REPUBLIC OF GHANA

MINISTRY OF FINANCE AND ECONOMIC PLANNING (MOFEP)

MEDIUM TERM DEBT MANAGEMENT STRATEGY

2011 - 2013

PREPARED BY

DEBT MANAGEMENT DIVISION (DMD)

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ACRONYMS

ADMD	-	AID/DEBT MANAGEMENT DIVISION
ATM	-	AVERAGE TIME MATURITY
ATR	-	AVERAGE TIME TO MATURITY
BOG	-	BANK OF GHANA
BUA	-	BANK UNIT OF ACCOUNTS
CAGD	-	CONTROLLER AND ACCOUNTANT GENERAL'S DEPARTMENT
DSA	-	DEBT SUSTAINABILITY ANALYSIS
FSD	-	FINANCIAL SECTOR DIVISION
GCB	-	GHANA COMMERCIAL BANK
GDP	-	GROSS DOMESTIC PRODUCT
HIPC	-	HIGHLY INDEBTED POOR COUNTRY
IMF	-	INTERNATIONAL MONETARY FUND
MDGs	-	MILLENNIUM DEVELOPMENT GOALS
MDRI	-	MULTILATERAL DEBT RELIEF INITIATIVE
MOFEP	-	MINISTRY OF FINANCE AND ECONOMIC PLANNING
MTDS	-	MEDUIM TERM DEBT STRATEGY
NPV	-	NET PRESENT VALUE
PAD	-	POLICY ANALYSIS DIVISION
PPP	-	PRIVATE PUBLIC PARTNERSHIP
SDR	-	SPECIAL DRAWING RIGHTS
TOR	-	TEMA OIL REFINERY

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I. Executive Summary

In recent times, continuous and persistent global financial turbulence has called for the formulation and implementation of a more credible and robust strategy in the area of debt management. To ensure broad base participation in such formulation, the DMD involved the BOG, CAGD and the PAD and FSD of the MOFEP. The IMF and the World Bank also provide considerable technical support in the exercise.

The analysis looked the cost-risk implications of a range of debt strategies. These strategies were assessed under a set of agreed assumptions on the macro and market environment and a set of market risk scenarios. The robustness of the analysis was also checked by analyzing the implications of a more pessimistic macro outlook on the preferred choice of strategy. The analysis focused on a core set of cost and risk indicators. In addition, the quantum of borrowing by instrument under each strategy was also reviewed to assess the feasibility of implementation. This also allowed the potential consequences for domestic debt market development to be considered.

Overall, a strategy with a strong bias towards external debt performs best in terms of cost and risk (S4 and S5), even where this involves substantial international market access. Given the strong fiscal position underlying the analysis and the short-term nature of the existing debt portfolio, the quantity of domestic debt falls under all strategies. This implies that more expensive domestic debt is effectively being refinanced by cheaper external debt, with a corresponding improvement in interest costs. This facilitates the consideration of strategies that envisage increasing amounts of long-term issuance in the domestic debt market, consistent with the one core debt management objective of developing the domestic debt market. The underlying improvements in GDP also help insulate the portfolio from a variety of market shocks, including a shock to exchange rates. Under a one standard deviation shock, debt / GDP increases by around 2.5 percent under all strategies to around 54.5 percent. A standard DSA shock of 30 percent depreciation, results in a higher debt ratios of about 60 percent.

Overall, the analysis shows that Strategy 2 is relatively easier to implement, though much require to be done to improve the domestic issuance calendar and broaden the investor base and make it more attractive to domestic investors.

The analysis also indicated that the strategy will be reviewed in early 2011 to reflect the following developments;

- The new baseline macroeconomic assumptions which will reflect the rebasing of the GDP data and the 2011 budget numbers.

- After conducting the new DSA using the new budget and GDP numbers. Mainly, the test will use the IMF-World Bank DSA framework to determine the debt sustainability implications of the portfolio and the borrowing space to be considered in the MTDS.

Finally, presentation of a formal Debt Strategy Paper provides an important platform for a constructive dialogue with key stakeholders from both internal and external sources including Parliament, the rating agencies, creditors and market participants and also shows an apparent indication for decisive plans to develop the domestic debt market.

The report also recommend that the analysis must be conducted on annual basis so as to constantly review the key assumptions underlying the analysis on both macro and market sides as well as the available sources of funding. In addition, progress made on the borrowing plan and the impact of new borrowing on the portfolio cost and risk indicators needs to be regularly reviewed to ensure that the strategy is being implemented effectively and outcomes are in line with expectations. Annually, the strategy will undergo a full and formal review and the annual debt report will also outline the experience in implementing the strategy.

In conclusion, the DMD must be resourced to sustain its effort to produce the DSA, MTDS, annual public debt report and quarterly debt bulletins and disseminate to all key stakeholders both internal and external.

II. Introduction

Recent world economic developments is continuously widening the uncertainties in global financial and credit portfolio management. The economic slowdown and its attendant effects on growth and liquidity cumulated into credit crunch and sovereign debt crisis have heightened the risk profile of many sovereign nations. These have not only raised the credit premiums but also called for concentrated efforts in ensuring prudency in lending and borrowing. The need for the design and implementation of a Medium Term Debt Management Strategy (MTDS) for Ghana could therefore not be overemphasized.

a) Objectives

Over years, core objectives for debt management have been to ensure that government financing needs are met at reasonable costs and subject to prudent level of risk. Another aim is to ensure that that public debt levels are maintained at sustainable levels over the medium to long term horizon. Further, developing a vibrant domestic debt market, by lengthening maturity profile of the instruments and diversifying the investor base has also been a key objective.

b) Scope and intended scope of coverage

The scope of covergae for public debt protfolio include all public and publicly guaranteed debt. It also include on lend and non-guaranteed contingent liabilities[1]. The scope of debt mangement also covers cross debt arrangements and IMF loans.

It is intended to extend the scope to coverage to guaranteed or non-guaranteed and all other financial transactions which has direct or indirect financial obligation on government. financial leasing agreements, any demand guarantee issued by or on behalf of Government, contracts and contract guarantees).

However, the strategy is preliminary pending rebasing of the national accounts and revision in 2011 budget numbers, especially, more accurate oil revenue figures.

[1] Non-guaranteed contingent liabilities debt includes debt owed by Parastatal or institutions of which government owns more than 50% shares

III. Review of Existing Management Strategies

Government continue to pursue an overall policy framework which aims at controlling the rate of growth of the public debt in relation to GDP with a target of public debt-to-GDP ratio of around 60% in the medium term horizon. Public debt management strategies basically focus on getting the right mix between the domestic and external portfolio so as to maintain optimal balance in financing and cost-risk trade-off.

Table.1 Shows the cost-risk trade-off between the external and domestic sources of financing:

Type of	Cost	Exchange Rate Risk	Refinancing Risk	Analysis/Comments	Recommendation
External Financing	LOWER	HIGHER	LOWER	Currently, external borrowing seems relatively cheaper but with more exchange rate exposure. However, this is partly mitigated where debt is contracted on an amortizing basis.	The target is to develop the domestic market to the stage where both sources will be competitively ranked.
Domestic Financing	HIGHER	NONE	HIGHER	Domestic debt is expensive, has higher refinancing risk given its relatively short maturity structure, but no direct exchange rate exposure.	

Public debt management strategy also pursued strategies to ensure the prudent borrowing and that all borrowing obtains the requisite regulatory approvals. As a result the Division undertook measures to streamline borrowing procedures.

a) External Financing and Debt

A preliminary Debt Sustainability Analysis (DSA) conducted early this year shows that Ghana has significant borrowing space and could therefore borrow to fill the financing gap needed to achieve the MDGs and accelerate infrastructure development and growth. The analysis however, recommended a restrain on commercial borrowing since it could trigger higher risk level and would not be supported by the current Extended Credit Facility (ECF) arrangement under the programme with the IMF and World Bank.

External financing strategies continue to pursue the following;

(i) concessional borrowing (with not less than 35% grant element),
(ii) limited recourse to commercial facilities for economically viable and self financing projects,
(iii) Innovative products that employ liability sharing between government and private sector (in the form of Public-Private Partnership-PPP) and;
(iv) Prudent level of creating contingent liabilities and on-lend facilities.

b) Domestic Financing and Debt Strategy

The strategy for domestic financing is to establish benchmarks Issues in long dated instruments and therefore lengthen the maturity profile of the portfolio. The goal of maintaining a well-functioning domestic debt market requires a borrowing strategy to be predictive and transparent with issuance.

Domestic debt management strategies have pursued the following measures among others;

- Lower borrowing costs.
- Contain the growth of the domestic debt.
- Lengthen the maturity profile of domestic debt to reduce the rollover/refinancing risk.
- Broaden the range of instruments offered to the domestic market.

Overall the debt management strategy focussed on reducing the eminent risk associated with the portfolio. When borrowing, some key considerations include; the source of loan (External or domestic), maturity structure (short, medium and long terms), currency combinations (US$, Euro or local currency) interest rate structure/type (Fixed floating or combination), management drawdown (bullet disbursement or staggered disbursement in accordance with project milestones) and managed repayment (amortising, bullet repayment or customised repayment profile).

In line with the above, following strategic benchmarks are being pursued and will continue in the medium term as a forward looking debt strategy:

c) Foreign Currency Risk Benchmarks

The debt portfolio seems to be dollarized with about 70% of loan repayment made in US Dollar. A strategic benchmark of **80%** exposure to the **US Dollar** was pursued. Meanwhile, significant portions of Ghana's international reserves and export receipts are in US Dollar.

d) Interest Rate Risk Benchmark

The current structure of interest rate does not suggest any eminent interest rate risk in the debt portfolio. The floating which could pose any danger is below our strategic benchmark of 20%. In the medium to long term horizon a strategic benchmark range of 15% to 20% will be pursued.

e) Re-Financing Risk (repayment profile)

The refinancing risk management is pursued to avoid bunching of debt service obligations and/or rollover risk, which may lead to liquidity crisis and/or excessive increase in cost of debt servicing. With this strategy, bullet repayment structure and accumulation of debt servicing in one period (especially the short dated domestic debt) will be smoothed to ensure that it is aligned with flows on revenue structure to avoid liquidity crisis and high re-financing cost. No quantitative debt servicing benchmark has been set but persistent positive net out flows (disbursement less interest and principal repayment) and the percentage of debt service maturing within 12 months will be checked.

Following the pursuit of the above strategies, we present resultant existing portfolio on public Debt in the following sections.

IV. Review of Existing Portfolio (2005- June 2010)

As at end-December 2005, Ghana's total public debt stood at US$ 8.4 billion, equivalent to 78 percent of GDP**.** The end 2005 public debt stood was made up of US$6.4 billion and US$2.0 billion for external and domestic respectively. The stock levels reduced significantly to US$5.3 billion, equivalent to 41 percent of GDP, principally as a result of debt forgiveness under the HIPC and MDRI initiatives. The debt relief has reduced external debt to about US$2.2 billion, representing about 41 percent of the total public and domestic debt about 59 percent. Since end of 2006, public debt portfolio has risen significantly with major transaction being the maiden Eurobond issue of US$0.75 billion in 2007. By the end of 2009, disbursed outstanding public debt recorded about US$9.3 billion, equivalent to about **62 percent of GDP**, with over US$3.0 billion undisbursed pipeline loans. Within that external debt represented about 51 percent while the share of domestic debt was 49 percent (Table 1). This shows a significant increase in domestic debt portfolio, reflecting relative improved market activities and participations.

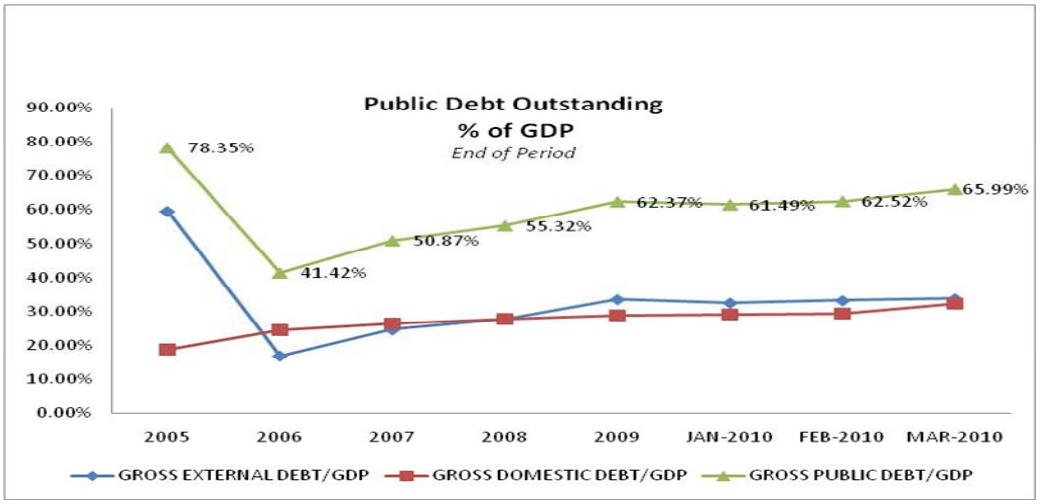
Table .2

External and Domestic Debt (US$ millions)

Stock outstanding	2005	2006	2007	2008	2009
Foreign Currency Debt	6,388	2,176	3,586	4,036	4,727
Domestic Debt	1,997	3,133	3,819	4,038	4,520
Total Public debt	8,345	5,310	7,405	8,073	9,247
Debt to GDP ratio (%)	78	41	51	55	62
Share of domestic debt (%)					

Source: MOFEP

Figure 1.



Interest rate structure of external debt is predominantly fixed; averaging about 89% 9% & 2% for fixed, variable and interest free respectively b/n 2006 to end Q1 2010. The high proportion of the fixed interest rate is as a result of high percentage share of multilateral, bilateral and the international bond debt which bear

fixed interest rates. The variable interest rates are mainly linked to the export credit facilities and commercial facilities whiles interest free facilities are mainly from the Chinese Government and a few bilateral creditors

a) External Debt Stock by Creditor Category

Multilateral debt takes largest percentage share of the external debt portfolio. Even after the HIPC and MDRI debt reliefs, the percentage shares are 49.57%, 33.40% and 17% for multilateral, bilateral and commercial debt respectively.

b) Currency Composition of External Debt

The transactional FX composition of the external debt portfolio is highly skewed to the US Dollars (USD), with 68% of the external debt transacted in US Dollars. By the end of 2009, Euro accounted for about 18 percent of transactions in external debt portfolio, and 3 percent and 6 for the Chinese Yuan and other currencies.[2]

Figure 2

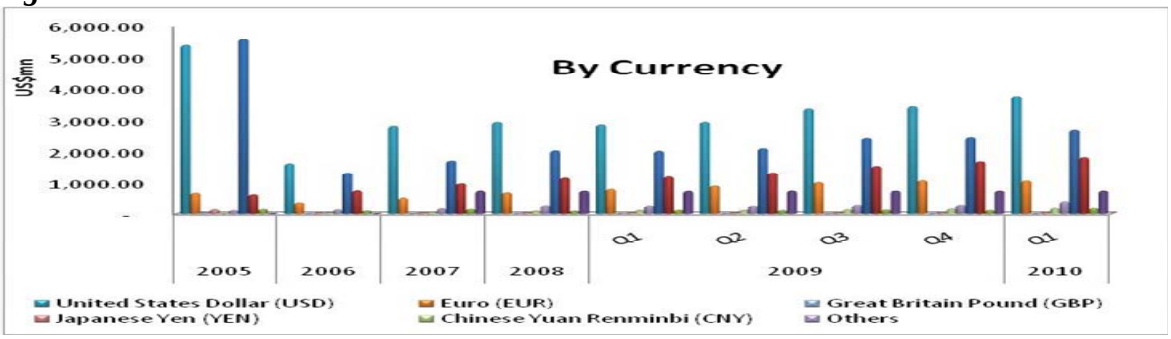
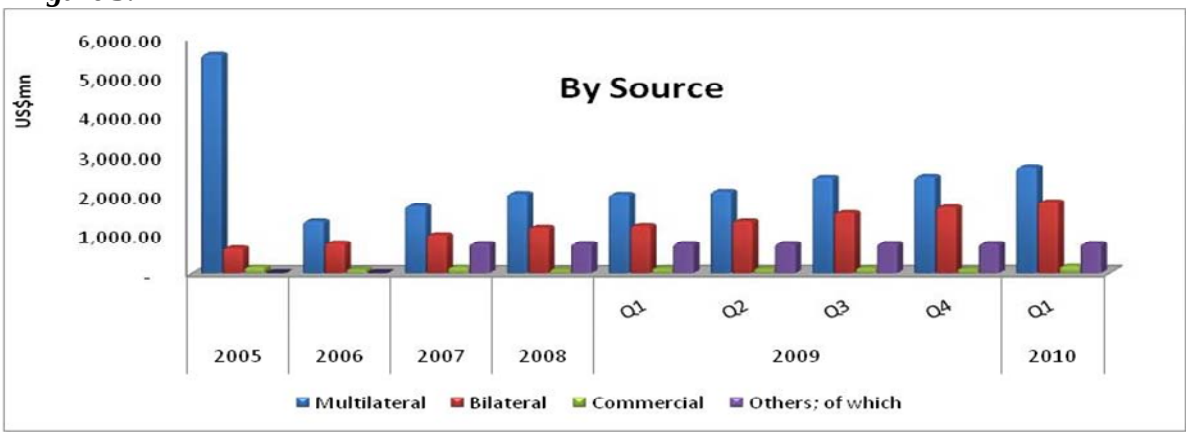


Figure 3.



V. Developments in Public Debt - 2010.

At the beginning of the year, Public debt stock stood at US$9.3 billion and by the end of June recorded about **US$10.8 billion**, equivalent of about **67 percent of GDP**. This is made up of 52 percent and 48 percent for external and domestic debt respectively. By that same period, pipeline loans (committed undisbursed)

[2] Explain SDR decomposed to its currency components.

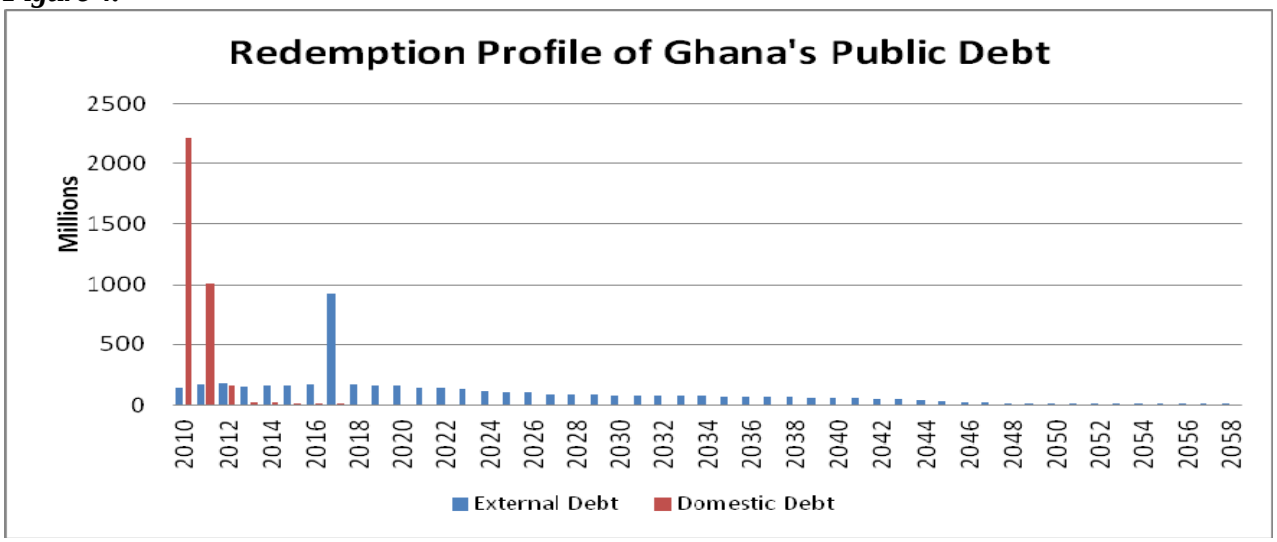
amounted to about US$4.5 billion. It is expected that about US$0.8 billion will be disbursed for the second half of the year and public debt will stand at about US$11.2 billion by end of 2010. Within the second half, it is also expected that depending on market conditions, the three and five year domestic debt instruments will be issued more frequently and utilised about GHS 300 million to reduce the short dated instruments (91 and 182 day bills). Public debt to GDP ratio is therefore expected to record about 69 percent of GDP by end of 2010.

VI. Cost and Risk Characteristics of the Existing Debt Portfolio

Currently, external debt accounts for about 52 percent of the total public and domestic debt of about 48 percent. The entire domestic debt portfolio is denominated in local currency, GHS, whiles the transactional forex composition of the external debt is dollarized, and the rest of the composition as described above. The current foreign currency composition does not pose any eminent danger since significant share of international reserves and exports receipts are dominated in US dollars.

Refinancing risk continues to pose significant risk especially for domestic debt portfolio. The average time to maturity (ATM) of the total debt portfolio is 8.0 years, with external and domestic debt portfolios recording 13.6 years and 1 year respectively. The redemption profile below indicates that there is significant rollover risk, with 24 percent of the debt stock maturing within the next 12 months. About 90 percent of the maturing debt service within the 12 months results from the high short dated instruments of the domestic debt. It is also evident from the graph that refinancing risk in the external portfolio is heavily concentrated in 2017 with the maturity of the existing international capital market bond of US$0.75billion.

Figure 4.

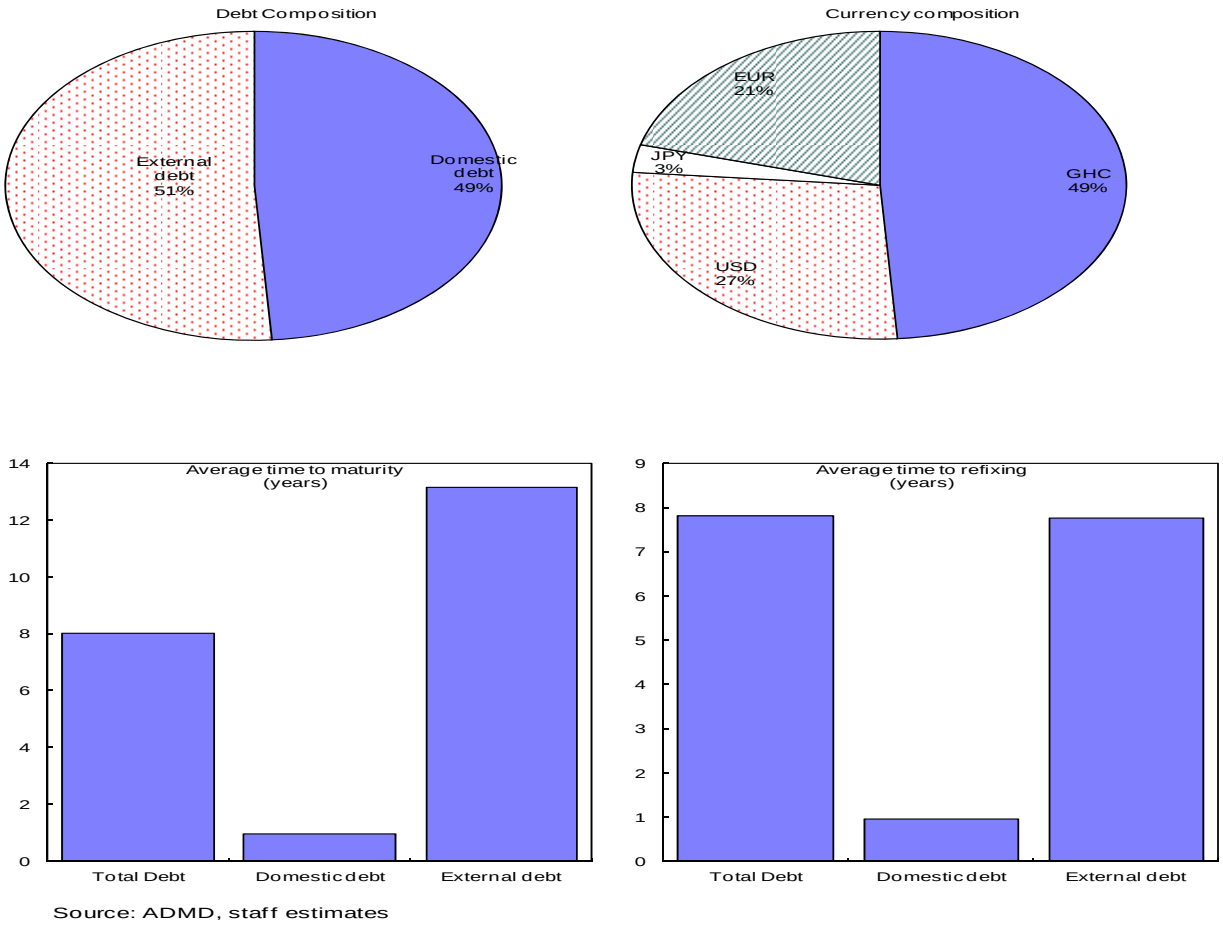


With cost considerations, interest cost of the public debtt portfolio has remained high of about 17 percent and 4.7 percent of government revenue and GDP respectively as at end of 2009. The high cost is manily as a result of expensive domestic debt, since over 80 percent of the external debt and 43 percent of the total pulic debt is on concessional basis. This reenforces the startegy to lenghten maturity profile of the domestic debt.

Similarly, refixing risk remains significant. Overall, while the average time to refixing is 7.8 years, this masks the fact that a large percentage – 33 percent - will be refixed in the next 12 months. This reflects

the combination of the proportion of the portfolio to be refinanced combined with the share of variable rate debt (6 percent) in the total debt portfolio.

Figure 5. Evolution and Composition of Total Public Debt



Source: ADMD, staff estimates

VII. Medium Term Financing Outlook

Potentially Ghana is likely to attain a middle income status in the medium term horizon. It is expected that the rebasing of the national accounts will raise the profile of the country into a middle income rank. The production of oil and therefore oil revenue flows will significantly improved the GDP.

In view of the above, coupled with the current global financial conditions, it is becoming increasingly difficult to secure concessional financing and have easy access to official sector semi-concessional lending. As a result, other structured financing schemes and the international capital markets remain the possible avenues to explore in the medium term.

On the otherhand, there has been renewed interest by foreign investors in the domestic market. Recent auctions of the three-year T-bond have seen robust demand, and there are plans to issue a five-year T-bond before the end of 2010. Specifically, in the medium term, much focus will be placed on the longer dated instrumentss ; of 5,7 and 10 years with the view of lenghteing maturities of the domestic debt.

VIII. Medium Term Debt Management Strategy – (2011-13)

a) Assumptions – Macro and Financing

(i) Financing assumptions

External Sources

For the purposes of this analysis, we assume the following external instruments are contracted as follows;

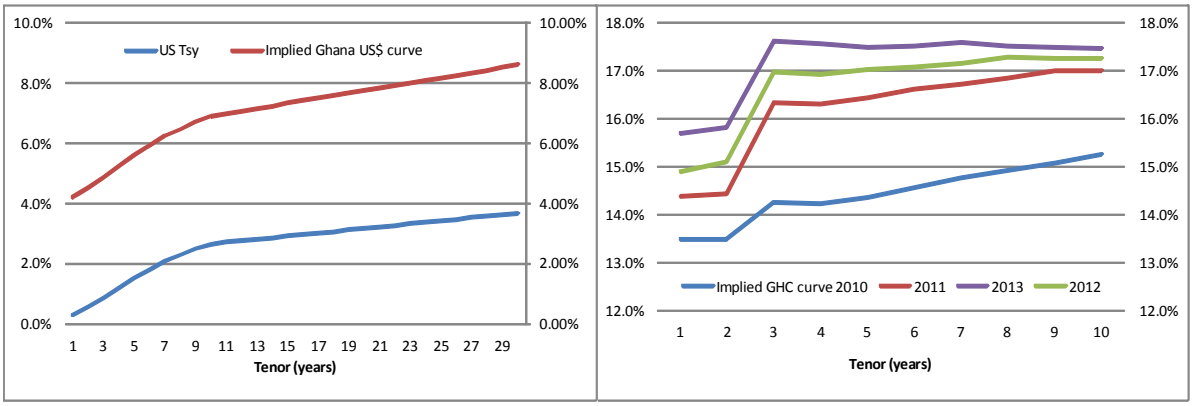
- Concessional external loans denominated in SDRs/BUA.
- Semi-concessional loans from official creditors or export credit agencies. These are assumed to be contracted on either fixed or floating rates, denominated in Euros, Yen and U.S. dollars.
- International capital market bonds issued in US dollars, with the implicit credit spread in line with current market conditions.

A description of the baseline exchange rate assumption would be useful.

Domestic Market Sources

As indicated above, Treasury bills and domestic government bonds will be issued across the curve, with potential maturities up to 10 years. The assumed pricing of new domestic borrowing is set relative to US Treasury forward rates with some adjustment to reflect credit, exchange rate and liquidity differentials. The applicable GHc curves are shown in Figure 5.

Figure 6. Assumed yield curves



(ii) Macroeconomic

The macroeconomic framework underpinning the MTDS was set in line with the projections set out in the 2010 Budget Statement (Table 3 below). The macroeconomic framework will be updated with the 2011 Budget figures and the revised GDP numbers obtained from the rebasing of the national accounts after which the MTDS analysis will also be revised.

Under this current macroeconomic scenario, real GDP growth is projected to rise from 6.5 percent in 2010 to 20 percent in 2011 owing to the start of oil production, and to average around 6 percent in 2012 and 2013. Transfers to the statutory funds in 2010 are expected to be current and settlement of existing arrears using the fiscal space created by oil revenues starting in 2011. It is also projected to reduce fiscal deficits from 8 percent of GDP in 2010 to 3–4 percent of GDP through 2011–13 in order to slow the growth of public debt and bring down the share of the budget devoted to debt service, which currently consumes 4.7 percent of GDP and 17 percent of government revenues.

Inflation is projected to remain a single digit by the end of 2010 and to remain in the middle single-digit range through 2011–13. Under this scenario, the primary balance moves from a small deficit to a small surplus. Consequently, the gross financing requirement will be heavily influenced by the interest payments and amortization due on the existing debt portfolio.

Table 3. Macroeconomic indicators (2010-2013)

	2010	2011	2012	2013
Government revenues including grants	31.0%	33.9%	32.3%	31.9%
Government revenue	25.9%	29.4%	29.3%	29.0%
Grants	5.1%	4.5%	3.0%	2.9%
Government expenditure	38.1%	35.8%	33.5%	34.8%
Government interest expenditure	5.1%	4.6%	3.8%	3.2%
Government non interest expenditure	33.0%	31.2%	29.7%	31.6%
Arrears clearance	0.9%	2.5%	2.1%	0.4%
Overall balance (deficit)	8.0%	4.4%	3.3%	3.3%
Primary deficit	2.9%	-0.2%	-0.5%	0.1%
Other below the line measures[1/]	1.7%			
Financing requirement	4.6%	-0.2%	-0.5%	0.1%
Nominal GDP Growth	19.3%	29.1%	14.4%	9.5%
GDP deflator	12.8%	9.0%	7.6%	4.2%
Real GDP Growth	6.5%	20.1%	6.8%	5.3%
CPI (period average)	10.5%	8.9%	6.6%	6.0%

1/ Assumed cost of dealing with TOR-related debt in 2010

(iii) Principal Risks to the Economy

The robustness of the analysis is based on the resilience of the macro fundamentals and typically the baseline assumptions for the interest, exchange rates and the fiscal stance. The overall budget balance assumption is also anchored on a very optimistic GDP growth, propelled by the strong fiscal stance which is enhanced by the revenue for oil production. In view of the main macro postulations above, the following may post risk to the macroeconomic fundamentals.

- The enhanced government revenue resulting from the oil proceeds may not materialized as envisaged in the baseline assumptions.
- Fiscal trends as observed in the four year election cycle leads to significant slippages, giving rise to excessive fiscal expansionary measures.
- This affects pricing of government securities since borrowing will increase and transmit into the monetary variables.
- The market therefore reassesses the credit quality of government and credit premium is revised upwards.
- Rising cost of living and interest rates also affects the value of the local currency and depreciates against the other international currencies.
- The reserves deplete as a result of trade and current account deficits and also foreign debt becomes more expensive.
- Further, the contingent liabilities could also pose additional fiscal risk.

For the purpose of this analysis, three typical shocks stemming from exchange rate, short term interest rates and a combination of these are considered. It is assumed that shocks materialize in 2011, and are sustained through the remainder of the simulation horizon[3]:

- Scenario 1: *Country-specific depreciation of the GHc.* Under this scenario the GHc depreciates in 2011 by one standard deviation against the Euro, Yen and US dollar.[4] This is a permanent shock.

- Scenario 2: *Parallel shift of all yield curves*. The cost of all market-based borrowing increases in all years by one standard deviation. [5]

- Scenario 3: *A combination of the two previous scenarios*. In this scenario, the Ghc depreciates by one standard deviation vis-à-vis other currencies, while all interest rates increase by one standard deviation at all maturities. This reflects the likelihood that interest rates would likely react to an external shock that affects the exchange rate.

(iv) Description of strategies

To ensure a rigorous analysis, five alternative financing strategies were designed to be assessed under this MTDS**.** The first strategy, **S1** is consistent with maintaining significant access to concessional sources or maintaining the current status quo. The four other strategies effectively consider the implications of substituting alternative sources of financing in view of the eminent constrains of obtaining concessional financing in the medium term as described above.

The strategies considered are to be implemented from 2011 to 2013; for 2010, the strategy will be on basis of actual for the first half of the year and projected for the other half of the year.

[3] Basically, this presumes that we consider the baseline macroeconomic outlook and financing assumptions highly uncertain. A more specific risk scenario could be considered on the basis of known future events, such as an election. The quantification of the shocks broadly reflects the historical standard deviation over the last 10 years.
[4] This shock corresponds to a 10 percent depreciation vis-à-vis each of the three currencies.
[5] This shock corresponds to a 6 percent increase in GHc interest rates, a 1 percent increase in Euro and U.S. dollar interest rates and a 20 basis point increase in Yen interest rates.

Table 6. Alternative Financing Strategies

	2010		S1		S2		S3		S4		S5	
			Balanced currency split				Domestic bias		External bias			
	Likely borrowing split		Bias to concessional & ST Dom		Switch to non-concessional, more-long-term domestic		More long-term domestic		Switch to more non-concessional external & More LT Dom		Split Concessional & non-concessional & more LT Dom	
	of external/ domestic	of total	of external/ domestic	of total	of external/ domestic	of total	of external/ domestic	of total	of external/ domestic	of total	of external/ domestic	of total
Domestic	100%	75%	100%	50%	100%	50%	100.0%	60%	100%	35%	100%	35%
1-year	35%	26%	50%	25%	30%	15%	30%	18%	30%	11%	30%	11%
3-year	60%	45%	30%	15%	30%	15%	30%	18%	30%	11%	30%	11%
5-year	5%	4%	10%	5%	20%	10%	20%	12%	20%	7%	20%	7%
7-year	0%	0%	5%	3%	10%	5%	10%	6%	10%	4%	10%	4%
10-year	0%	0%	5%	3%	10%	5%	10%	6%	10%	4%	10%	4%
External	100%	25%	100%	50%	100%	50%	100%	40%	100%	65%	100%	65%
Semi-concessional Fixed	55%	14%	10%	5%	13%	7%	15%	6%	18%	12%	13%	8%
Semi-concessional Float	5%	1%	10%	5%	12%	6%	15%	6%	17%	11%	12%	8%
Concessional	40%	10%	60%	30%	50%	25%	40%	16%	30%	20%	50%	33%
10-yr International bond	0%	0%	20%	10%	25%	13%	30%	12%	35%	23%	25%	16%

Description of the Strategies

- S1 represents a balanced currency split, with an optimistic assumption regarding the availability of concessional debt. Assumes that about **60%** of external debt will be concessional financing and about **50 %** of domestic borrowing will concentrate on the short term instruments.

- S2 also maintains the balanced currency split, but envisages a more constrained availability of concessional sources, with semi-concessional and commercial external being substituted. The domestic debt split reflects the core debt management objectives to extend maturities in the domestic market.

- S3 envisages the substitution of more domestic debt to compensate for the shortfall in concessional borrowing. The domestic borrowing accounts for 60% of total borrowing and concessional sources are reduced to 40% of external borrowing.

- S4 envisages a more aggressive switch to external debt. It however, constrained availability of concessional debt so overall more semi-concessional and commercial external debt and only 35% of domestic debt.

- S5 also envisages a more aggressive but an optimistic outlook for external concessional debt (similar to S1).

Intuitively, S1 and S5 should perform well in terms of cost given the assumed extent of concessional borrowing. However, in view of the likelihood dry up of concessional loans as Ghana attains a middle-income status, it is prudent to explore alternative options of funding and assess the cost and risk

implications. In contrast, given the relatively larger share of domestic long-term debt, S3 is likely to be a relatively costly strategy to adopt.

b) Methodology for Results Analysis

The strategies have been simulated in the MTDS model under the assumptions discussed above. Discussions focused on performance of each strategy under the cost indicators of interest/GDP and Debt/GDP. The interest GDP ratio is relevant as it indicates the amount of resources that is required to service the debt and not available for other uses while the Debt/GDP ratio is relevant in view of the strategic debt-GDP ceiling of 60 percent of GDP (key indicator of debt sustainability) and NPV of Debt is relevant given the significant share of concessional and semi-concessional debt. The resultant values of these ratios under the stress test scenario will also be analysed.[Refer to the Figures]

A number of other risk indicators are considered; such as Average Term to Maturity (ATM), Average Time to Refixing (ATR), which gives indication of rollover risk and interest rate risk. The redemption profile is also considered since it gives indication of cash flow profile or liquidity pressure on the budget.

Overall, it is envisaged that the methodology applied and the cost-risk indicators considered will assist in obtaining the desired portfolio mix.

Assuming that S1 and S5 are unlikely to be feasible, the outcome of this analysis suggests that S2 is the most appropriate strategy to follow. Nevertheless, concessional debt will be maximized to the extent possible but will as well aid the development of the domestic market.

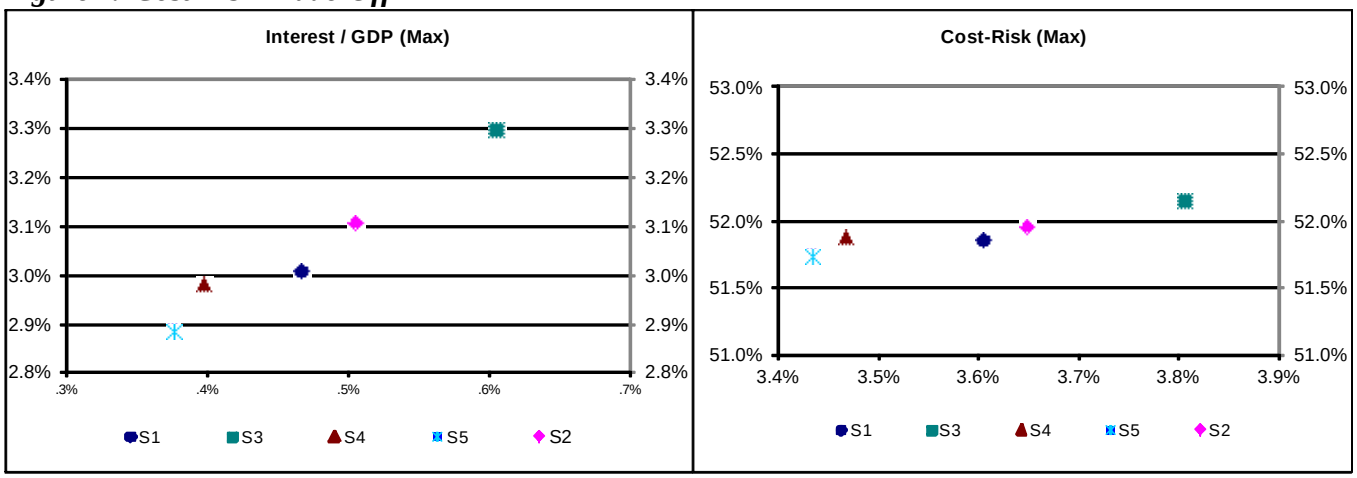
c) Analysis of Strategies

Strategy 1 combines high external concessional debt with **high short-term** domestic debt. From table 5 below, it is one of the least cost strategies in terms of the interest/GDP. Apart from S5, it produces a lower fiscal adjustment cost to maintain debt sustainability (Debt/GDP) than the other strategies. Under the stress test scenario, the strategy is highly vulnerable to the exchange rate shock. Further, apart from **S5**, **S1** has the highest ATM of **10.8 years** and highest percentage of refixing within 1 year. However, in the face of the increasing constrains in accessing concessional and other official sector facilities, Strategy 1, may be relatively difficult to implement.

Table 5. Summary of Cost/Risk Indicators

Interest / GDP (%)	**S1**	**S2**	**S3**	**S4**	**S5**
Baseline scenario	3.01%	3.11%	3.30%	2.98%	2.89%
Impact of stress scenario:					
Devaluation of exchange rate by one standard deviation	0.06%	0.06%	0.06%	0.06%	0.06%
Parallel shift in yield curve by one standard deviation	0.41%	0.45%	0.55%	0.34%	0.32%
Combination of both shocks	0.47%	0.50%	0.60%	0.40%	0.38%
Debt / GDP (%)	**S1**	**S2**	**S3**	**S4**	**S5**
Baseline scenario	51.86%	51.96%	52.16%	51.89%	51.74%
Impact of stress scenario:					
Devaluation of exchange rate by one standard deviation	2.55%	2.55%	2.54%	2.55%	2.55%
Parallel shift in yield curve by one standard deviation	1.05%	1.10%	1.26%	0.92%	0.89%
Combination of both shocks	3.60%	3.65%	3.80%	3.47%	3.43%

Figure 7. Cost-Risk Trade-Off



Strategy 2 appears to be in the middle between S1, S4, and S5 on one hand and S3 on the other. It split borrowing equally between external and domestic and is biased towards more non-concessional and long term domestic. Strategy 2 increases the share of long term domestic debt but because of the increased share of international bond in external borrowing, the cost and risk is slightly higher than S1. However, since the domestic debt portfolio is made up of mainly short average maturity, the strategy is vulnerable to interest rate shocks. Strategy 2 is relatively easier to implement, though much require to be done to improve the domestic issuance calendar and broaden the investor base and make it more attractive to domestic investors.

Strategy 3 is the most costly strategy, but is most consistent with the objective to develop the domestic market. It is also vulnerable to significant amounts of interest rate risk given the steepness of the Ghana yield curve, which compounds the effect of the interest rate shock in which the curve becomes even steeper. In the long run, as monetary credibility is established, inflationary expectations are anchored, and long-term savings increase, the implementation of Strategy 3 will become more feasible, as costs would be expected to decline.

Strategies 4 and 5 seem most desirable in term of cost-risk tradeoff. Strategy 4, reduces the domestic debt and bias on external with emphasis on non-concessional e.g. access to capital market. It has one of the lowest cost and risk tradeoff and relatively less vulnerable to interest rate shocks. However, by increasing the share of external debt to about 65 percent, Strategy 4 becomes more sensitive to exchange rate shocks.

Strategy 5 is the robust and seems to be the most preferred strategy. It is more concentrated on external for 65 percent of total borrowing and also bias on concessional borrowing and therefore gives the lowest interest/GDP and cost risk profile. Interest cost to GDP is about 11 basis points less than the macro target of 3 percent. The strategy is also vulnerable to shocks in the exchange rate. Again, strategy will not help the development of the domestic market as envisaged in the core debt management objectives and may be difficult to implement due the constrains in access to concessional financing in the medium term.

Overall, due to the positive outlook and the associated strong fiscal position, the debt indicators are generally encouraging under all the strategies. Further, though a clear ranking is observed, there is relatively little difference between the alternative strategies on the basis of these cost-risk indicators. The difference between the highest and lowest cost strategies is only around 0.5 percent in terms of both interest/GDP and debt/GDP. As analyzed above, S5 delivers the lowest cost and lowest risk and S3 has the highest cost. S4 and S1 perform similarly in terms of cost, but, given the higher amount of official sector fixed rate debt, S4 is marginally less risky. S2 indicates the marginal cost of extending maturities in the domestic market.

The choice for any strategy is further assessed by applying the following range of indicators. (Table 6).

Table 6

Other key indicators

		Simulation Horizon (2010 - 2013)				
	2009	**S1**	**S2**	**S3**	**S4**	**S5**
Cost indicators (average over simulation)						
Average interest rate	7.8%	6.9%	7.0%	7.2%	6.8%	6.8%
Interest / Revenues	17.1%	10.1%	10.3%	10.6%	10.0%	9.8%
Risk indicators (end simulation horizon)						
% DX in debt portfolio	48%	25%	27%	31%	21%	21%
ATM (years)	7.6	10.8	10.4	9.5	10.3	11.2
% of debt refixing within 12 months	41%	21%	19%	20%	20%	18%
% of debt refinancing within 12 months	25%	10%	7%	9%	6%	6%
% of DX debt refinancing within 12 months	50%	50%	44%	42%	48%	48%
Implied net borrowing (% of GDP) (average over simulation)						
Net domestic borrowing	4.7%	-2.1%	-1.7%	-0.9%	-2.9%	-3.0%
Net external borrowing	4.3%	5.2%	4.9%	4.2%	6.0%	6.0%

In analyzing the strategies other cost indicators such as the implied average interest rate, interest /revenue ratio and other risk indicators such as the Average Time to Maturity (ATM) and percentage of debt refixing within 12 months were considered in conjunction with the overall core objectives of debt management.

Again, the difference in performance under a range of other cost indicators is marginal, especially as all indicators improve relative to the 2009 position. The other risk indicators measured by the ATM, recorded similar results, with S4 and S5 being the best strategy followed closely by S2. However, with the exception of S3, S2 has a higher percentage of domestic debt in the portfolio by the end of 2012. Strategy 2 therefore seems to support the core objective of developing a vibrant domestic market. Further, the ATM under S2 is 10.4 years better than S3 of 9.5 years and S4 of 10.3 years.

d) Implied Amount under each Strategy

Currently, it may be difficult to implement the domestic market activities as envisaged in S3 and is also prudent risk management to mitigate the eminent refinancing risk associated with S4 and S5. Strategy 2 seems to play a middle role between S4 and S5 which has strong presence on international capital market and S3 which also pose robust domestic market activities.

Table 7.

Implied gross borrowing (annual average)	2010 (assumed)	S1	S2	S3	S4	S5
Foreign borrowing (GHC mn)	**1,555**	**2,274**	**2,167**	**1,883**	**2,273**	**2,784**
Official sector borrowing	1,555	1,920	1,753	1,469	1,858	2,055
International capital market securities		354	414	415	729	516
Domestic borrowing (GHC mn)	**4,666**	**1,769**	**1,668**	**2,064**	**1,121**	**1,113**
Tbills / 1-year bonds	1,633	885	500	620	336	334
Medium-term bonds (3-year)	2,800	531	500	620	336	334
Long-term bonds (5-10 years)	233	354	669	825	448	445
Total	**6,221**	**4,043**	**3,835**	**2,503**	**2,610**	**3,117**
Implied net borrowing (annual average)						
Foreign borrowing (GHC mn)	**1,345**	**1,984**	**1,877**	**1,593**	**1,982**	**2,178**
Official sector borrowing	1,345	1,630	1,463	1,179	1,568	1,765
International capital market securities	-	354	414	415	729	516
Domestic borrowing (GHC mn)	**1,497**	**(796)**	**(671)**	**(343)**	**(1,123)**	**(1,130)**
Change in stock of Tbills / 1-year bonds	(1,536)	(215)	(374)	(322)	(443)	(444)
Medium-term bonds (3-year)	2,800	(402)	(434)	(313)	(597)	(599)
Long-term bonds (5-10 years)	233	354	669	825	448	445
Non-marketable	-	(532)	(532)	(532)	(532)	(532)
Total	**2,842**	**1,188**	**1,206**	**1,250**	**858**	**1,048**

e) Selection of Strategy

Considering the above analysis, Strategy 2 seems feasibly and most preferred in terms of the core objectives of the debt management since it has a more balanced currency split and takes a middle position in cost-risk tradeoff. Strategy 2 implies maintaining a reasonable stream of new issuance in the domestic market and is more in line with the core objective to extend maturities in the domestic market than S1. It also presumes a more constrained access to concessional borrowing so may be more realistic in its outlook than S1 and S5, which are the most competing strategies wit S2. The marginal cost of this strategy relative to S5 the cheapest is only 0.2 percent of GDP under the baseline scenario. Similarly, it is only marginally more risky than S5. **S2** is therefore the adopted financing strategy for this analysis.

The strategy is preliminary pending rebasing of the national accounts and revision in 2011 budget numbers, especially, more accurate oil revenue figures.

f) Stress Test

In view of the potential risks in the macroeconomic framework identified above, an alternative macroeconomic scenario-stress test is considered and assessed its impact on the alternative strategies. Under this macroeconomic scenario, it is assumed that oil revenues are not as strong as anticipated - oil prices decline to $55 per barrel relative to the $70 assumed in the baseline scenario. It is further assumed that oil production will reduce to about 80,000 barrels, relative to the 94,000 barrels in the baseline scenario, as a result, GDP is expected to be on the average about GHc 1.7 billion lower than in the baseline. Consequently, the financing requirement increases by an average of over GHc 600 million a year. Additionally, it is assumed that other contingent liabilities may crystallize, for instance the remaining TOR debt to GCB. It is also assumed that about GHc 500 million of such contingent liability will crystallize in the medium term. Again, it is anticipated that, for any possibly fiscal slippages, additional amounts of GHc700 million and GHc 800 could be expended in 2011 and 2012 respectively. Overall, with a weaker macroeconomic outlook signaling dire fiscal strait, sovereign credit quality would worsen and attractive an increased premium of about 200 basis points. The alternative macro stress test is simulated with the alternative financing strategy and the pricing assumptions to assess the impact

The results of the strategies under this alternative macroeconomic scenario is set out in Appendix I. Overall, while the absolute levels of key indicators change, the relative ranking does not. Again, **S2** is only marginally more costly and risky than S5 indicating that the strategy choice **(S2)** would be relatively robust to a more pessimistic macroeconomic outlook.

g) Implementing the MTDS

(i) Developing the Associated Annual Borrowing Plan

The borrowing composition assumed in the MTDS analysis provides the basis for determining the annual borrowing plan to accompany the selected strategy to meet the financing requirement for the fiscal year.

The table below set out proposed borrowing plan for both external and domestic debt. It does not only set out the planed borrowing amounts but also frequency of issuance and purposes of borrowing.

The domestic borrowing plan would be translated into a potential auction calendar for Treasury bonds. The auction calendar is derived by determining the required number of auctions and the typical size of an auction. This is carefully structured so that issuance calendar is not too crowded and do not compete with each other. The planning of the calendar also takes into account government cash position and budget outturns in the fiscal year. The plan also envisages that the long dated instruments will be used for specific projects.

External borrowing plan anticipates two utilization options; project and budget support (program) and is based on commitments. Budget support loans are mainly under the concessional loans under the Multi-Donor Budget Support (MDBS) arrangements. The semi-concessional and international capital market facilities are mainly project tied. The plan set out the possible timeframe to access the international capital market.

Table 8. Borrowing Plan for FY 2011 (GH¢ millions)

Domestic/External	Instruments	% of subtotal	% of total	GH¢ millions	Frequency	Purpose/ Use of Funds
Total borrowing			**100%**	**4,562**		
Domestic		**100%**	**50%**	**2,281**		
	1-year	30%	15%	684	Weekly	Support Gov't Liquidity Requirement
	3-year	30%	15%	684	Bi-monthly	Gov't Liquidity & Projects
	5-year	20%	10%	456	Quarterly	Projects
	7-year	10%	5%	228	Semi-annually	Projects
	10-year	10%	5%	228	Semi-annually	Projects
External		**100%**	**50%**	**2,281**		
	Semi-concessional Fixed	13%	7%	296	Varied	Projects
	Semi-concessional Float	11%	6%	251	Varied	Projects
	Concessional	50%	25%	1,140	Varied	Budget Support/Progammes
	10-yr ICM	26%	13%	593	Once	Projects

(ii) Other issues to facilitate the implementation of the MTDS.

For effective implementation of the MTDS, there is the need to develop vibrant risk management tools which should include other provisions and regulations to allow market-based liability management operations such as bond buybacks, switches, exchanges and other derivative instruments.

There is also the need for active investor-relations and market consultation to get up to date information on the market. This will help determine a prior the investor appetite for the various instruments before it is done.

The strategy also addresses any possible slippages in terms of significant changes to the broad parameters of the MTDS. The table below set out the possible adjustments that could be effected in case of significant changes in the parameters.

Table 9. Possible Switches

External		Shortfall / Excess	Adjustments
	Semi-Concessional	Shortfall / Excess	Available Concessional
	Concessional	Shortfall / Excess	Semi-Concessional
	ICM	Shortfall / Excess	Semi-Concessional
Domestic	Instrument / Bond		
	1 year	Shortfall / Excess	Any over subcribe Instrument / Term Loan
	3 Year	Shortfall / Excess	Any over subcribe Instrument / Term Loan
	5 Year	Shortfall / Excess	Any over subcribe Instrument / Term Loan
	7 Year	Shortfall / Excess	Any over subcribe Instrument / Term Loan
	10 Years	Shortfall / Excess	Any over subcribe Instrument / Term Loan
	Term Loans		

There is also the need for constant monitoring and review of performance and progress made on the MTDS. The quarterly public debt public report and the annual review will be used for this purpose. The quarterly report will include a backward looking review of performance of the previous quarter, which will reveal possible risks and recommend measures to mitigate in the subsequent quarter.

Since the MTDS is anchored on a macro framework, there will be regular monitoring of macro performance. Developments in the macroeconomic situations to a large extent drive the domestic market conditions and especially form investors' perception of risk for government papers/instruments.

Though the MTDS is a medium term report, it will be updated annually. If there are significant and sustained deviations in the outturns relative to the targets and assumptions in the MTDS, the report will be reviewed and revised accordingly.

Above all, there is the need to review the legal and institutional framework to ensure contemporary debt management practices in Ghana. Appropriate governing laws and guidelines must be set and also

strengthen the institutions or divisions involved in debt management especially the Debt Management Division.

Finally, it is envisaged the annual revision of the MTDS would be subjected to the appropriate regulatory approvals or will accompany the annual budget statement to Parliament as a supporting document.

IX. Conclusion

By the end of the implementation period; the MTDS is expected to achieve the following;

(i) Domestic market be smoothen and well functioning;

(ii) Domestic market to serve as potential alternative sources of funding (diversify sources).

(iii) Improve market liquidity and therefore cover credit premium.

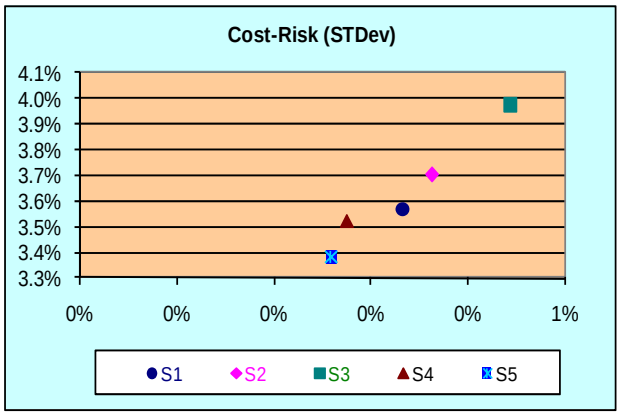
(iv) Adopt a Financing Strategy that will minimize the portfolio risk.

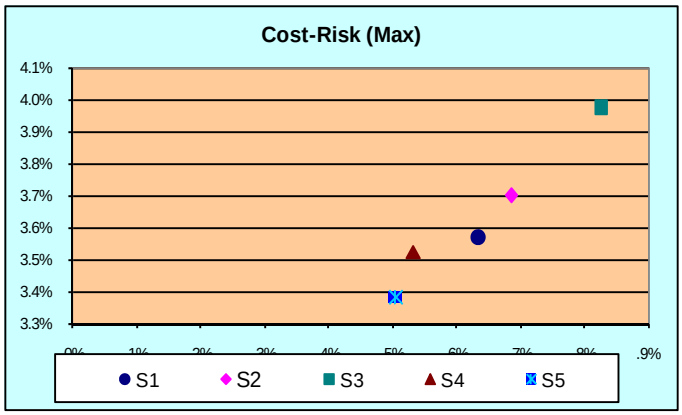
(v) Attain prudency in public debt management; Streamline issuance (Calendar).

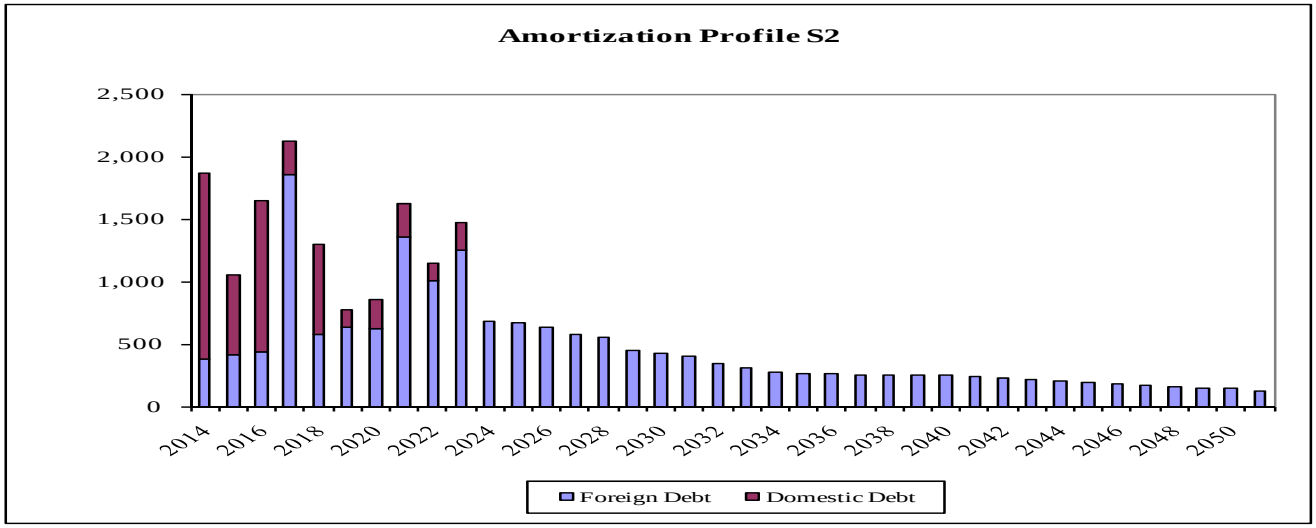
Overall, the public debt portfolio is maintained at sustainable levels and less risky than it is currently.

X. Appendix I

Results Analysis of Macro Stress Test







		Simulation Horizon (2010 - 2013)				
	2009	S1	S2	S3	S4	S5
Cost indicators (average over simulation)						
Average interest rate	7.8%	7.0%	7.1%	7.4%	6.9%	6.9%
Interest / Revenues	17.1%	11.3%	11.5%	12.0%	11.2%	10.9%
Risk indicators (end simulation horizon)						
% DX in debt portfolio	48%	26%	28%	33%	21%	21%
ATM (years)	7.6	11.0	10.5	9.5	10.3	11.3
% of debt refixing within 12 months	41%	21%	19%	20%	20%	18%
% of debt refinancing within 12 months	25%	10%	8%	9%	6%	6%
% of DX debt refinancing within 12 months	48%	48%	41%	39%	45%	45%
Implied net borrowing (% of GDP) (average over simulation)						
Net domestic borrowing	4.7%	-1.4%	-0.9%	0.2%	-2.5%	-2.5%
Net external borrowing	4.3%	6.7%	6.3%	1.7%	7.8%	7.8%

Feasibility assessment

Implied gross borrowing (annual average)	**S1**	**S2**	**S3**	**S4**	**S5**
Foreign borrowing (GHC mn)	**2,733**	**2,587**	**2,234**	**2,715**	**3,347**
Official sector borrowing (GHC mn)	2,287	2,069	1,716	2,193	2,438
International capital market securities (GHC mn)	446	518	518	522	910
Domestic borrowing (GHC mn)	**2,228**	**2,089**	**2,593**	**1,399**	**1,388**
Tbills / 1-year bonds	1,114	626	779	420	416
Medium-term bonds	668	626	779	420	416
Long-term bonds	446	837	1,036	559	555
Total	**4,961**	**4,676**	**3,013**	**3,135**	**3,764**
Implied net borrowing (annual average)					
Foreign borrowing (GHC mn)	**2,443**	**2,297**	**1,944**	**2,422**	**2,666**
Official sector borrowing (GHC mn)	1,997	1,779	1,426	1,903	2,148
International capital market securities (GHC mn)	446	518	518	518	518
Domestic borrowing (GHC mn)	**3**	**172**	**583**	**(388)**	**(397)**
Change in stock of Tbills / 1-year bonds	(178)	(358)	(298)	(434)	(436)
Medium-term bonds	(265)	(308)	(155)	(513)	(517)
Long-term bonds	446	837	1,036	559	555
Non-marketable	(532)	(532)	(532)	(532)	(532)
Total	**2,445**	**2,469**	**2,527**	**2,034**	**2,269**