European Journal of Business and Management
ISSN 2222-1905 (Paper) ISSN 2222-2839 (Online)
Vol.6, No.27, 2014

The Impact of Policy Measures on Ethiopian Private Banks Performance: the Case of Government Bill Purchase

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Abstract
The major theme of the study is to assess the effect of sector specific policy measures on bank performance. The study has taken one of the top policy issues; the requirement to purchase government securities, and analyzed its impact on profitability measure, ROA. It has used panel data from 2007-2013 of eight middle size private banks with a total of 56 observations. The study finds that exposure to government bills has negative significant relationship with performance. Nevertheless, the magnitude is not severe. Moreover, the pre and post policy periods comparison revealed a relatively better profitability record for private banks during times of policy restrictions. Therefore, the bill seems contributed positively to performance via moping the excess liquidity holding of banks or to invest excess funds in earning government securities than the customary practice of holding liquid asset in zero earning accounts at the NBE. In addition, it instigated banks to some extent provide focus on other fee generating sources. The significant relation of the NIM with performance revealed that banks responded to the policy through adjusting their loan prices in a way to compensate for the opportunity lost. Consequently, the Banks cost related to bill purchase to some extent seems covered by borrowers but the increase in rate has not resulted in materialized high default risk. In general, the result of the study shows that the effect of the policy measure is mitigated by the excess liquidity standing of banks during the policy formulation, the likely possibility to expand to other fee generating services, stable liability prices and banks discretion to adjust their asset prices. Nevertheless, the decline trend in the share of loans from the total asset could have negative effect on the long run which in fact to some extent will be moderated by the maturity of part (but significant sum) of the bills in few years time. The study focused on the historical impact of the bill measure; hence its long run effect requires further exploration.
Keywords: Policy Government Bill Ethiopian Bank Performance

Introduction

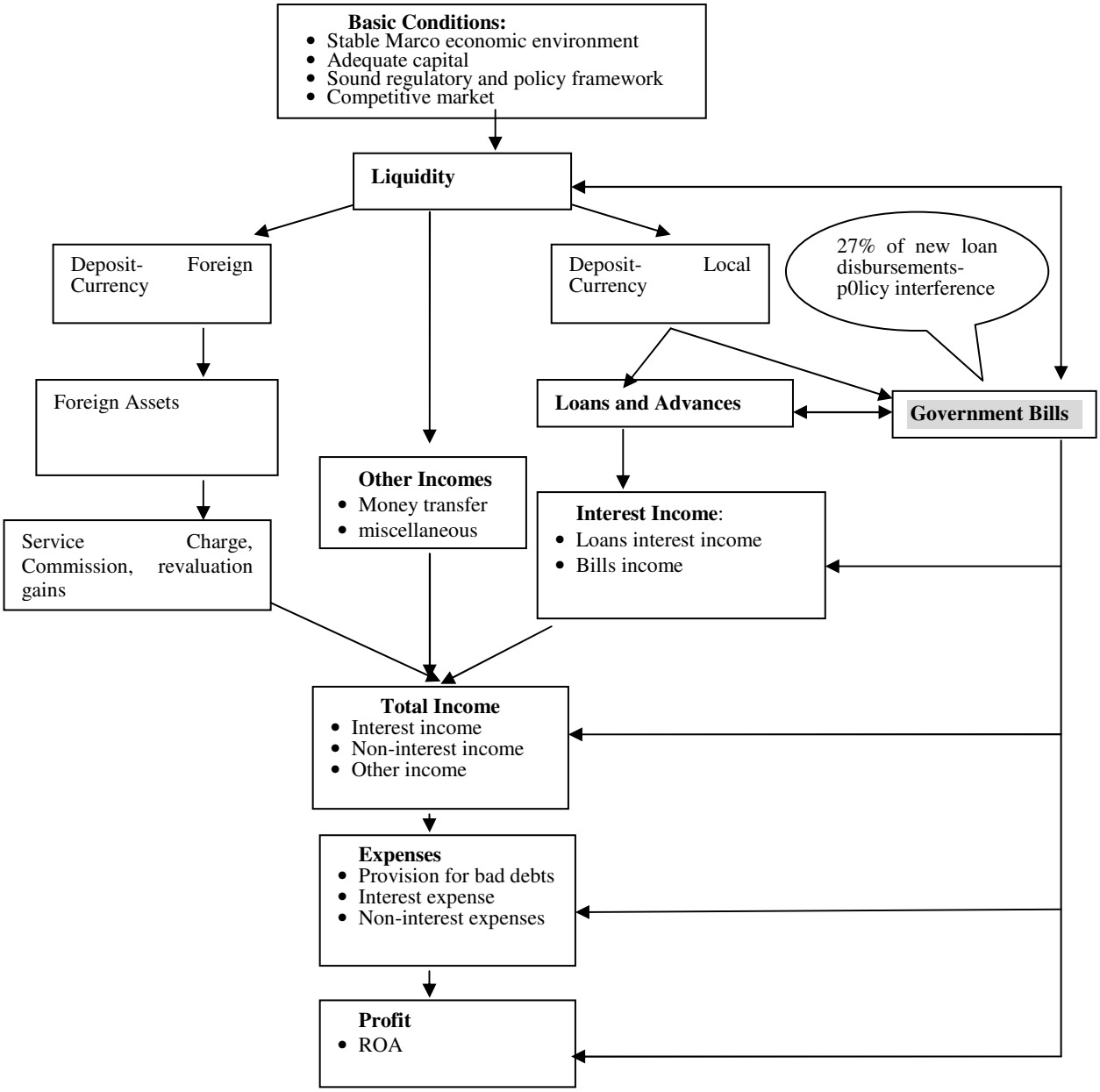
The overall development strategy of Ethiopia which is guided by the Agriculture Development Led Industrialization (ADLI) is seen in light of ending poverty. To this end, the Government has designed and prepared a five-year Growth and Transformation Plan (GTP 2010/11-2014/15). The pillars of this strategy include: sustaining rapid and equitable economic growth, maintaining agriculture as major source of economic growth, creating conditions for the industry to play key role in the economy, enhancing expansion and quality of infrastructure development; enhancing expansion and quality of social development; etc (Growth and Transformation Plan). For the realization of these objectives and mainly to finance massive projects like the construction of the millennium dam, the government planned to acquire financial resources both from budgeted sources and from off-budgeted financings. Budgeted sources are those sources originated from domestic revenues (revenues mobilized from taxes and non-tax sources) and external sources (i.e. grants). On the other, Off-budget financing is aimed at financing the major portion of infrastructure and industrial development programs. The financing arrangements for these programs is intended 30 percent from own sources of development enterprise and 70 percent from domestic and external borrowings. Domestic borrowings is being effected by applying different monetary policy instruments whereas, the external borrowing will be undertaken mainly from the national borrowing policy of the country. For fulfillment of these strategic pillars set under the GTP, the roles and a greater extent participation of the private sector, non-government and the public at large are considered as important facilitators. With such framework ,the National Bank of Ethiopia(NBE), since April 01, 2011, has issued NBE bills purchase Directives, subsequent to a lifting of lending caps which has been applied for about two consecutive years (from year 2009-2011). It mainly pertains to purchase of Bonds(the great renaissance dam saving bond) by commercial banks from NBE (which later transferred to the Development Bank of Ethiopia) equivalent to 27% of new loan disbursement issued at a concessionary rate of three-percent (Directive No. MFA/NBEBILLS/001/2011). This Directive is confronted by private banks as it assumed to bring formidable challenges on the activity of commercial banks, particular to privately owned banks, through negatively affecting the expansion in the loan book and hence reducing earning thereof. In addition, its retroactive application and subsequent expansion of the exposure to bills is claimed to create tight liquidity position. Therefore, assessment of its impact is becoming a paramount importance. The study tries to measure the effect of such policy framework on the profitability of selected private commercial banks using panel data

from 2007-2013.

Literature Review and Conceptual Framework

Various empirical studies on banks market over different time horizons, pointed out that Central Bank's adopted monetary policy of a country has implications on bank performance. Ikhide and Alawode (2001) indicated that central bank's measures such as setting ceilings on interest rates and credit expansion, selective allocation of credit, and high reserve requirements could result in financial repression which distorts the well functioning of domestic financial markets. The paper using the McKinnon and Shaw argument pointed out that such misguided policies have damaged the economies of many developing countries by reducing savings and encouraging investment in inefficient and unproductive activities.. Aryeetey et al (1997) elucidate that excessive intervention by government as manifested by control of interest on loans and deposits rates tend to raise the demand for and depress the supply of funds. This creates unsatisfied demand for investible funds which forces financial intermediaries to ration credit by means other than the interest rate while an informal market develops at uncontrolled rates. The other feature of financial repression in the literatures is large differential between lending and deposit interest rates and implicit taxation (Aryeetey, 1997), (Chirwa, 2001). Seck and El Nil (1993) argued that the high spread between lending and deposit rates can be viewed as an implicit tax through high reserve requirements on the banking sector by the monetary authorities. There is a tendency for the monetary authorities to set high reserve requirements in less developed countries. For instance, the reserve requirement for Ghana in the early 1980s was as high as 80 percent (Aryeetey, 1997).Moreover, governments often used banking institution as a source of implicit taxation by imposing high reserve requirement and financing operating losses of parastatals, Collier and Gunnings 1991 cited in (Aryeetey, 1997). Hence, the proponents of financial repression argues that less involvement of the government in the financial sector can support economic growth (McKinnon, 1973; Shaw, 1973) The paper further argued that financial sector of the economy is important in economic development as it supports in the breakaway from repetition repressed economic performance to accelerated economic growth. Thus, studies seem to concentrate on the link between monetary policy measures and economic growth or financial liberalization and economic performance. However, studies done on the effect of specific monetary measures with bank performance, risk management are not widely accessed by this study. Therefore, a framework based on the traditional intermediation activities of banks is set so as to contribute for the literature and serve as concept for the model. The conceptual framework considers liquidity as an initial input and engine to smooth up both the intermediation and other fee generating services like income from international banking operation. The policy impact is revealed on the intermediation activities which appear a core earning source in the form of interest income. In case of policy involvements like bill purchase banks might have a choice to respond through restricting their lending business and diverting their attention to other fee generating sources. The other possible option could also be heading with the intermediation business but in a way to compensate for the opportunity lost related to policy effect. The main theme of banks in this regard is to maintain the spread or the profit rate from lending constant or closer to the level before the policy interference in the intermediation business. In such a case the cost of the policy is by large is transferred to the customers and mainly of the borrowers. As the floor price for saving and fixed time deposit is set by the central bank, banks don't have the tact to lower their cost of fund from the level at the pre-policy measure period. The third alternative option could be banks to consider the policy measure as an external factor that cannot be addressed through internally driven strategies. This means banks neglect the policy factor and moving with the pre-policy period strategies without doing nothing after the policy is effected. Whichever strategy is selected by the banks the main intent is to maximize the profitability records without compromising the growth motive of banks. Hence, the framework has considered profit measure as a dependent variable which could be directly affected by the bill purchase requirement.

Conceptual Framework



Methodology

Bank selection and data used

The major theme of the study is to assess the effect of sector specific policy measures on bank performance. The study has taken one of the top policy issues; the requirement to purchase government securities, and analyzed its impact on profitability measure, ROA. It has used panel data from 2007-2013 of eight middle size private banks with a total of 56 observations.

Model Specification and Variable Setting

A multiple linear model that link the relationship between policy measures related to banking sector with banks performance can be stated as:

$Perf_{it}$= (policy $measure_{it}$,control $variables_{it}$)……. (equation 1)

The policy measure that specifically is the interest of this study is the bill purchase requirement. Hence, the model can be reformulated as:

$Perf_{it}$= ($bill_{it}$, control $variables_{it}$)……(equation 2)

Therefore, the bill effect on performance mathematically can be expressed as:

$Perf_{jt} = \beta_j + \beta_1 Bill + \beta_k \sum X^K_{j\,t} + Bz\ DUM + \varepsilon_{jt}$……(equation 3)

Where $Perf_{it}$ is the dependent variable explaining performance of bank i at time t, with i= 1….N; t=1…T, β_j is a constant term, X_{jt} are k explanatory variables and ε_{jt} is the disturbance term. A Dummy variable is added to the model to classify the periods in to two: before and after the bill purchase policy. A variable 1 is assigned to represent the period after the bill purchase policy and 0, otherwise.

The econometric model can be expressed incorporating the identified variables as follows:

$ROA_{it} = Bill_{it} + NIM_{it} + PRTL_{it} + LNTA_{it} + FRTA_{it} + LNDP_{it} + DUM_t + \varepsilon_{jt}$ ……(equation 4)

See Table 1 for description of variables

Table 1: Variable Definitions:

Variables	Definition	A priori assumption
ROA	Net profit after tax/ total assets- measures profitability	
Bill	Measures the exposure level to government bill which will be used to finance mega projects like the millennium dam	+/-
NIM	Net interest income/average assets- measures the earning level from the traditional intermediation activity of banks	+
PRTL	Provision/ total loans- measures the credit risk exposure of banks	-
LNTA	Loans/ Total Asset- measures the level of the core earning source from total asset	+
FRTA	Foreign bank deposit/ total asset- the exposure level to non-interest income sources	+
LADP	Liquid Assets/ Deposit- the liquidity level of banks	-/+
DUM	Dummy variables, 0 and 1	

Data and Model Tests

Panel Unit Root Test

Before estimating the model each variable is tested for stationary. Hadri LM test is used to observe for the existence and level of unit root in each variable. The Hadri unit root test sets for the null hypothesis Ho: All panels are stationary and the alternative Ha: Some panels contain unit roots. Therefore, with a 95% confidence level, a result with p-value less than 0.05 can be a good reason to accept stationary of the data. Most of the variables including the variable which is a focus of this study are stationary at level and few are at first difference. Hence, fixed effect and random effect models can be applied to find out the effect of policy measure on bank performance.

Table 2: Hadri LM Unit Root Test

Variable	Z-stat At a level (0)	Sig.	z-stat first difference (1) /Kernel (bartlett 1)	Sig.
RoA	5.3593	0.0000	4.3232	0.0000
Bill	6.8418	0.0000	4.3561	0.0000
NIM	0.3340	0.3692	1.6483	0.0496
PRTL	3.3537	0.0004	2.1544	0.0156
LNTA	4.5325	0.0000	3.2823	0.0005
FRTA	1.0120	0.1558	1.8384	0.0330
LADP	2.6663	0.0038	2.0390	0.0207
DUM	6.5182	0.0000	4.0796	0.0000

Hausman Test for selection of suitable panel model (Fixed Effect versus Random Effect)

The Hausman test with large value chi-square statistic and p-value shows that at 95% significant level the results of the fixed effect are most appropriate to explain the model. Hence, the empirical results are provided based on the fixed effect model outputs.

Table 3: Results of the Fixed Effect and Random Effect Models

Variables	Fixed Effect- RoA		Random Effect- RoA	
	Coefficient	Sig at 95%	Coefficient	Sig at 95%
Bill	-.0006927	0.002	-.0006609	0.001
NIM	0.2208391	0.039	.2228798	0.020
PRTL	.0502745	0.597	.0610316	0.477
LNTA	-.0543927	0.027	-.0539367	0.016
FRTA	.0957503	0.005	.1007178	0.001
LADP	-.0545908	0.000	-.0546639	0.000
DUM	.9726132	0.045	.9464246	0.033
_cons	6.270727	0.003	6.148274	0.001
Hausman Test	chi2(14) = 122.211 Prob>chi2 = 0.0000			

Explanatory power of the fixed Effect model and other model tests

The measure of goodness of fit, the coefficient of determination, for the within () and overall ()is sound witnessing the relatively good representativeness of the model. The result of the F- statistic (8.87) and its probability (0.0000) revealed similar facts. In addition, the F test for the error term supports the homoscedasticity or the null hypothesis. Muliticollinarity of variables as shown in the correlation matrix is not serious.

Correlation

. correlate ROA NIM PRTL BILL LNTA FRTA LADP (obs=56)

	ROA	NIM	PRTL	BILL	LNTA	FRTA	LADP
ROA	1.0000						
NIM	0.1028	1.0000					
PRTL	0.1316	0.0356	1.0000				
BILL	0.2371	-0.2615	-0.1594	1.0000			
LNTA	0.1158	0.2221	0.2891	-0.2196	1.0000		
FRTA	0.4145	-0.1125	0.0999	-0.0750	0.0795	1.0000	
LADP	-0.4747	0.0728	-0.0657	-0.5102	-0.5206	0.0078	1.0000

Trend and Descriptive Statistics

Despite the variation in the profitability of private banks, the mean RoA appear positive (2.9%) and even goes to the maximum level of 5%. The figure can explain that the banking business in Ethiopia remained one of the top profitable engagements. Trend wise as well, the profit of the banks under study is moving in an increasing trend in pre and post bill purchase requirement periods (Chart 1). The average bill purchased by a bank during the three years' time is around Birr 700 million; hence, bill purchased by the eight banks under study stood more than Birr 5 billion which witnessed significant exposure in relative to its share from banks' assets and loan stock. The amount of exposure to bills is computed basing on gross new loan disbursements than either net loan disbursements or outstanding balance which ease the account to replicate and grow more rapidly than the official 27% share stated in the policy. As shown in Chart 2, even in some of the periods the growth rate of the bill exceeds the loan growth rate. In other words, the decrease or stagnancy in the growth of the loan book cannot be a good reason to halt the growth of bill purchased. In terms of yield, the effective interest rate attached with the bill is 3%, which seems lower than the minimum interest rate required to be paid for saving and fixed time deposits (5%) but is equivalent to the cost of fund of private banks (Lelissa 2014). . The price for bill seems deliberately done for banks to operate at break-even point. Therefore, with the existing level of exposure, each private bank earns an interest income of Birr 21 million per annum on the acquired government bills. This obviously is lower as compared to the interest income that could be obtained from loans and advances, Birr 70 million per annum at 10% effective interest rate. Hence, as a straight forward analysis acquiring the bill seems to have its own negative implication on the profitability of banks. The variation in the net interest margin (NIM) can also further support the aforesaid initial argument, but the mean value of the NIM stood at reasonable level to ensure profitability. Notwithstanding the policy framework that can constrain the growth of loans, the loan share from the total asset of banks is considerable to reveal private banks high reliance on the traditional intermediation business to boost their earnings. However, the variation is very considerable with minimum and maximum share of 29% and 70%, respectively. Bank's ability to create fee based services doesn't appear momentous as compared to the intermediation business. The forex asset, which is the next top income generating activity and not prone to the bill requirement, is having limited share from the total asset. On the good front, costs related to default risk are not severe to further affect profitability performance but sometimes banks held provision level of around 10% of their credit portfolio exceeding the minimum provision required for healthy loans. The liquidity level of banks, excluding some of the outliers in the data, is also with significant variation but remained exceeding or closer to the minimum liquidity requirement set by the NBE (15% of net deposits).

Descriptive Statistics

Variable		Mean	Std. Dev.	Min	Max	Observations
ROA	overall	2.868143	1.375626	-3.759	4.684	N = 56
	between		.9131179	1.415857	3.947143	n = 8
	within		1.072157	-2.306714	5.234286	T = 7
BILL	overall	645.5602	997.5824	0	3754.776	N = 56
	between		366.1736	148.2921	1187.097	n = 8
	within		935.7964	541.5368	3213.239	T = 7
NIM	overall	4.909875	1.586413	2.616	10.783	N = 56
	between		1.157671	3.856286	7.408857	n = 8
	within		1.15009	1.052018	8.284018	T = 7
PRTL	overall	3.240875	1.897774	1.045	9.827	N = 56
	between		1.484041	1.352857	5.555143	n = 8
	within		1.280401	-.1422679	7.512732	T = 7
LNTA	overall	47.2538	9.688952	28.195	69.697	N = 56
	between		4.333473	39.02757	53.10671	n = 8
	within		8.783247	35.55995	67.15052	T = 7
FRTA	overall	10.22325	4.316443	1.766	21.443	N = 56
	between		2.516507	7.045143	13.57386	n = 8
	within		3.604126	4.539964	20.43025	T = 7
LADP	overall	55.46859	18.91633	26.784	137.705	N = 56
	between		10.75813	44.29857	77.58014	n = 8
	within		15.95983	20.16744	115.5934	T = 7
DUM	overall	.4285714	.4993502	0	1	N = 56
	between		0	.4285714	.4285714	n = 8
	Within		.4993502	0	1	T = 7

Empirical Result

The study finds that banks exposure to government bill has negative effect on performance. This is in line with the a priori assumption; however, the magnitude of the effect as shown in the coefficient of the bill is not severe to result in losses. Even as revealed in the dummy variable added to the research, banks profitability has positive association with the post bill purchase period. In other words, the two period's comparison revealed a relatively better profitability record for private banks during times of policy restrictions. Despite the negative relationship, the bill seems contributed positively to performance via moping the excess liquidity holding of banks. The bill purchase has created a relatively better opportunity for private banks to invest their excess funds in government securities than the customary practice of holding their liquid asset in zero earning accounts at the National Bank of Ethiopia. Since the policy measure was undertaken during the time when banks were excessively liquid, the result of the study strongly supports the above argument. In addition, the reduced and limited share of loans has forced banks to look for other fee generating sources which have positively contributed for profitability. This can be inferred from the positive and significant relationship between the foreign reserve to total asset and profitability. The net yield from interest earning assets, the net interest margin, has a positive and significant relationship with profitability. As shown above the NIM is not by large affected by the policy measure, which might be associated with Bank's response to the policy through adjusting their loan prices in a way to compensate for the opportunity lost. The counter side, the price of the interest bearing liabilities, remained having a fixed rate which by large ease banks to make adjustment on the lending rate. Hence, the Banks cost related to bill purchase see to some extent seems covered by the borrowers than the Banks. Interestingly, the rate increase has not resulted in materialized high default risk but the potential could still be there. The provision to total loans is negatively related to performance but stayed insignificant to affect selected private banks' performance. In general, the result of the study shows that the effect of the policy measure is mitigated by the excess liquidity standing of banks during the policy formulation, the limited but likely possibility to expand to other fee generating services, stable liability prices and banks discretion to adjust their asset prices.

Fixed-effects (within) regression	Number of obs	=	56
	Number of groups	=	8
R-sq: within = 0.6023	Obs per group: min	=	7
between = 0.3453	avg	=	7.0
overall = 0.4907	max	=	7
	F(7,41)	=	8.87
corr(u_i, Xb) = 0.0842	Prob > F	=	0.0000

ROA	Coef.	Std. Err.	t	P>t	[95% Conf. Interval]	
BILL	-.0006927	.0002112	3.28	-0.002	-.0011192	-.0002662
NIM	.2208391	.1036085	2.13	0.039	.0115976	.4300807
PRTL	.-0502745	.0944566	0.53	-0.597	-.1404845	.2410335
LNTA	-.0543927	.0237566	-2.29	0.027	-.1023701	-.0064153
FRTA	.0957503	.0322979	2.96	0.005	.0305232	.1609773
LADP	-.0545908	.0126835	-4.30	0.000	-.0802057	-.0289759
DUM	.9726132	.4705075	2.07	0.045	.0224039	1.922822
_cons	6.270727	1.991933	3.15	0.003	2.247937	10.29352
sigma_u	.75670644					
sigma_e	.78314382					
rho	.48283626	(fraction of variance due to u_i)				
F test that all u_i=0: F(7, 41) = 4.96 Prob > F = 0.0004						

Conclusion and Recommendation

The major theme of the study was to assess the effect of sector specific policy measures on bank performance. The study has taken one of the top policy issues; the requirement to purchase government securities, and analyzed its impact on profitability measure. It has used panel data from 2007-2013 of eight middle size private banks with a total of 56 observed variables. The study finds that exposure to government bills has negative and significant relationship with performance. Nevertheless, the magnitude is not severe. Even the pre and post policy periods comparison revealed a relatively better profitability record for private banks during times of policy restrictions. Hence, the bill seems contributed positively to performance via moping the excess liquidity holding of banks or providing an opportunity for private banks to invest their excess funds in government securities than the customary practice of holding their liquid asset in zero earning accounts at the National Bank of Ethiopia. In addition, it instigated banks to work on fee generating sources. The significant relation of the NIM with performance revealed bank's respond to the policy through adjusting their loan prices in a way to compensate for the opportunity lost. Hence, the Banks cost related to bill purchase to some extent seems covered by the borrowers but the increase in rate has not resulted in materialized high default risk. In general, the result of the study shows that the effect of the policy measure is mitigated by the excess liquidity standing of banks during the policy formulation, the limited but likely possibility to expand to other fee generating services, stable liability prices and banks discretion to adjust their asset prices. However, the decline trend in the share of loans from the total asset could have negative effect on the long run but to some extent tone down by the maturity of part of the bills in few years time. The study focused on historical impact of (if any) of the bill measure and it can serve as a initial work to further pursue on the impact of policy measures on the long run performance of Banks.

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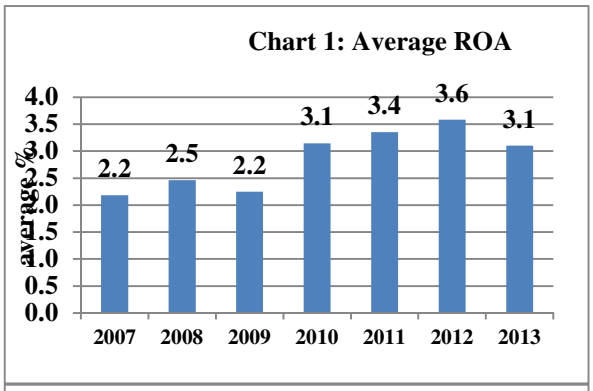

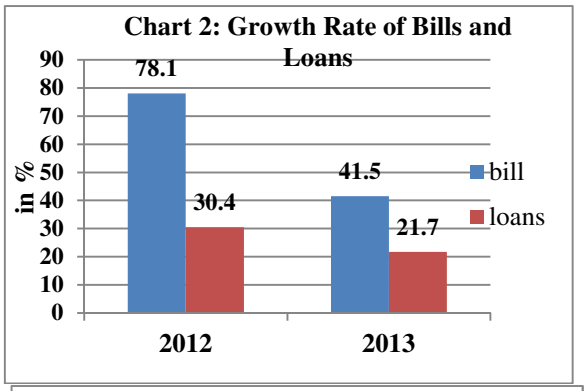

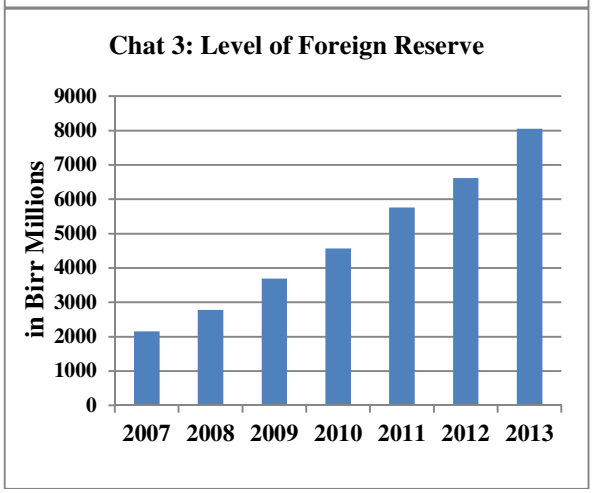

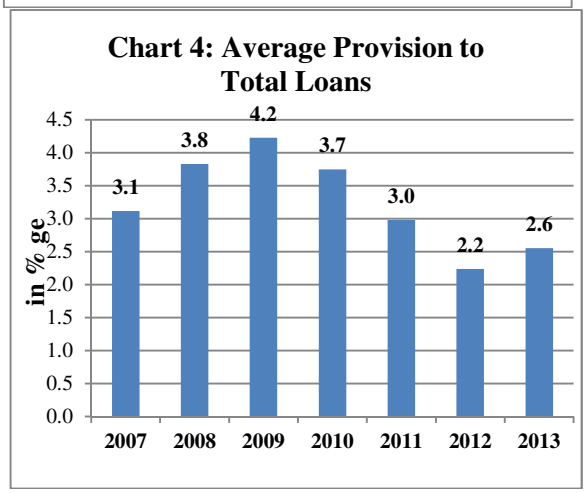

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