Article can be accessed online at http://www.publishingindia.com

Are Regulatory Measures Influencing Bank Performances? The Ethiopian Case

Tesfaye Boru Lelissa*, Abdurezak Mohammed Kuhil**

Abstract

The study has explored the impact of selected regulatory variables on performances applying a panel regression on 18 commercial banks in Ethiopia for the period 1999-2015. The variables used in the model are directly derived from the extant regulatory approach used by the Central Bank to regulate the banking business. The literature review also shows that most of them are enacted in other countries with few exceptions and mainly related to bill purchase requirements. The model constructed, therefore, has established and finds a statistically significant relationship in some of the regulatory variables with performance measures. The most important findings of this study relate to the negative affect of some of the recent policy directions from the regulator on performances. For instance, branch growth and bill purchases have a statistically significant negative relationship with bank performances. This should be one of the areas requiring policy flexing from the regulatory side in the future. Nevertheless, other policy direction such as capital growth requirement remains a positive contributor to performances. More specifically, the study finds that exchange rate has a positive and statistically significant relationship with the profit models. Despite the benefit of a depreciating local currency and a stable foreign currency type to shield them from currency fluctuation, it allowed banks to earn a 'policy profit'. The depreciation of Birr permitted banks to enjoy a profit from their foreign currency holdings in the form of daily asset revaluations. Nevertheless, many of the variables (prudential regulatory variables) used in this study (interest rate, reserve rate, number of new entrant banks, and level of entry capital) are not statistically significant to influence on bank performances.

Keywords: Bank, Ethiopia, Performance, Regulation

Introduction

Since the onset of the market-oriented economy in 1990s, Ethiopia has made a series of policy reform measures and deregulations pervading all aspects of the economy (Geda, 2006). A recovery in the overall economic performance has been registered as measured by GDP and real GDP per capita. Over the past decade, the country has recorded double-digit economic growth rate (averaging at 11% annually) and is rated one of the fastest growing non-oil exporting economy in the world (MOFED, 2015). The source of this overall economic growth is mainly attributed to the growth in the agriculture and service sectors (NBE Report, 2015). The service sector which accounts for 45% of Ethiopia's GDP has been a major driver of economic growth, posting annual average growth rates of about 14% since 2006-7. The growth in the service sector mainly emanated from the expansion of hotels and restaurants, real estate and housing, transport and communication, banking and insurance, as well as trading activities. Nevertheless, alike the situation in Sub-Saharan Africa, the share of the financial sector in the overall economy of Ethiopia is at lower level and can be referred as a shallow financial market (IMF, 2007). The contribution of the financial sector from the total services and the GDP stood at 7% and 2.6% with average growth rate not exceeding 1% per annum (MOFED, 2014).

Currently, the Ethiopian banking industry is highly protected from outside competition through ban of foreign bank entry and the entrance of new local private banks into the market was very restricted (Bezabih and Desta, 2014). Since the 1991 measure, there appears a growth in the number of banks, but regulation remained tight with the sector entertaining various reform and regulatory measures from the National Bank of Ethiopia. Despite the regulators' intent to ensure a robust financial system, it is apparent that some of its measures will have implications on the performance of banks. Lipczynski et al. (2013) confirmed that regulation (like ban of foreign

* Ph.D. Candidate UNISA, Vice President, Debub Global Bank S.C., Addis Ababa, Ethiopia. Email: teskgbl@gmail.com
** Assistant Professor, Department of Business Leadership, School of Commerce, College of Business and Economics, Addis Ababa University, Ethiopia. Email: abdurazak.mohammed@aau.edu.et

banks, entry capital increase, etc.) has a significant impact on the performance and efficiency of banks. Nevertheless, the effect of regulation on performance is not widely assessed in empirical studies. For instance, previous studies (Gilbert, 1984) and studies in Africa (Classesns and Laeven, 2004) do not account for the regulatory and institutional factors that are likely to shape competition.

The Ethiopian banking industry is appropriate for the investigations of regulations and bank performance relationship as the industry is tightly regulated where entry of even new private local banks is not easy following regulatory measures enforcing barriers to entry. Most importantly, the National Bank's attempt to guide on bank's activities through both structural and prudential (reserve, capital, interest rate, etc.) regulations sometimes is not favourably accepted by banks. A case in point is the requirement from the National Bank of Ethiopia (NBE) for private banks to allocate a portion of their lending on government bills. Recently, the central bank has also set a lending cap to banks on their non-export sector exposures. Policy reforms that require banks to surrender 30% of their foreign currency inflow to the government as well as interest rate adjustments, all will have implications on the performance of banks. This study, therefore, systematically identifies and measures the effects of regulation on the performance of the Ethiopian banking sector using panel data of 18 commercial banks for the period 1990-2015.

Background of the Industry (Regulation and Performance of the Ethiopian Banking Sector)

The banking sector in Ethiopia is regulated by the central bank, the NBE, with the aim of ensuring the health of the financial sector and improving the efficiency of service provision. The Licensing of Banking and Supervision of Banks and Insurance Companies Proclamation (No. 84/1994) empowered the NBE to supervise financial institutions. The proclamation, however, seemed to have limiting conditions with regard to entry which can be considered the main contributor to the concentration of the banking services among a few banks. For example, it is clearly stated in the Licensing and Supervisions of Banking Proclamation No. 84/1994 that no foreign national shall undertake banking business in Ethiopia. In addition, the minimum capital required to establish a new bank was raised from Birr 10 million in 1994 to Birr 75 million in 1999 and to Birr 500 million in 2011. It can be argued that although these directives and proclamations are enacted to strengthen the capacity of existing banks, they have seemingly become a barrier as to why the number of operating banks did not flourish in the banking system of the country. For instance, from 1996–1999 five new private banks were operational in the country; whereas after 2000, only two banks joined the banking system. The entry of banks into the market after the recent capital revision is nil (NBE report, 2016). Therefore, the Ethiopian banking industry doesn't seem free from barriers to entry conditions whose potential could affect the concentration and performance of individual banks.

Besides the growing need for high capital requirement to get banking licenses, the current banking system of Ethiopia is highly regulated and protected from foreign competition. The banking activity is entirely owned by domestic banks and two forms of ownership structures are prevalent, i.e., either banks are fully owned by private owners or else banks are fully owned by government (NBE report, 2016). In terms of market share, the commercial banking sector is still under the dominance of state-owned banks. The number of state-owned commercial banks is few; nonetheless, they control more than 70% of the total assets of the entire banking system (NBE report, 2016). Although the state-owned banks dominated and are still dominating the market, they do appear to have been facing a competitive environment because the issuance of the banking act allowed the participation of private banks in the industry (Deribie, 2012). However, the competition level might not be significant as the new banks generally have a relatively small market share (Lelissa, 2007). The share of private banks in the asset base is limited to 30%. In addition, the persistent presence of entry barriers even after the financial liberalisation has weakened the competition among the domestic banks (Bezabeh and Desta, 2014). The banking system is still characterised by high regulation and control for a number of reasons. Some of the reasons include protecting depositors' fund, ensuring safety and stability of the banking system, protecting safety of banks by limiting credit to a single borrower, and limiting or encouraging a particular kind of lending because of expected impact on the economy (Semu, 2010). In addition, policy measures from the government interfere in the decision making process of private commercial banks which might have implication on efficiency and performance. For instance, Ethiopian

private banks are required to allocate 27% of their new lending to the government with an interest rate of just 3% (NBE Directive No. MFA/NBE BILLS/001/2011). Measures that further ensure the effectiveness of such directives were introduced for the private banking system to channel part of its lending to government bill purchases, the requirement for short-term loans (up to a 1 year period) to constitute 40% of the private banks loan stock is one of such instances.

In tandem with such institutional arrangement, the central bank has issued sequence of policy measures which include interest and exchange rate reforms among others were undertaken. The first stride was the lifting up of nominal deposit interest rate. For instance, the average nominal deposit rate of banks for all types of deposits picked up from 5.9% in 1991-92 to a range of 6.3–10.9% until 2001. This has led to a positive real deposit rate. However, after the first year of the floor for saving deposit rate was set at 3.0% in 2002 up until 2005. Again, the floor for saving and fixed time deposit is revisited subsequently to 4% and 5%, respectively. This has resulted in a negative real deposit interest rate record triggered by the increasing inflationary pressure. Recently (October 11, 2017) and immediately following the devaluation of Birr by 15%, the central bank has lifted the minimum deposit rate to 7% with the aim of reducing the impact of devaluation on inflation (Interest rate directive no. NBE/INT/12/2017).

With regard to lending rate, it was decontrolled and left to be determined by the banks themselves as late as January 1998 as compared to October 1992 when the bias between public and private charging of deposit rate was abolished. In all the reform period, a positive lending interest rate was recorded except in 2002/03 which was markedly known as severe draught year. Furthermore, in most of the years during the period 2006/07-2010/11, when the country was in hyper-inflationary situation, the real lending rate appears negative. The liberal lending rate is still operating successively as the regulator prefers to play with the floor deposit interest rate to affect the lending rate of banks. Nevertheless, the lending business cannot be considered totally liberalised as it's subject to regulatory involvement in terms of setting lending caps, priority sector choices, as well as attached to certain requirements. For instance, requirements are set on the tenure portfolio distribution (short/long), bills are also required depending on the level of fresh disbursements, and product-related limits still operate (overdrafts cannot exceed 25% of the loan portfolio).

The sector liberalisation was also strengthened by reform on financial instruments which includes devaluation of exchange rate, introduction of treasury bills, inter-bank foreign exchange market, and others (NBE report, 2013). Even if devaluation is a rare incident, the value of local currency is required to depreciate on daily basis against dollar. Banks also have limited choice on the type of currencies to transact and are recently required to surrender part of (30%) their foreign currency inflow to the NBE (Foreign exchange surrender requirements of commercial banks directive no. FXD/50/2017). The policy direction reflects the acute foreign currency shortage and a widened balance of payment problems. Country's like Zimbabwe, usually known with such severe trade deficit and balance of payment problems, have been following similar policy framework via requiring exporters to channel around 40% of their export proceeds to the government.

Despite the reforms introduced in the sector and the tight regulatory situations, the banking system still remains undiversified pervading a structure which unlikely encourages competition. Currently, with the initiation of the financial sector reform, the commercial banking ecosystem consists of a total of 19 banks, out of which three are public and 16 are private-owned banks. As a result, the number of bank branches picked up from the level as low as 203 in June 1991 to 1,724 in June 2013 indicating significant expansion of banking activities (NBE report, 2013). The private-owned banks share in branch networks is 49% and significant share of branch network belongs to the public banks.

Total deposits mobilised by the banking sector during 2015-16 reached to Birr 435.55 billion, about 66.23% was mobilised by public banks while the remaining 33.77% balance was collected by private banks. Regarding deposit market share, public banks accounts for 68.2% of the total deposit market share of which CBE accounts for 66.4%. Small banks represent 10.36% of the total deposit market. The number of private banks which holds market share below 1% appear to be significant, i.e., (DGB, Addis, Enat, Berhan, Bunna, Abay, Lion, Zemen, OIB, and CBO Banks hold 0.17%, 0.27%, 0.37%, 0.70%, 0.74%, 0.87%, and 0.92%, respectively). The deposit structure of commercial banks depicts that demand, saving, and time deposits accounts for 45.2%, 48.6%, and 61.2%, respectively, as of June 30, 2016. This is in contrast to the 60% demand deposit share of the CBE that allowed it to exceptionally benefit from the high share of the low-cost

types of deposits. The market share of private banks in the total outstanding loans and advances is 36.8%, i.e., Birr 232.11 billion as of 2015-16. In contrast, the share of public-owned banks remained significant, i.e., 63.2% of which CBE holds 61.5% of the industry's loans and advances. The total NBE bills purchased by private banks stood Birr 26.1 billion as of June 2014 which is 45% of the total loans and advances.

Profitability indicators show that the average earning per share, average return on asset, average return on equity, and average profit per branch of private banks are 30%, 3%, 18%, and Birr 4.93 million, respectively, in year 2015-16. The profitability of CBE almost matches with the profitability level of the industry gaining around 70% of the industry profit. Hence, the introduction of new private banks into the banking industry does not seem to affect the profitability of the leading bank.

In sum, CBE continued to be a single industrial giant accounting for 63% of net loans, 65% of deposits, and 39% of capital in the banking system. Public banks (CBE and CBB) account for 65% of loans, 67% of deposits, and 41% of capital in the sector. In such regard, the aggregate share of the public banks appears reasonable to explain the dominance of public banks in the sector. This is for the reason that the two state-owned banks were sharing the same management at the top for long period, the Public Financial Institutions Supervisory Agency. Hence, such an act seems to reflect the government stance to avoid or minimise the extent of competition between the public commercial banks. Recently, however, the government has merged the two state-owned commercial banks further exacerbating the level of market concentration in the industry.

Literature Review

Regulations

Bank regulation typically refers to the rules that govern the behaviour of banks; whereas, supervision is the oversight that takes place to ensure that banks comply with those rules (Casu et al., 2006). More specifically, bank regulations exist for safeguarding the industry against systemic risk, protecting consumers, and achieving stability (Llewellyn, 1999). Regulation is also important for the efficiency of the banking industry (Jalilian, 2007). Therefore, the assessment of some of regulatory variables appears important. As argued by Gilbert (1984), a criticism of the methodology of earlier market structure studies is that the role of bank regulation was always neglected. There may be strong interactive effects between regulation and other variables which could have a significant impact on market concentration and firm performance. For example, interest rate controls and a high degree of entry barriers facilitate market collusion with the result that even markets with low concentration may exhibit collusive behaviour. In contrast, it may be argued that the protection which regulation affords may motivate banks to seek risk reduction by choosing safer operating strategies, resulting in a quiet-life type of market structure (Hicks, 1935). Therefore, it is useful to mention that there exists two imperative types of bank regulations that have significant influence on the performance of banks (Molyneux and Thorton, 1992). This incorporates the structural regulation (concerned with banking market and performance) and prudential such as reserve ratios, capital requirement issues in banks. Therefore, in terms of measures, where there are high profits and collusive behaviour in banking market, the regulatory authorities enhance banking competition using the structural regulation. The prudential regulations are required to enhance bank safety and wider economy as a whole.

Neuberger (1997) has re-modified Bain's Structure-Conduct-Performance (SCP) framework by incorporating important variable in industry structure study and public policy. His argument relies on the fact that government policy can operate on almost all of the SCP variables: structure, conduct, and performance variables. According to the SCP paradigm, if an industry comprises only a few large firms, the abuse of market power is likely to lead to the level of output being restricted and prices being raised above the equilibrium level (Lipczynski et al., 2013). The stifling of competition is likely to have damaging implications for consumer welfare (Shafer, 2004). Therefore, there is a role for government or regulatory intervention to promote competition and prevent abuses of market power. Regulation involvement includes direct measures on market or industry structure and hence competition might be promoted by preventing a horizontal merger involving two large firms from taking place or requiring the break-up of a large incumbent producer into two or more smaller firms (ibid. p.3). Moreover, involvement might be targeted directly at influencing conduct through restricting a firm with market power from setting a profit-maximising monopoly price.

In addition, a wide range of government policy measures (fiscal policy, employment policy, environmental policy, macroeconomic policy, and so on) may have implications on firms' performance, measured using indicators such as profitability, growth, productive, or allocative efficiency.

Literature is not also conclusive on the affect of regulation on bank performance. Some authors consider that effective regulation of bank entry can promote stability and enhances prudent risk behaviour (Keeley, 1990). Others consider regulation as a barrier to hinder competition therefore allowing for inefficiencies (Shleifer and Vishny, 1998). Therefore, countries with greater regulatory restrictions on bank activities are associated with lower-banking sector efficiency (Barth, et. al, 2001). Worsening the scenario, regulations like restrictions on bank entry are associated with greater bank fragility (Allen and Gale, 2004) and lower bank margins (Demirgüc-Kunt et al., 2003).

The usually used variable to mediate the effect of regulation on bank performance is the capital level. However, there appears a variation on the empirical result. Those supporting its positive impact justify its service as a buffer against losses and hence failure (Dewatripont and Tirole, 1994a). On the other front, negative news related to capital may cause banks to reduce lending and may encourage banks to take more credit risk (Brealey, 2001).

Studies also consider bank ownership type as a variable to represent regulatory freedom. Claessens and Laeven (2003) find that banking systems with greater foreign bank entry, fewer entry, and activity restrictions are more competitive. La Porta et al. (2002) examine the extent of government ownership to represent the degree of regulatory involvement. Claessens et al. (2001) show in a cross-country study that foreign bank entry makes domestic banking systems more efficient by reducing margins.

On the other front, studies consider the degree of liberalisation of the banking system. The impact of financial deregulation is typically assessed either through a dummy variable Salas and Saurina (2003) or simply examining the behaviour of banks during periods of financial deregulation (Das and Ghosh, 2006). The findings indicate that the impact of deregulation on bank behaviour depends, among others, on the state of the banking system and differs significantly across bank ownership. The study's findings acknowledge that bank regulation, supervision, financial structure, and financial development have statistically significant relationship with bank profitability. Some authors associate the change in such bank conduct to the various deregulation and reform measures in the banking sector. For instance, Cerasi et al., (2001) argues that the increase in the degree of competition within the European retail banking sector associates with deregulation. Similarly, Bandt and Davis (2000) find that the Italian banking system, which is being deregulated, is operating at an increased competition level.

In Africa, Fosu (2013) has concluded that despite record levels of new entry and foreign penetration, very high levels of concentration characterised African banking sectors. The average Herfindahl-Hirschman Index (HHI) is as high as 2059, while the five-bank concentration ratio stands at 77.29% for the whole African region. On the positive side, concentration assumed a downward trend across all the sub regions over the past few years. The HHI shows dramatic and consistent downward trend in all sub regional banking sectors except West Africa, where the trend is moderate. The decline is associated with African governments' willingness to embark on financial sector restructuring involving deregulation and a relaxation of entry barriers to foreign investment (Beck and Cull, 2014). The financial sector reforms include: reducing credit controls and reserve requirements, removing interest rate controls, reducing entry barriers to foreign banks; state ownership, developing securities markets, and strengthening prudential regulation and supervision. These developments appear to have improved the financial soundness of African banks (Amidu, 2013).

Bank Performance

Studies of banking can generally be divided into two groups according to the measure of performance used. The first group uses some measure of the price of particular banking products and services in order to capture the performance of the firm, whereas the second uses a profitability measure such as return on assets or return on equity. However, using the price of a single banking product as a measure of performance may be misleading because of the multi-product nature of a bank's output.

Profit measures may be more informative, but may also be more difficult to interpret because of the complexity of the accounting procedures involved. Molyneux and

Forbes (1995) emphasise those profitability measures, in which all product profits and losses are consolidated into one figure, and are generally viewed as more suitable because they bypass the problem of cross subsidisation.

Evanoff and Fortier (1988) suggest a number of reasons why profit measures is preferable. Firstly, although some studies have used bank product prices as the dependent variable, banking is a multi-product business and individual prices may be misleading. Prices can only be used if costs directly associated with these prices are explicitly accounted for as explanatory variables. Secondly, the potential for significant cross subsidisation between products obviously exists and pricing strategy will differ across markets. The use of a profit measures eliminates many of these problems.

This being the scenario used in most literatures in measuring performance of the banking system, the whole idea of measuring bank performance is to separate banks that are performing well from those which are doing poorly (Berger and Humphrey, 1997). Bank regulators screen banks by evaluating banks' liquidity, solvency, and overall performance to enable them to intervene when there is need and gauge the potential for problems (Casu and Molyneux, 2003). On a micro-level, bank performance measurement can also help improve managerial performance by identifying best and worst practices associated with high and low measured efficiency.

Methodology

This section of the study explores the impact of regulation on bank performances. A regression model with explanatory variables comprising those policy measures used by the NBE to moderate and ensure price stability, guarantee safety, and soundness, establish entry barriers, determine modes of growth as well as direct a portion of banks' fund for national development objectives. The main theme of the section basically lies on testing a hypothesis arising from the research question: How bank regulation does not have impact on performances.

Data and Data Sources

The study aims to explore the impact of regulation on performances of individual banks operating in the industry. Therefore, the data collected combine both bank level and aggregate data of the industry and macro-economy. As the objective of the study is to explore the effect of the selected regulatory factors on individual banks, a panel dataset has been applied. To further explore the impact of regulation on industry-related measure aggregate time series data are used. The major data sources are the various annual and quarterly publications and financial accounts of NBE, MOFED, and commercial banks. Basically, the coverage is from 1999-2015 consisting of all 18 commercial banks in Ethiopia.

Model Construction

The hypotheses testing on the impact of regulation on performances are conducted through a model that establishes a relationship between regulatory variables and bank profit and price measures. The purpose of the model is to test the level of impact of regulatory measures on performances. Based on such framework, the models to be tested can be formulated as follows:

$$Per_{jt} = f(\text{regulation}) \ldots\ldots\ldots\ldots \quad \text{(Equation 1)}$$

where Per_{jt} represents performance measure/s for bank j during period t; regulation are regulatory measures prevailed in the system at time t and the general model to be estimated is of the following linear form:

$$Per_{jt} = \beta_j + \sum \beta_k X^K{}_{j\,t} + \varepsilon_{jt} \ldots \varepsilon_{jt} = v_i + u_{jt} \ldots\ldots \quad \text{(Equation 2)}$$

where Per jt is the profitability of bank j 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 with v_j the unobserved regulatory effect and u_{jt} the idiosyncratic error.

More specifically, the econometric model can be expressed in mathematical form incorporating the identified variables. In order to allow for the inexact relationship among the variables as in the case of most economic time series, variables error term' $\varepsilon i,t_t$' is added to form equations.

Model Set I

$$Per_{tJ} = \beta 0 + \beta 1 EXCi,t + \beta 2 INRi,t + \beta 3 RESi,t + \beta 4 ENCAPi,t + \beta 5 BRGi,t + \beta 6 NENT + \beta 7 BILL + \varepsilon i,t$$

where per incorporates RoA, ROE, NIM, dependent variables, and others independent variables as explained in the Table 1.

Variable Definition and A-priori Assumptions

The variables used in this study are initially obtained from the various directives and circulars of the NBE. Furthermore, a careful monitoring of national policy papers related to economic growth and bank sector development was made. A case in point in such regard is the Growth and Transformation Plan I & II that clearly addressed the growth mode of the economy as well as the expected contribution of banks to the development endeavour. In addition, it has set both profit and price-related measures of bank performance. This enables the study to contribute on providing evidence to regulators on the proper measure of performance in the Ethiopian banking industry. Unlike other studies, the variable choice is set in a way to have considerations for broader and key regulatory factors which are expected to play an important role in the current market structure, conduct, and performance of the Ethiopian banking system. The researcher considers the addition of the variable is important in Ethiopian context due to the high regulatory involvement in the banking system. This is also an important contribution of this study in which previous studies on similar topic were not able to provide coverage on. For instance, Classesns and Laeven (2004) commented that studies in Africa do not account for the regulatory and institutional factors. It has set both structural (such as entry barriers like high entry capital, etc.) and prudential (such as reserve requirement, exchange rate, interest rate controls). In addition, it has consideration for policy involvements that can affect bank performance (like requirement to purchase government bills, branch expansion rate, etc.). Such variables are used to empirically test the research hypothesis related to the impact of regulation on performance of banks and also suggest investigations on areas demanding regulatory involvement in the future. The literature review also shows that most of them are enacted in other countries with few exceptions and mainly related to bill purchase requirements hence the a-priori assumptions are set based on previous works.

Table 1: Variables Definition for Regulatory Factors

Variables	*Definition*	*Expected relationship*
Dependent		
ROA	ability of a bank's management to generate profits from the bank's assets	
ROE	the return to shareholders on their equity	
NIM	residual of interest income resulted from efficient decision making of management	
Independent		
EXCH	Exchange rate of Birr against USD (Depreciation of local currency)	-
INTR	The minimum interest rate set for saving and fixed time deposit	±
RESR	Reserve requirement as percentage of deposits	-
ENCAP	Entry Capital requirement	±
BRGR	Branch growth rate per annum	±
NWENT	Number of new entrant banks to the sector	-
BILL	Bill purchase requirement, dummy variable 0- for periods without bill requirement and exempted banks	-

Source: Authors' computation

Descriptive Statistics and Trends

Ethiopia follows a managed foreign exchange regime where the Ethiopian Birr is pegged against USD by policy and the currency rate with other currencies is freely determined based on the cross-currency rate with USD. The trend in exchange rate portrays a conscious policy measure that sets down a gradual depreciation of Birr against USD. The mean exchange rate of USD with Birr is 13, where USD$1 is exchanged equivalently with 13 Birr. Therefore, over 1990-2015, Birr has depreciated by 1.5 times against dollar i.e., from 7.98% to 20.096%.

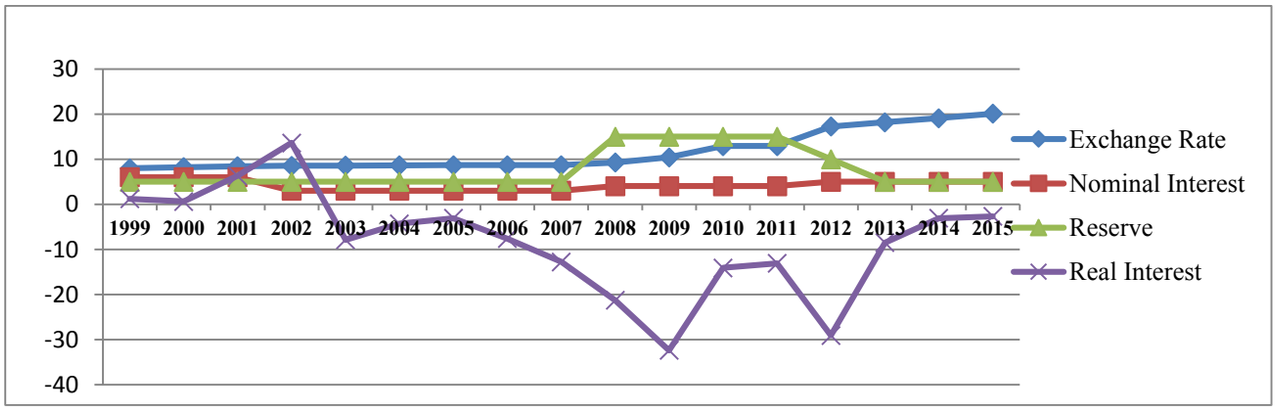
Table 2: Descriptive Statistics of Regulatory Variables

Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
ROE	193	0.00	90.82	18.9962	12.87965	1.697	0.175	6.461	0.348
ROA	193	0.00	5.25	2.2333	1.10661	–0.312	0.175	–0.252	0.348
NIM	193	0.00	10.16	4.5473	1.80649	0.265	0.175	0–.055	0.348
EXCH	193	7.98	20.10	13.1546	4.64224	0.262	0.175	–1.686	0.348
INTR	193	3	6	4.45	0.962	–0.181	0.175	–0.994	0.348
RESER	193	5	15	8.06	4.388	0.847	0.175	–1.166	0.348
ENCAP	193	75	500	255.57	210.634	0.306	0.175	–1.926	0.348
BRGR	193	3.09	42.44	18.4704	12.30466	0.456	0.175	–1.088	0.348
NWENT	193	0	3	0.73	0.930	1.113	0.175	0.244	0.348
BILL	193	0	1	0.40	0.492	0.394	0.175	–1.864	0.348
Valid N (listwise)	193								

Source: Authors' computation

The banking sector, therefore, has been operating under relatively depreciating currency regime. Nevertheless, except few periods where sudden devaluation measures were affected, the rate of currency depreciation has followed a predetermined direction and amount easing the currency management practices of banks. The currency-related risk mostly affecting the income of banks usually arose from other non-USD currencies whose prices are determined based on the international currency market against USD. Therefore, banks usually prefer to hold major part of their foreign currency asset in USD that has predetermined trend and amount or else transfer their cross currency losses to their customers.

Under the current practice, the average minimum interest rate on saving and fixed time deposit is set by the NBE. Nevertheless, banks have the liberty to set their interest rate above the minimum threshold. The lending side perhaps is liberalised to be freely set by the banks and not subjected to regulatory interferences. The average interest rate on saving and deposit, therefore, has been around 4.4% enjoying the freedom of infrequent change. The range of change also is not significant, hence, ensuring a stable interest rate with modest fluctuations between periods (see Fig. 1).



Source: Authors' computation

Fig. 1: Trend in Regulatory Variables

Another policy measure used by the NBE to control inflation pressure as well as money circulation in the banking system is the reserve requirement. The average primary reserve requirement during the study period is around 8% with a notable variation depending on the inflation pressure. The reserve requirement historically goes to 15% of the deposit and remained above 5% in all period considered. The primary reserve is not withdrawable and attracts nil interest payments. Trend-wise, the reserve requirement is mostly stable but sometimes the variation appears significant (see fig. 1).

With regard to entry capital, the minimum capital required to establish a new bank was raised from Birr 10 million in 1994 to Birr 75 million in 1999 to Birr 500 million in 2011. Currently, under the growth and transformation plan II, the banks are expected to raise their capital level to Birr 2 billion. It can be argued that although these directives and proclamations are enacted to strengthen the capacity of existing banks, they have seemingly become barrier as to why the number of operating banks did not flourish in the banking system of the country. To elaborate this argument further, it might be necessary to look at the data on the entry of banks. For instance, from 1994 to 1999, when capital requirement was Birr 10 million, five new private banks entered to the sector. Whereas after 2000-2007, when entry capital is increased to Birr 75 million, only two banks joined the banking system and later (after 2007) nine banks emerged into the sector fulfilling the requirement. However, after capital lift up to Birr 500 million, no new bank has joined the system and even banks under formation have returned the fund collected from share sales. Therefore, entry into the market has not established a predetermined trend and the sector is entertaining an average of less than one bank per annum.

Branch expansion has been a recent policy measure directing the growth mode of banks. Banks on average have been increasing their branch network by 18%. This remains to be closer to what has been set in the policy that demands for 25% annual increment in branch network. The industry in some years and even before the enactment of the policy has been engaged in branch expansion to ensure accessibility. Nevertheless, there have been some banks in the system which were operating under limited branch framework pursuing a substituting paradigm through technology-based services and networks. The policy framework has a discouraging element towards such strategy and treats all banks to pursue a predetermined growth path not only in terms of their branch networks, but also in terms of setting rates for growth ensuring parameters. Therefore, such a policy framework remains to invite homogeneity in service offerings and growth approaches across the sector.

Another policy framework explained through dummy values is the Bill purchase requirement. The NBE has issued NBE bills purchase Directives since April 01, 2011, that mainly pertains to purchase of bonds, i.e., the great renaissance dam saving bond by commercial banks from NBE, which was later transferred to the Development Bank of Ethiopia, equivalent to 27% of new loan disbursement issued at a concessionary rate of 3% (Directive No. MFA/NBEBILLS/001/2011). This directive is confronted by private banks as it is assumed to bring formidable challenges on their activities. The directive negatively affected the expansion in the loan book and hence, reduced earning thereof of private-owned banks. In addition, its retroactive application and subsequent expansion of the exposure to bills is claimed to create tight liquidity position. The directive has excluded the state-owned commercial bank and mostly targets the private-owned banks without discrimination in terms of size and year of stay in the business.

Correlations

The correlations among the independent variables are not high (less that 0.50), indicating that there might be no serious multi-collinearity problems existing. Nevertheless, the relationship among most explanatory variables is significant to provide confidence that there is a genuine relationship between the variables in the model. For instance, exchange rate has a significant negative relationship with interest rate and positively related with the reserve requirement. Therefore, an increase in exchange rate which increases the foreign currency proceed in terms of Birr creates increased liquidity of the banking system; hence, the policy framework responds through increasing the reserve requirements so as to mop up the excess liquidity of the banks. In addition, the increase in liquidity also is attached with a lower interest to discourage saving in the banking system.

Table 3: Correlations of Regulatory Variables

		EXCH	*INTR*	*RESER*	*ENCAP*	*BRGR*	*NWENT*	*BILL*
EXCH	Pearson Correlation	1						
	Sig. (2-tailed)							
INTR	Pearson Correlation	0.446**	1					
	Sig. (2-tailed)	0.000						
RESER	Pearson Correlation	–0.004	–0.053	1				
	Sig. (2-tailed)	0.956	0.465					
ENCAP	Pearson Correlation	0.349**	0.497**	–0.073	1			
	Sig. (2-tailed)	0.000	0.000	0.310				
BRGR	Pearson Correlation	0.289**	0.358**	0.179*	0.394**	1		
	Sig. (2-tailed)	0.000	0.000	0.013	0.000			
NWENT	Pearson Correlation	–0.034	0.030	0.522**	–0.022	0.183*	1	
	Sig. (2-tailed)	0.439	0.578	0.000	0.466	0.011		
BILL	Pearson Correlation	0.598**	0.465**	–0.057	0.537**	0.433**	–0.011	1
	Sig. (2-tailed)	0.000	0.000	0.435	0.000	0.000	0.877	
**. Correlation is significant at the 0.01 level (2-tailed).								
*. Correlation is significant at the 0.05 level (2-tailed).								

Source: Authors' computation (SPSS 20)

Empirical Results

Before running the model, the ADF panel unit root test as well as normality were done. In addition, the model results were presented based on random and fixed models as the pertinent LM and F test has rejected the poolability of the data. The study finds that exchange rate has positive and significant relationship with the profit models. This remains to be a surprising result considering the banks' strategy of holding major portion of their foreign asset in less volatile currencies like USD. Therefore, despite the benefit a managed currency offers to the banks in terms of insulating them from unexpected currency fluctuations, it allowed banks to earn a 'policy profit'. The 'policy profit' is obtained from the revaluation of the foreign assets and liabilities position of banks on daily basis applying the appreciating dollar rate. Nevertheless, exchange rate established an insignificant statistical relationship with price measure, the net interest income. The change in currency price therefore is not an influencing factor for banks to adjust their prices on either the lending or deposit side or both. The positive relationship implies that banks with high level of foreign currency inflow subjected to depreciating local currency could optimise their net interest margin through engaging in intermediation business using the fund created from foreign currency inflows. Nevertheless, the effect of such relationship is not statistically significant.

Table 4: Regression Result for Regulatory Factors

	Model 1	*Model 2*	*Model 3*
	RoA	*RoE*	*NIM*
EXCH	0.1326213 (0.0430)*	1.53837 (0.0140)*	0.1481732 (0.2090)
INTR	–0.0879506 (0.3130)	–2.317608 (0.0050)*	–7.3600 (0.0961)
RESR	0.010359 (0.6670)	0.0515215 (0.8190)	0.0394617 (0.3640)
ENCAP	0.0004485 (0.0860)	–0.0399372 (0.0980)	0.0007845 (0.0862)

	Model 1	*Model 2*	*Model 3*
	RoA	*RoE*	*NIM*
BRGR	–0.0325894 (0.0121)	–0.2180223 (0.0269)	–0.0261922 (0.0579)
NWENT	0.0555263 (0.5170)	0.8196666 (0.3070)	–0.1917486 (0.2050)
BILL	–0.6555097 (0.0117)*	–2.63219 (0.0000)*	–0.0228706 (0.0476)*
CONS	1.514032 (0.0090)*	4.174191 (0.0000)*	3.948582 (0.0200)*
Adjusted R2	38.2%	41.2%	30.2%
Walid Chi2	86.25 (0.0000)*		*
F(7,168)		45.6 (0.0000)*	45.3 (0.0000)*
F-test	4.04 (0.0000)*	7.1 (0.0000)*	2.92 (0.0100)*
LM test	26.6 (0.0000)*	26.6 (0.0000)*	10.04 (0.0150)*
Hausman Chi2	15.6 (0.081)	54.09 (0.0000)*	57.29 (0.0000)*
rho(fraction of variance due to u_i)	0.18600437	0.50555455	0.04567747

Source: Authors' computation (STATA12)

On the other front, the minimum rate on saving and time deposits has established a negative but statistically insignificant relationship with profit and price models. This is an expected scenario considering the negative effect of an increase deposit rate on the yield from intermediation business. The increase in cost of fund exposes banks to high interest expense which narrows the net interest income affecting both profitability and net interest margin. The relationship, however, is not statistically significant due to the banks' liberty to adjust their lending rate following the change in the cost of fund.

Another monetary stabilisation policy requirement, the reserve requirement has also established a positive and insignificant relationship with both price and profit models. The direction of relationship, however, is unexpected in view of the downward effect of a high reserve requirement on intermediation business via holding the loanable fund of commercial banks into non-interest bearing assets. Nevertheless, the NBE has mostly kept this policy variable at a constant and lower rate, 5%. This factor, along with excess liquidity standing of banks, has not exposed banks to feel the pain from high reserve holding requirements.

There appears a mixed result in relation to the effect of entry capital on bank performance in the profit models. The rise in entry capital has a positive but statistically insignificant relationship with RoA model. This has been due to the opportunity from a capital increase in creating reliable liquidity standing for banks. With such a setting, the fund collected from the market in the form of deposits can be optimally utilised to support the lending businesses that deliver positively to both asset growth and the income thereof. Sharing the aforesaid justifications, the net interest margin has established a positive and statistically insignificant relationship with entry capital requirement. Nevertheless, entry capital growth has negatively and significantly related to the return from invested capital.

Another policy direction determining future growth direction of banks, growth in branch network (BRG), surprisingly resulted in negative relationship in all models. The relationship, however, is much stronger in the profit models and statistically insignificant in the price

model. The current circular from the NBE that follows the issuance of the growth and transformation plan of the country has placed branch expansion as an important requirement to be fulfilled by banks to ensure growth of the sector and ensure accessibility. Nevertheless, the study finds that excessive branch expansion could result in negative performances in both profitability and net interest margin. This is because branch expansion impacts the banks expense demanding for huge establishment cost and branch running costs in terms of rent and staff employment. In addition, branch opening has pressure on bank management through directing their attention towards control of large branch networks and monitor branches performances through creating good intermediation capacity and managing problem assets. Nevertheless, despite the aforesaid negative effect, the current move of the industry due to a push from the regulator has been towards expansion. This needs to be one of the policy focus area requiring amendment from the regulatory side in order to ameliorate the pressure from excessive expansion on banks' profitability performances.

The number of entrants to the banking system has a positive association with bank performances. The banking industry in Ethiopia seems excessively protected not only from foreign competition, but also from entry of local banks. Such a regulatory framework is expected to benefit the already existing banks through lowering the level of competition in the market. Nevertheless, the unexpected result of a better performance in times when there were large numbers of entrants into the system associates with the underdevelopment in banking system. In addition, the large unbanked population that created a large demand for banking services has offered an advantage for banks to liberally expand their businesses. Nevertheless, the negative association of bank entry with price model shows that new banks have been placing pressure on the pricing mechanism of the system. The statistically insignificant relationship is the result of banks limited move to engage in price related competition. In all models, the relationship has been statistically insignificant.

A critical policy direction to involve banks in national development endeavour, Bill purchase (BILL) has a negative and statistically significant impact on all performance models. The bill purchased by the private banking system stood more than Birr 14 billion during 2015. The amount is large and also affects the effective interest rate attached with the bill, i.e., 3% that seems lower than the minimum interest rate required to be paid for saving and fixed time deposits (5%) which is equivalent to the cost of fund of private banks (Lelissa, 2014). Therefore, banks have been lending the government with negative or nil benefit. One of the worrying issue in such regard is that exposure to bill purchase is growing at significant rate due to its base of computation on the gross new loan disbursements. This has exposed the private banking system to hold a bill balance higher than the requirement (27%) of loan disbursement. The swift growth path has been diminishing the share of high earning assets of such loan to customers placing a downward pressure not only on profit, but also on the yield from intermediation activity. The recent move from the regulator to raise the deposit rate to 7% also creates a wider gap against the 3% interest rate attached to bill purchases.

Robustness Tests

As shown in the regression result, the explanatory power of the models is much strong in profit than price models. Therefore, regulatory variables by and large established a relationship with profit performance measures than price measures.

Summary

The study has explored the impact of selected regulatory variables on performances applying a panel regression on 18 commercial banks in Ethiopia for the period 1999-2015. The variables used in the model are directly derived from the extant regulatory approach used by the central bank to regulate the banking business. The literature review also shows that most of them are enacted in other countries with few exceptions and mainly related to bill purchase requirements. The model constructed, therefore, has established and finds a statistically significant relationship in some of the regulatory variables with performance measures. Nevertheless, many of the variables used such as interest rate, reserve, etc., are not statistically significant to determine bank performances. The most important findings of this part of the thesis relate to the negative impact of some of the recent policy directions from the regulator on performances. For instance, branch growth and bill purchases are statistically significant with negative relationship on bank performances. This should be one of the areas requiring policy flexing from the regulatory side in the future. Nevertheless, other policy

direction such as capital growth requirement remains a positive contributor to performances. More specifically, the study finds that exchange rate has positive and significant relationship with the profit models. Despite the benefit of a depreciating local currency and a stable foreign currency type to shield them from currency fluctuation, it allowed banks to earn a 'policy profit'. The depreciation of Birr permitted banks to enjoy a profit from their foreign currency holdings in the form of daily asset revaluations. The policy direction of the NBE that has a bearing on the future growth direction of banks, growth in branch network (BRG), surprisingly resulted in negative relationship in all models. The relationship, however, is much stronger in the profit models and is statistically insignificant in the price model. The quantitative study also points that the critical policy direction to involve banks in national development endeavour, Bill purchase (BILL), has a negative and statistically significant impact on all performance models. The impact is reflected on the reduction in the earning rate from the investment, drawing down the resources of banks, and ensuring unfair competition, etc. The prospect of the impact is also indicated to be severe in the long term following additional policy measures attached to bill purchase which further increases the exposure of bank. Nevertheless, many of the variables (prudential regulatory variables) used in this study (interest rate, reserve rate, number of new entrant banks, and level of entry capital) are not statistically significant to influence on bank performances. This mainly relates to the reduced rate, the price control, and limited entry of banks to the system on the one side and due to their basic motive of issuance, ensuring prudence in the sector.

References

Allen, F., & Gale, D. (2004). Competition and financial stability. *Journal of Money, Credit, and Banking, 36*(3), 433-480.

Amidu, M. (2013). The effects of the structure of banking market and funding strategy on risk and return. *Int Rev Financ Anal, 28,* 143-155.

Bandt, O., & Davis, E. (2000). Competition, contestability and market structure in European banking sectors on the Eve of EMU. *Journal of Banking and Finance, 24,* 1045-66.

Barth, J., Caprio, G., & Levine, R. (2001). The regulation and supervision of banks around the world, A new Database, in Litan, R., and Herring, R., eds, Brookings-Wharton Papers on Financial Services.

Berger, A., & Humphrey, D. (1997). Efficiency of financial institutions, international survey and directions for future research. *European Journal of Operational Research, 98,* 175-212.

Bezabeh, A., & Desta A. (2014). Banking sector reform in Ethiopia. *International Journal of Business and Commerce, 3*(8), 25-38.

Casu, B., & Molyneux, P. (2003). A comparative study of efficiency in European banking. *Applied Economics, 35,* 1865-1876.

Casu, B., Cirardone, C., & Molyneus, P. (2006). Productivity change in European banking: a comparison of parametric and non-parametric approaches. *Journal of Banking and Finance, 28*(10), 2521-2540.

Cerasi, V., Chizzolini, B., & Ivaldi, M. (2002). Branching and competition in the European banking industry. *Applied Economics, 34*(17), 2213-2225.

Claessens, S., & Laeven, l. (2004). What drives banking competition? Some International Evidence. *Journal of Money Credit and Banking, 36*(3), 563-583.

Claessens, S., Demirguc-Kunt, A., & Huizinga, H. (2001). How does foreign entry affect domestic banking markets? *Journal of Banking and Finance, 25*(5), 891-911.

Das, A., & Ghosh, S. (2006). Financial deregulation and efficiency: An empirical analysis of Indian banks during the post reform period. *Review of Financial Economics, 15*(3), 193-221.

Demirgüç-Kunt, A., Laeven, L., & Levine, R. (2003). Regulations, market structure, institutions, and the cost of financial intermediation. *Journal of Money, Credit and Banking, 36*(3), 593-622.

Deribie, E. (2012). The effects of post 1991 era financial sector deregulations in Ethiopia: An inspirational guide for agribusiness. *Research Journal of Agricultural Science and Review, 1*(4), 81-87.

Dewatripont, M., & Tirole, J. (1994b). *The prudential regulation of banks*. Cambridge, MA: MIT Press.

Evanoff, D., & Fortier, D. (1988). Re-evaluation of the structure-conduct-performance paradigm in banking. *Journal of Financial Services Research, 1*(3), 277-294.

Foreign exchange surrender requirements of commercial banks directive no. FXD/50/2017.

Fosu, S. (2013). Banking competition in Africa: Subregional comparative studies, Working paper: 12/13, University of Leicester, UK.

Geda, A. (2006). The Structure and Performance of Ethiopia's Financial Sector in the Pre- and Post-Reform Period with a Special Focus on Banking UNU-WIDER, Research Paper No. 2006/112, united nations university.

Gilbert, R. (1984). Bank market structure and competition: A survey. *Journal of Money, Credit and Banking, 16,* 617-45.

Hicks, J. (1935).The theory of monopoly. *Econometrica, 3,* 1-20.

IMF. (2007). World Economic and Financial Surveys REO Regional Economic Outlook Sub-Saharan Africa: online resource, https://www.imf.org/external/pubs/ft/reo/2007/AFR/ENG/sreo0407.pdf accessed on 12 January, 2016.

Interest rate directive no.NBE/INT/12/2017.

Jalilian, H., Kirkpatrick, C., & Parker, D. (2007). The impact of regulation in developing countries, a cross sectional analysis. *World Development, 35*(1), 87-103.

Keeley, M. C. (1990) Deposit insurance, risk and market power in banking. *American Economic Review, 80,* 1183-200.

La Porta, R., Lopez-de-Silanes, F., & Shleifer, A. (2002). Government ownership of banks. *Journal of Finance, 57,* 265-301.

Lelissa, T. (2007). The Impact of Financial Liberalization on the Ownership, Market Structure and Performance of the Ethiopian Banking Industry (Masters Thesis, Addis Ababa University).

Licensing of Banking and Supervision of Banks and Insurance Companies Proclamation (No. 84/1994)

Lipczynski, J., Wilson, J., & Goddard, J. (2013). *Industrial organization, competition, strategy, policy* (2nd ed.). FT Prentice Hall, London.

MOFED, Ministry of Finance and Economic Development, Macro-economic report of various period.

Molyneux, P., & Forbes, W. (1995). Market structure and performance in European banking. *Applied Economics, 27,* 155-159.

Molyneux, P., & Thorton, J. (1992). Determinants of European bank profitability, A note. *Journal of Banking and Finance, 16,* 1173-1178.

National Bank of Ethiopia Annual, report of various times accessed at www.nbe.gov.et

NBE Directive No. MFA / NBE BILLS / 001 / 2011.

Neuberger, D. (1997). Structure, Conduct and Performance in Banking Markets. Thuenen-Series of Applied Economic Theory 12. University of Rostock, Institute of Economics, Germany.

Salas, V., & Saurina, J. (2003). Deregulation, market power and risk behavior in Spanish banks. *European Economic Review, 47*, 1061-1075.

Semu, Z. (2010). Impact of reducing loan by Ethiopian banks on their own performance, Master's Thesis, University of South Africa. Unpublished.

Shleifer, A., & Vishny, R. (1998). A survey of corporate governance. *Journal of Finance, 52*(2), 737-783.