

An Econometric Approach to Private Sector Credit in Lesotho

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ABSTRACT

This research paper investigates the effect of various factors on the supply of credit to the private sector in Lesotho. It employs an autoregressive distributed lag cointegration approach using quarterly time series data for the period 2005 to 2014. There are numerous research papers that have examined the determinants of private sector credit, but they are primarily of a cross-country nature and are prone to distortionary concerns. The empirical results of this study for Lesotho, both short and long-run, indicate a significant positive relationship between the supply of credit to the private sector and bank deposits. In contrast, commercial bank net foreign assets and interest rates are significant and negative on the supply of credit; non-performing loans are insignificant in affecting credit to the private sector. Given the importance of private sector credit, it is recommended that there be expedited implementation of the Financial Sector Development Strategy's objectives. The strategy of the Central Bank of Lesotho should be to build on previous policy initiatives to establish the necessary preconditions for expanding access to finance.

Keywords: Credit, private sector, Lesotho, cointegration, error correction

I. Introduction

Over the years, there have been a myriad of papers investigating various aspects of financial intermediation. Beck *et al.* (2008) concluded that there is a widespread understanding amongst policy makers in governmental and international aid organizations that firms which operate in developing countries have challenges in accessing external finance because of market imperfections. It is for this reason that informal finance as well as development banks are set up to provide loans to cash strapped firms operating in developing countries. By the same token, Égert *et al.* (2006) posited that financial systems in transition economies are characterized as being predominantly bank based with about 85% of the financial sector's assets being bank assets with little or no capital market development; particularly, corporate bond and stock market segments. This implies that in transition economies, commercial bank credit plays the role of being the main source of external financing alongside foreign direct investment (FDI).

Abuka and Egesa (2007) pointed out that the main disadvantage of small financial systems such as those in transition economies is that they fail to realize economic gains that come in the form of reduced costs from the exploitation of economies of scale. The opposite is true for developed economies where firms highly rely on equity finance. According to Chakraborty and Ray (2006), for countries with better developed financial systems, agency problems are resolved and firms have an opportunity to borrow at cheaper rates and can subsequently invest more. In addition, well developed financial systems afford developing countries the benefit of being able to transition from the traditional agrarian sector to modern industrial activities by mobilizing funds for large investments. In light of this, Levine (1997) and Levine (2002) advocated for the complementary utilization of bank based and market based financial systems as they both have the potential to make for a

greater degree of efficiency in the dispensation of financial services.

Chakraborty and Ray (2006) together with Mamman and Hashim (2013) shared the same sentiments and concluded that it is important that both bank based systems and market based systems be well developed in order to raise a country's economic growth rate and reduce the size of the traditional sector coupled with the cost of intermediated finance. An added benefit comes in the form of more credit being channelled towards the private sector; which according to Molapo and Damane (2015) is traditionally a much more efficient sector of the economy. The same point is echoed by Mamman and Hashim (2013), who asserted that private sector involvement in economic activities especially those of the real sector are important to any economy as this leads to the production and distribution of tangible goods and services that satisfy an economy's aggregate demand as well as providing a measure of the effectiveness of macroeconomic policies. By the same token, Campello *et al.* (2010) noted that during the credit crisis of 2008, credit-constrained firms were less likely to expand employment, invest in technology, or spend on marketing.

It would therefore not be an exaggeration to conclude that credit is the bedrock upon which businesses are formed, jobs are created, the economy grows and the overall well-being of the citizens of a country is enhanced. Calza *et al.* (2001) concurred and indicated that information on credit and credit allocation is essential in the forecast and analysis of economic activity, prices, and monetary developments. It is encouraging to note that the Lesotho government, through the National Strategic Development Plan (NSDP), Government of Lesotho (2012) has identified the financial sector as the nexus through which the country can achieve high levels of economic growth and employment creation by providing secure means of saving and investment. It is for this reason that the NSDP advocates for greater financial inclusion and access to credit while espousing the need for financial sector reforms crucial in alleviating

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bottlenecks in credit dispensation and ultimately unlocking the financial sector's ability to support economic growth. This point is particularly strongly captured in the Central Bank of Lesotho's (CBL) Financial Sector Development Strategy (FSDS) which was developed in conjunction with the International Monetary Fund (IMF) and the World Bank through the Financial Sector Reform and Strengthening (FIRST) initiative. It is therefore imperative that an expeditious and exhaustive implementation of the FSDS be made priority.

This study acknowledges that there are other papers such as Rioja and Valev (2004), Sacerdoti (2005), Djankov *et al.* (2007) and Mbulawa (2015) that present conclusions of investigative work on the determinants of private sector credit, the relationship between financial system development and economic growth as well as the identification of bottlenecks to credit extension in developing countries, including Lesotho. While these studies are insightful, they are predominantly of a cross-country nature and are prone to distortionary problems of heterodoxy between sample countries. Moreover, there is very little research undertaken on the determinants of credit as they relate to Lesotho specifically. As a result, this study contributes to the empirical literature by analysing private investment in Lesotho through the use of time series quarterly data covering the period 2005-2014.

The paper proceeds as follows: Section 2 reviews the relevant literature on private credit; section 3 describes the structure of Lesotho's financial sector and a brief overview of credit patterns; section 4 presents the analytical framework; section 5 relates the empirical results; and lastly, section 6 summarizes this study's findings as well as suggests some policy recommendations.

II. Literature Review

According to Felicia (2011) and Ewert *et al.* (2000) credit market theory, which is based on neoclassical economics, asserts that the terms of credit clear the market. Expounded, this means that given that collateral and other restrictions (covenants) remain constant, the rate of interest acts as the sole price

mechanism such that if a given supply of credit is met with an increase in the demand for credit, this will lead to an increase in the price of credit. At this point, the element of risk, failure to pay back the loan, has not been added to the model. In the case where risk is factored in, it will affect the level of pricing such that the higher the failure risks of the borrower, the higher the interest rate premium.

Loan pricing theory asserts that banks cannot forecast the borrower type at the start of a banking relationship, they have to take into consideration problems of adverse selection and moral hazard that could arise when pricing their loans. Felicia (2011) noted that banks cannot bluntly pursue maximum interest income loan pricing activities since interest rates that are too high could lead to adverse selection problems. Specifically, high risk borrowers would be willing to accept the high interest rates and motivate moral hazard behaviour from them taking on highly risky projects or investments.

Turning to the empirical literature, Hofmann (2001), Calza *et al.* (2001), Kiss *et al.* (2006), Égert *et al.* (2006) as well as Eller and Frömmel (2010), concluded that studies investigating the demand for credit often incorporate an economic activity variable such as real gross domestic product (GDP) or industrial production as well as financing costs in the form of short and long run real interest rates as explanatory variables. Real GDP is important since economic conditions and prospects filter down to affect firms' cash flow position and households' income to subsequently influence consumption and investment demand and therefore the demand for credit. Interestingly, some studies argue the existence of a negative relationship between credit and GDP growth. Kiss *et al.* (2006) concurred and pointed out that as firm profits increase, firms could rely more on internal funds and decrease credit demand.

Égert *et al.* (2006) coupled with Eller and Frömmel (2010) pointed out that other drivers in determining the demand for credit by the private sector may include purchasing power parity (PPP) per capita in the place of real GDP, bank credit to the

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government, inflation, home prices, financial sector liberalization alongside public and private credit registries as well as other interest rates such as the nominal lending interest rate. Hofmann (2001) indicated that in certain cases for some of the identified variables, for example, real GDP, inflation and the interest rate variables, it is often challenging to separate whether they influence the demand or the supply of credit. Consider the case of a contraction in economic activity, this may have a negative impact on firm and household ability to repay their debts and in turn may also affect banks' willingness to extend credit. Moreover, in instances of a tighter monetary policy stance by the central bank, the increase in interest rates may lead to banks cutting back their credit supply. With this caveat in mind, it is important to note that this paper only confines itself to an investigation into factors affecting the supply for private sector credit in Lesotho.

Spurred on by evidence of fast paced growth in private sector lending within Central, Eastern and South-eastern European countries (CESEE) and concerns over potential excessiveness of credit expansion, Égert *et al.* (2006) investigated the relationship between the level of private sector credit to GDP and its determinants as well as the equilibrium level of private sector credit-to-GDP ratio in eleven transition economies within the CESEE region. They used regression analysis to regress bank credit to the private sector as a share of GDP on GDP per capita in terms of purchasing power standards, bank credit to the government sector as a percentage of GDP, short-term and long-term nominal lending interest rates, inflation, home prices, the degree of liberalization of the financial sector, and lastly public and private credit registries. The study concluded that bank credit to the government sector, nominal interest rates, the inflation rate, and financial liberalization are the most important determinants of credit growth.

Kiss *et al.* (2006) were interested in understanding factors that were driving the rapid rise in credit to the private sector in Central and Eastern European countries from 1980 to 2003 and whether this occurrence was in line with equilibrium convergence or whether it would pose a stability risk. The study used panel econometric techniques to identify the equilibrium credit to GDP ratio levels of the new European Union (EU) countries. Using an error-correction framework, estimation of the model was done using the pooled mean group (PMG) estimators to obtain the long run relationship between credit and its determinants. The major determinants of credit were found to be PPP-based GDP per capita, real interest rate, and inflation. The study found a positive relationship between credit to GDP ratio and PPP-based GDP per capita, and a negative relationship between credit to GDP ratio, real interest rates and inflation, respectively.

Hofmann (2001) modelled the determinants of private sector credit as a function of economic activity, interest rates and property prices for a sample of sixteen industrialised countries from 1980 to 1998 using quarterly data. The study made use of real GDP as a proxy measure for real economic activity and short-term interest rates were used to proxy the real financing costs of supplying credit. The research used a cointegrating vector autoregressive (VAR) model and concluded that in the long run, the development of credit cannot be explained by real GDP and the real interest rate. However, once real property prices are introduced into the model the results exhibit a positive relationship between the demand for credit, real GDP and real property prices coupled with a negative relationship between credit demand and the real interest rate.

Calza *et al.* (2001) presented an econometric investigation into the determinants of loans to the private sector in the euro area over the period 1980 to 1999 by using the Johansen approach. The analysis utilised general economic activity, represented by real GDP, and the cost of loans, proxied by short term market rates and long term bond yield rates, as explanatory

variables. They concluded that in the long run, real loans are positively related to real GDP and negatively related to real short-term and long-term interest rates. The paper modelled the short-run dynamics of the demand for credit in the euro area by employing the use of a vector error correction model (VECM) and found satisfactory results.

III. The Structure of Lesotho's Financial Sector

Table 1 presents the structure of Lesotho's financial corporations sector as of the end of 2010. From the table, the country's financial sector had total assets of M14 billion of which 60.16% were accounted for by 55 Other Depository Corporations (ODCs) while the remaining 30.84% emanated from a total of 395 Other Financial Corporations (OFCs). Interestingly, 56.68% of the 60.16% of ODCs' total assets came from the country's four commercial banks. This emboldens the postulation that in less developed financial markets, the bulk of financial intermediation services are bank based.

Fast forward to 2013, on average all loans extended by the financial sector amounted to M3,5 billion (all of which were extended solely to the private sector as none were extended to the government) out of which non-performing loans (NPLs) were M109 million for the same year. This means that the financial sector was considerably healthy during this review period as the average ratio of NPLs to total loans was approximately 3% and was completely covered by provisions. At the end of 2013, broad money as a percentage of gross domestic product (GDP) was 66%. Assefa (2014) warns against high levels of broad money as a ratio of GDP as this can cause inflation which in turn can lead to a reluctance of banks to lend in the long term. On the same token, Lesotho's average loan to deposit ratio in 2013 was approximately 62.6%, up from an average of 52.4% the previous year. What is, however, of concern is that in 2013 an average of 39% of total credit was allocated to private business enterprises while the remainder was

Table 1. Structure of the Financial Sector in Lesotho in 2010

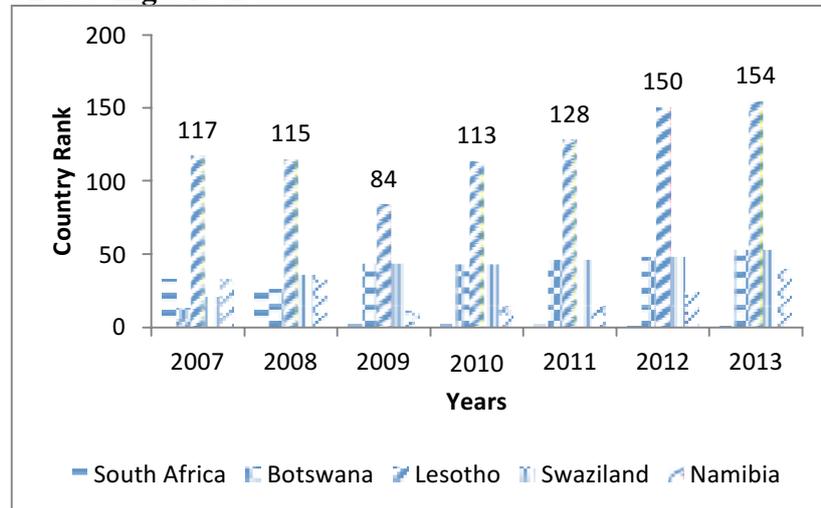
Type	Number	Assets (Millions of Maloti)	Per cent in total
Financial Corporations Sector (except Central Bank of Lesotho - CBL)	450	14,131.1	100.00
1. Other Depository Corporations	55	8,500.8	60.16
Commercial Banks (Including Post Bank)	4	8,010.0	56.68
a) State-owned commercial banks	1	274	1.94
b) Foreign-owned banks	3	7,736.0	54.74
Financial Cooperatives	51	62.5	0.44
Collective Investment Schemes - Money market funds	2	428.3	3030
2. Other Financial Corporations	395	5,630.3	39.84
Insurance companies	8	2,408	17.04
Registered money lenders	56	72.7	0.51
Credit only institutions	1	3.0	0.02
Pension funds	102	2,376.6	16.82
Collective investment schemes- other	4	747.0	5.29
Asset management companies	2	23.0	0.16
Exchange bureaus	2	-	-
Money transfer companies	2	-	-
Insurance brokers and agents	219	-	-
Source: Central Bank of Lesotho (Based on information from the Central Bank of Lesotho and Cooperatives Department under the Ministry of Trade and Industry.)			

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distributed to households, with a larger portion of that being personal loans.

This signals that much needs to be done by way of institutional reforms to better improve the ease of getting credit to private business enterprises as it is essential for productive investments and thus economic growth in the country. On that note, one of the six goals of Lesotho's NSDP is to achieve high, sustainable and private sector led economic growth. In order for this to happen, Lesotho's relatively small and underdeveloped financial system has to remove the relevant constraints, increase access to financial services while exploring feasible alternatives for mobilizing financial resources through the development of money and capital markets. From Figure 1, Lesotho has performed the worst out of its Southern African Customs Union (SACU) counterparts as far as the ease of getting credit indicator as per the World Bank *Doing Business* reports from 2007 to 2013.

Figure 1. How Lesotho and Comparator Economies Rank on Getting Credit



Source: World Bank Doing Business Reports, Annual Reports, 2007-2013.

IV. Model Specification

In order to examine the determinants of private sector credit in Lesotho this study uses quarterly time series data for the period 2005-2014. The data have been obtained from two sources: the Central Bank of Lesotho (CBL) monetary and financial statistics (MFS) database and the IMF database. Just as Hofmann (2001) and Calza *et al.* (2001) did, this study employs the following specification for modelling the supply of credit in Lesotho:

$$CPS_t = F (DEP_t, NFA_t, NPL_t, R_t) \quad (1)$$

Where CPS , DEP , NFA , NPL and R represent the various components of real credit to the private sector; real total bank deposits, real commercial banks foreign assets, real non-performing loans, and real prime lending interest rates, respectively.

In order to investigate the relationship between the supply of private sector credit and its determinants, the study employs the ARDL generic model with the following form:

$$\begin{aligned} \Delta \ln CPS_t = & \alpha_0 + \beta_1 \ln CPS_{t-1} + \beta_2 DEP_{t-1} + \beta_3 \ln NFA_{t-1} \\ & + \beta_4 \ln NPL_{t-1} + \beta_5 \ln R_{t-1} + \sum_{i=1}^p \pi_1 \Delta \ln CPS_{t-i} \\ & + \sum_{i=1}^p \pi_2 \Delta DEP_{t-i} + \sum_{i=1}^p \pi_3 \Delta \ln NFA_{t-i} \\ & + \sum_{i=1}^p \pi_4 \Delta \ln NPL_{t-i} + \sum_{i=1}^p \pi_5 \Delta \ln R_{t-i} + \theta W + \varepsilon_t \end{aligned} \quad (2)$$

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Where t is the time period, β_1, \dots, β_5 are the coefficients representing the elasticities of the explanatory variables in the long run and π_1, \dots, π_5 are the coefficients relating the elasticities of the explanatory variables in the short run. \ln are natural logarithms in order to have more reliable and unbiased results. The variables used in the model specified above and their *ex ante* signs are described and summarised in Table 2.

Table 2. Data Series, Sources and Expected Sign

Variable	Descriptor	Database/Source	Ex Ante Sign
<i>CPS</i>	Real Credit to Private Sector	IMF	
<i>DEP</i>	Real Total Bank Deposits	IMF	Positive
<i>NFA</i>	Real Bank Net Foreign Asset	Central Bank of Lesotho	Negative
<i>NPL</i>	Real Non-performing Loans	Central Bank of Lesotho	Negative
<i>R</i>	Real Prime lending rate	Central Bank of Lesotho	Negative

Felicia (2011), Sharma and Gounder (2012) as well as Imran and Nishat (2013) indicated that there is a positive and statistically significant relationship between commercial bank deposits and commercial bank lending. This means that an increase in the size of bank deposit liabilities will translate into a greater willingness to provide credit since bank's liquidity will have also increased. Felicia (2011) alongside Sharma and Gounder (2012) also concluded that there exists a positive and statistically significant relationship between bank credit and a bank's investment portfolio. This means that an increase in the

size of bank's foreign assets is expected to lead to an increase in its willingness to lend. On the other hand, a negative relationship between commercial bank excess liquidity and credit extension can exist. Agénor *et al.* (2004) explained that this can arise if banks are unwilling to lend due to perceived increases in the risk of default that cannot be internalized by raising the costs of borrowing. When the opportunity cost of holding idle funds is considered, it therefore would serve the banks more profitably to hold interest bearing foreign assets.

According to Cucinelli (2015) non-performing loans (NPL) measure a bank's credit risk whose determinants are found across two categories. Specifically, bank specific determinants, size, capitalization, funding level and efficiency, and macroeconomic determinants, GDP, inflation rate, unemployment, and interest rates. There is no outright consensus on the impact of NPL on bank lending. Borio *et al.* (2001) and Jimenez *et al.* (2012) concluded that bank lending is procyclical such that banks lend more in good economic times when the size of the NPL is low since firms can easily pay back the loans. The opposite is true in bad economic times. This suggests that there exists a negative relationship between NPL growth and bank lending. Lu *et al.* (2005) conversely found that banks are highly likely to lend to state owned firms even if such institutional agents present a high credit risk. Sharma and Gounder (2012) concluded that there is a negative and highly significant correlation between bank credit to the private sector and the bank lending rate. This means that an increase in bank lending rates is likely to cause a decline in bank credit to the private sector. A significant relationship between bank lending rates and bank credit is consistent with the loan pricing theory.

This study employs the bounds testing approach to cointegration developed by Pesaran and Shin (1999) and extended by Pesaran *et al.* (2001) within the autoregressive distributed lag (ARDL) framework to investigate the supply of private sector credit in Lesotho as specified in equation 1. The ARDL framework has a number of advantages over other

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estimation techniques. First, it does not matter whether the series are integrated of order one I(1) or the series are not integrated I(0) or whether they are mutually integrated; in addition, contrary to simple VAR and single equation models, the number of variables in ARDL can be large.

To test for the long-run relationship between private sector credit and its determinants in Lesotho using bounds testing, a joint significance test for $H_0: \beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$ against the alternative hypothesis of $H_1: \beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq 0$ is performed. The test is based on Wald-test (F -statistics); the asymptotic critical values for the test were supplied by Pesaran *et al.* (2001). To confirm that cointegration exists, the F -statistics from joint test of significance should be greater than asymptotic critical values from Pesaran for upper bounds and lower bounds, otherwise there is no cointegration. The bounds test approach enables examination of both short-run and long run dynamics following ARDL model estimated of equation 2. The long-run model is formulated as follows:

$$\begin{aligned} \Delta \ln CPS_t = & \alpha_0 + \beta_1 \ln CPS_{t-1} + \beta_2 DEP_{t-1} + \beta_3 \ln NFA_{t-1} \\ & + \beta_4 \ln NPL_{t-1} + \beta_5 \ln R_{t-1} + \varepsilon_t \end{aligned} \quad (3)$$

The ARDL specification of the short-run dynamics was derived by formulating an error correction model in the following form:

$$\begin{aligned} \Delta \ln CPS_t = & \beta_0 + \sum_{i=1}^p \pi_1 \Delta \ln CPS_{t-i} + \sum_{i=1}^p \pi_2 \Delta DEP_{t-i} \\ & + \sum_{i=1}^p \pi_3 \Delta \ln NFA_{t-i} + \sum_{i=1}^p \pi_4 \Delta \ln NPL_{t-i} \\ & + \sum_{i=1}^p \pi_5 \Delta \ln R_{t-i} + \theta W + \varepsilon_t \end{aligned} \quad (4)$$

To ascertain the order of integration of the variables, the study uses two unit root tests: Augmented Dickey Fuller (ADF) test by Dickey and Fuller (1979), complemented by Phillips-Perron (PP) test by Phillips and Perron (1988). To decide on the number of lags in unit root testing the lowest Akaike Information Criterion (AIC) complemented by Schwartz Bayesian Criterion (SBC) are used for a better fit.

V. The Empirical Results

It can be seen from Table 3 that the unit root test results using the ADF unit root test and PP test suggest that all series are I(1) at the 1% level of significance, for they become stationary after being differenced once. Therefore, the bounds testing approach to cointegration can be used.

Table 3. ADF and PP Unit Root Test Results

Variable	H ₀ : Non-stationary in levels		H ₀ : Non-stationary in first differences	
	ADF Statistic	PP Statistic	ADF Statistic	PP Statistic
<i>CPS</i>	-1.295	-1.535	-5.875***	-5.910***
<i>DEP</i>	-1.933	-1.645	-8.362***	-8.642***
<i>NFA</i>	-2.066	-1.975	-7.826***	-7.807***
<i>NPL</i>	-0.688	-0.823	-10.08***	-11.38***
<i>R</i>	-1.393	-1.142	-3.667***	-3.652***

Note: The asterisks ***, ** and * denote significance level at 1%, 5%, and 10%, respectively for the *ADF* and *PP* test of unit root. The null hypothesis is that the series are non-stationary.

To implement the bounds testing approach to cointegration, equation 2 is estimated in an ARDL specification. The lag order of the estimated selected model is ARDL (1, 1, 1, 0, 0). The

results show that the null hypothesis of no cointegration is rejected because the calculated F -statistic from the Wald-test exceeds the upper bound critical values at the 1% level of statistical significance. The asymptotic critical values for the test supplied by Pesaran *et al.* (2001) were found to be inappropriate for this study because the sample size is not appropriate. As a result, the critical values were taken from Narayan (2005) at the case of restricted intercept and no trend.

Table 4. Cointegration Test Results

Bound test for cointegration					
Critical value bounds of the F -statistic: intercept and no trend					
90 per cent level		95 per cent level		99 per cent level	
I(0)	I(1)	I(0)	I(1)	I(0)	I(1)
2.306	3.353	2.734	3.920	3.657	5.256
F -Statistics: 12.84827					
Sample size: 39					
K is the number of regressors: 5					

Since all variables are found to be cointegrated at the 1% level of significance, the long-run model is estimated using equation 3. The results are presented in Table 5 along with the corresponding diagnostic tests. To find out how well the model fits a set of observations, the R^2 indicates that 87.7% of the variation in private sector credit is explained within the model. The Jarque Bera (JB) test for normality and the Breusch-Pagan-Godfrey (BPG) heteroskedasticity confirm that the errors are white noise. In addition, the null hypothesis of the coefficients not being statistically different from zero is rejected by the Wald test.

Table 5. Estimated Long-Run Model

Variable	Coefficient	<i>t</i> -statistic
<i>LDEP</i>	2.363979	5.948821***
<i>LNFA</i>	-0.904699	-5.244971***
<i>LNPL</i>	-0.058187	-0.565446
<i>R</i>	-0.026883	-1.752976*
<i>D06_4</i>	0.832903	2.749991**
<i>D10_2</i>	0.377984	2.271977**
<i>D08_1</i>	-0.430403	-2.516627**
<i>C</i>	-2.956227	-2.422953**
Diagnostics Tests		
$R^2 = 0.863379$ $Adj R^2 = 0.843862$ $DW = 2.471487$ Jarque-Bera Test = [0.484202] (0784974) Wald Test = [44.23664] (0.0000) Breusch-Godfrey LM Test = [2.810863] (0.0785) Breusch-Pagan-Godfrey Test = [1.182296] (0.3401)		
Note: Values in brackets are <i>F</i> -statistics, values in parentheses are <i>p</i> -values. The asterisks ***, ** and * denote significance level at 1%, 5%, and 10%, respectively.		

The role of credit is to bridge the gap between enterprise owner's financial assets and the required financial assets of the enterprise. Due to persistence of this imbalance, enterprises are forced to demand credit. There is also an imbalance between the supply and demand for credit in many economies. The above results show a strong positive and significant correlation between the supply of credit to the private sector and bank deposits, as expected in the long-run. This is consistent with the findings of Tan (2012), and forms a pool of resources for commercial banks for offering credit; a decrease in bank deposits reduces credit to the private sector. However, in the long-run, the

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increase in commercial bank NFA discourages the supply of credit in Lesotho. This points to a negative relationship between commercial bank excess liquidity and credit extension. A similar finding was made by Agénor *et al.* (2004) who explained that when perceived upside risks of default on loans cannot be internalized by raising the costs of borrowing, commercial banks are often unwilling to lend and will rather opt to increase their holdings of interest bearing foreign assets. To add credence to this point, the Central bank of Lesotho (2012) outlined that the country's commercial banks are highly liquid and hold large portfolios of interest bearing financial instruments in South Africa. This negatively affects the credit to liquidity ratio.

This study also finds that the suppliers of credit in Lesotho do not consider non-performing loans in their decisions to allocate credit in the long-run. The supply of credit also responds negatively to an increase in interest rates; this is consistent with the presense of the loan pricing theory in Lesotho. This finding is similar to those of Gartner and Sousa (2001), Hofmann (2001) and Kiss *et al.* (2006). The dummy variables for quarter 4 of 2006 and quarter 2 of 2010 respectively are positively affecting credit supply in Lesotho in the long-run. These dummy variables are respectively representative of an enactment of the Legal Capacity of Married Persons Act 2006 and Land Act 2010. However, the dummy variable representing the 2008 economic and financial crisis negatively affects credit supply in Lesotho in the long-run.

The short-run analysis is given in table 6, where the estimated error correction model (ECM) for the private sector and its associative diagnostic tests are presented following estimating equation 4. The corresponding sign of the error correction term (ECT) is negative and significant. This means that there is long run causality running from the independent variables to the dependent variable. The negative sign of ECT indicates a move back towards equilibrium following a shock to the system in the preivous quarter. Similar to the results under the estimated long-

run model, NPL does not significantly affect credit in the short-run in Lesotho. In addition, the supply of credit in the short-run is positively influenced by bank deposits and dummies for 2006 and 2010. The supply of credit is however, negatively influenced by NFA, interest rates, and the 2008 financial crisis. According to the Wald test, the coefficients are statistically different from zero. The Breusch-Pagan-Godfrey (BPG) test confirms that there is no heteroscedasticity.

Table 6. Error Correction Model

Variable	Coefficient	<i>t</i> -statistic
<i>D(LDEP)</i>	0.508071	4.101085***
<i>D(LNFA)</i>	-0.228924	-3.809753***
<i>D(LNPL)</i>	-0.010700	-0.583130
<i>D(R)</i>	-0.004943	-1.886182*
<i>D(D06_4)</i>	0.153158	5.491961***
<i>D(D10_2)</i>	0.069506	2.627492**
<i>D(D08_1)</i>	-0.079145	-3.233865***
<i>CointEq(-1)</i>	-0.183885	-3.539899***
Diagnostics Tests		
$R^2 = 0.641024$ $Adj R^2 = 0.571990$ $DW = 1.634531$ Jarque-Bera Test = [2.277619] (0.320200) Wald Test = [8.331232] (0.0002) Breusch-Godfrey LM Test = [0.822207] (0.4515) Breusch-Pagan-Godfrey Test = [2.998901] (0.0288)		
Note: Values in brackets are F-statistics, values in parentheses are p-values. The asterisks ***, ** and * denote significance level at 1%, 5%, and 10%, respectively.		

VI. Conclusions, Summary, and Policy Recommendations

This study expanded on the body of research evaluating the effect of factors related to the supply of credit to the private sector with the use of the ARDL cointegration approach employing quarterly time series data from 2005 to 2014 for Lesotho.

Commercial banks remain dominant in the banking system in terms of their shares of total assets and deposit liabilities. The banking system is robust in Lesotho, but access to banking services for households and SMEs remains limited. In meeting this challenge, the Central Bank of Lesotho (2012) outlined that the government of Lesotho's recent policy measures to enact the Legal Capacity of Married Persons Act 2006 and Land Act 2010 have facilitated the recent surge in private sector credit through giving women the right to access credit and the use of land as an economic asset, respectively. Based on the findings of the study, both in the long and short-run, the banking system, is profitable, well-capitalized, and liquid; nonperforming loans (NPLs) are moderate, well provisioned and insignificant. Bank deposits play a highly significant role in the determination of credit to the private sector in Lesotho during the sample period. However, commercial banks have a tendency to lend more towards security backed loans and channelling funds to their NFA significantly. This adversely affects credit to the private sector. The findings are also consistent with the existence of the loan pricing theory.

The FSDS of the Central Bank of Lesotho will build on previous policy initiatives to establish the necessary preconditions for expanding access to finance. Many of the needed initiatives have already been identified and implemented during the sample period, and the benefits from recent reform initiatives are currently becoming evident. To further enhance the financial sector, the FSDS' initiatives span several of the strategic objectives for the financial sector established in the NSDP such as improving access to finance, increasing alternatives for mobilising financial resources, promoting a

savings culture, improving financial sector efficiency, bridging the skills gaps in the financial sector and increasing financial literacy, and improving financial stability and soundness. As a result, the authorities in Lesotho are on track in terms of policy reforms in the financial sector regarding private sector credit, what remains is the intensification and implementation of the NSDP's objectives.

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