Budget Deficits
Spearman's rho	Debt Monitoring	Correlation Coefficient	1.000	-.401**	-.757**
		Sig. (2-tailed)	.	.000	.000
	Yield of Government Securities	Correlation Coefficient	-.401**	1.000	.727**
		Sig. (2-tailed)	.000	.	.000
	Budget Deficits	Correlation Coefficient	-.757**	.727**	1.000
		Sig. (2-tailed)	.000	.000	.

**. Correlation is significant at the 0.01 level (2-tailed).

The results indicate that yield of government securities have a negative spearman's rho coefficient with debt monitoring (-.401, P= 0.00< .05) which is negative but significant association. The spearman's rho is a measure of strength of association between two variables. All the bivariate correlations analyses express the strength of association. A negative correlation coefficient indicate a negative relationship such that as the value of explanatory variable increases the value of the dependent variable decreases. Compared to the Pearson's correlation coefficient the spearman's correlation does not require continuous level data (interval or ratio), instead it uses ranks of assumptions about distributions of the two variables. This correlation does not assume that the variables are normally distributed. This implies that as the yield of government securities and budget deficits increase the explanatory variable debt monitoring decreases as its negative coefficient show the association.

Table 2: Coefficients

Model		Unstandardized Coefficients		Beta	t	Sig.
		B	Std. Error			
Equation 1	(Constant)	.355	.046		7.798	.000
	DM	-.068	.017	-.556	-4.003	.000
r = 0.375						
r^2 = 0.141						
Adjusted r^2 = .132						

The results indicate that a weak association exist between debt monitoring and performance of government securities as measured by yields of the securities (r = 0.375), further the debt monitoring can explain up to 14.1% of the variation in performance of government securities (r^2 = 0.141). This implies that 85.9% of the variation is explained by the other factors or determinant's not included in the model. But this variable can be relied on in the prediction of performance up to 13.2 %. (Adjusted r^2 = .132). in terms of the effect size debt monitoring can cause upto 55.6% (Standardized Beta = -.556) change in performance of government securities but negatively and the resultant effect is significant (p = .000< .05 tolerance level).

The regression model below was adopted;

$Y = \beta 0 + \beta_1 DM_{1i} + \varepsilon$ ……..…… *(Model 1a)*

Where:

Y= Dependent Variable (performance of Government securities- level of turnover).

DM – Debt monitoring of securities

The coefficient when substituted the model equation changed as below

$\boldsymbol{Y = .355 - .068 DM_{1i}}$ ……..…… *(Model 1b)*

This indicate that a unit change in debt monitoring causes a negative change of 0.068 units in government securities performance.

Table 3: ANOVA

Model		Sum Squares	ofdf	Mean Square	F	Sig.
Equation 1	Regression	.091	1	.091	16.026	.000
	Residual	.559	98	.006		
	Total	.650	99			

The result in table 3 above reveal that the variables used in the model are reliable and significant in the prediction of performance of government securities. Therefore the study reveal that all the inferential results based on the model are true as the assumptions are true and not violated by the data. Further the usefulness of this model adopted is objective as its accuracy on the prediction and explanation of the dependent variable by the predictor variable (debt monitoring) is significant ($F = 16.026$, p .000<.05).

5. Conclusion

The study concludes that debt monitoring has a negative but significant influence on the performance of government securities. Therefore national treasury need to focus on debt monitoring to improve on its securities performance in the financial markets.

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