

Relation of the Commercial Banks with Economic Growth in Nepal

Suvita Jha

Abstract— This paper investigates the relationship of commercial banking performance with economic growth for the case of Nepal over the period 1975-2010 using Augmented Dickey Fuller (ADF), Ordinary least Square and Granger Causality tests. The regression results indicated that deposits, Loan and advances, Assets have significant positive impact on the economic growth of Nepal. Furthermore, the Granger-Causality test suggests that there exists bidirectional causality with deposit, loan and advances and assets. It can be concluded that commercial banking performance was directly linked with the economic growth and significantly contributed for economical development in Nepal. It is therefore suggested that the national and international strategies should focus on progress of banking industry because it better encourages economic advances in Nepal.

Index Terms— Banking Performance, Nepalese Commercial Banks, Economic Growth, Gross Domestic Product

I. INTRODUCTION

Linking financial sector with economic growth in an economy is a major concern among economists, financial analysts, researchers and policymakers. An extensive number of literatures suggest that financial institutions significantly influence the economic growth of a country [1-4]. Several researches pointed out that financial institution are to be the best indicator of a country's real development potential [5, 6]. In fact, they are regarded as key components of the economic development. Banking industry has much benefit over non-banking markets sector in the developing economies as like of Nepal with weak legal and accounting structures. In this environment, banks can be able to formulate firms disclose information and pay back their debts thereby facilitating spreading out and long-run development [7]. Those countries with a better financial system have a trend to increase its economic growth faster. The literatures suggest different ways of categorize financial system although the classification varies nation to nation. One of the popular ways is to segregate the overall financial system into bank-based and market-based (non-bank) financial system [8]. The bank-based theory emphasizes assets has the positive role of commercial banks in economic development. It has been suggested that banks can finance economic development in early stages, especially when the banks are unhampered by regulatory restrictions. Banks can also help to mobilize resources and reduce risk [9]. Studies examining the relationship between financial sector development and economic growth in Asia include those by Hsu and Lin [10] for Taiwan; Ang [11] for India and Malaysia, Liu and Hsu [12] for Taiwan, Korea and Japan; Perera and Paudal [13] for Sri Lanka; Jalil and Feridum [14] for Pakistan and Anwar and

Nguyen [15] for Vietnam. Hsu and Lin [10] using Taiwanese data for the period 1964-1996, found that both banking and stock market development are positively related to short-run and long-term economic growth. The Nepalese financial system categorized under bank-based system [16]. Nepal has established up comprehensive financial infrastructures such as commercial banks, development banks, finance companies, cooperatives, non-governmental organizations. Among the financial institutions the common resource of supplies funds and the main source of financing to support the national economic performance are commercial banks [17]. Commercial banks are meant to speed up the rate of economic growth and development. In Nepal, the most of the public had neither the funds nor technical ability to invest in stocks and shares. It couples with the fact that they are reluctant to do so because of their preference for quick profits which are readily available or obtainable elsewhere. However other financial institutes also take share to meeting the financial needs of the economy. Commercial banks play an important role in financial sector and accounts for more than 80% of the total assets and liabilities of the financial system [18] and demonstrated a positive relationship with the economic growth of Nepal [17]. In term of economic growth, the annual average real economic growth rate of Nepal remained at around 5% in 1990s and further below at 4% during 2000-2010 [16]. Some previous researches have investigated the impact of financial sector and economic growth of Nepal [16,17]. But there are no any previous study that focused on the subject of commercial banks performance and their impact on Nepalese economic development. The objective of this paper is to investigate the relationship of commercial banking performances with the economic growth, considering the impact of deposit, loan and advances and assets on the Nepalese economic growth.

II. EMERGING COMMERCIAL BANKS IN NEPAL

Nepal is a developing country with an emerging financial system. The financial system, mainly the bank based financial system, experienced a new turn with the introduction of the liberalization in the mid 1980s. With the banking habit expanded, the banks were able to mobilize increased proportion of private savings and direct them for investment in newer forms of the activities. Both the deposits with the banking system and total credit stretched rapidly. The number of the banks and the financial institutions (commercial banks, development banks and finance companies) have been grown from 4 in 1980 to 263 in 2010 [19]. The figure 1 shows the increasing trend of commercial banks. The Nepalese financial system is highly dominated by banking sector, particularly commercial banks. Although the capital market is infant stage of development, the Nepalese banking sector has relatively longer historical foundation, established institutional settings

and relatively better growth and development trends. Until 1984, there were only two public commercial banks namely the Nepal Bank Limited (NBL) and the Rastriya Banijya Bank (RBB) in the country, and the banking system was highly regulated [16]. The banking system is characterized by a number of problems and challenges that need to be suitably addressed for ensuring the strength and vitality of the financial system and fostering its immense role in the economic growth of the country. Likewise in every country the establishment of Nepal Rastra Bank (NRB) in 1956 as the central bank of Nepal reformed regulatory financial sectors are trend to be a banking sector and gave a new dimension to Nepalese financial system [19, 17].

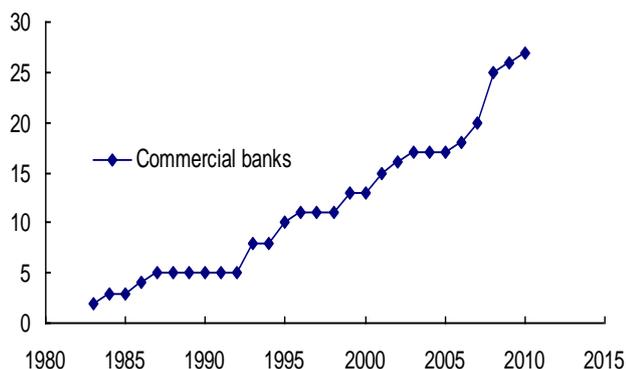


Figure 1. Increasing trend of the commercial banks in Nepal

III. DATA AND METHODOLOGY

3.1 Data and variables: Data of the commercial banks of Nepal for the period 1975 to 2010 were collected from the Nepal Rastra Bank Quarterly Economic Bulletin (published by the Central Bank of Nepal), various issues of Economic Survey of Ministry of Finance. Though there are other financial institutions including development banks, finance companies, saving and credit institutions/cooperatives that provide banking and near banking or limited banking activities, still the share of commercial banks on total financial institutions' assets is more than other financial institutes. Therefore, the commercial banks used in this study might rightly represent Nepalese banking industry. Data on real GDP (at constant prices) used as economic growth. As for the commercial banking performance, three variables- total deposits, total loans and advances and total assets – were used. The commercial banking performance and economic growth were investigated by making use of three different estimation techniques namely Ordinary Least Square method, Unit Root test and Granger Causality test with 36 observations based on the time series data.

3.2 Testing for stationary: Several studies have shown that models with non stationary variables tend to produce spurious regressions and make the usual test statistics unpredictable [20, 21]. Thus it is essential to analysis the stationary of the data before drawn the long run association among the variables. In order to check the variables are stationary or non stationary, this study used the ADF (Augmented Dickey Fuller) test of stationary. In this test null hypothesis means non stationary in the data and alternative hypothesis means stationary in the data.

3.3. Ordinary Least Square method: In formulating model, this study assumes that the GDP (gross domestic product) is a function of deposit (DEP), loan and advances (ADV) and

commercial banks asset. All the variables were measured in log (LN) value. Given the above theoretical considerations, the behavioral equation of the model will be formulated as follows:

$$RGDP = f (DEP, ADV, ASSET)$$

Equation 1 could be written in the following form:

$$\ln(GDP) = \beta_0 + \beta_1 \ln(DEP) + \beta_2 \ln(ADV) + \beta_3 \ln(ASSET) \dots\dots\dots(1)$$

All the independent variables were expected to have a positive impact on economic growth. Within the context of this paper, real GDP per capita was interpreted as economic growth.

This research was based on the following hypothesis that clearly defines the research criterion.

H1 – There is a significant relationship between commercial banks deposit and economic growth.

H2 – There is a significant relationship between commercial banks loan and advances and economic growth.

H3 – There is a significant relationship between commercial banks Asset and economic growth.

3.4. Testing for causality: This study used Granger-Causality test proposed by Granger [22] for testing whether a causal relationship existed among the Real GDP per capita and the deposit, loan and advance and assets. The test involved estimating the regressions for each variable on the other variable past observations. An F test was then applied on the residuals of the regressions, and the values were compared to the tabulated F values. If the computed F value exceeded the critical F value of the chosen level of significance, the null hypothesis was rejected and concluded that a causality relation existed.

All the estimations for Ordinary Least Square, Unit Root test and Granger Causality test have been performed in the E-Views7 program whereas the ordinary calculations were done in Excel.

IV. RESULTS AND DISCUSSION

4.1. Descriptive statistics of the GDP and commercial banking variables: An introspection of the Table 1 reveals that the real GDP per capita has been increased. The acceleration of the Real GDP per capita growth rate is basically due to a significant attributed to the country's macroeconomic policy initiatives as well as political environment. The overall mean value of the RGDP was 7.26 with standard deviation of 0.23.

Regarding the banking performance variables, deposit was in increasing trend. Increase in GDP led to an increase of money supply in economy that helped the banking sector to have more deposits. The overall mean value of the deposit was 10.40 with standard deviation of 1.86. Growing loan and advances indicated that the role of loan was expanding fast as a source of funding for economic activities in the country. The mean value of the loan and advances was 10.11 with the standard deviation of 1.90. Similarly, increasing commercial banks assets confirm that the process of economic liberalization, financial sector liberalization over last decades in economy brought structural changes in the industry. The mean value of assets was 10.69 with standard deviation of 1.88. The process of deregulation and reform led to rapid expansion of number of banks, and their assets, deposit and loan.

Table 1. Descriptive statistics of the real GDP and commercial banking variables

Variable	N	Minimum	Maximum	Mean	Std. Deviation
RGDP	36	6.95	7.60	7.26	0.23
DEPOSIT	36	7.07	13.33	10.40	1.86
LOAN and ADV	36	7.08	13.13	10.11	1.90
ASSET	36	7.51	13.58	10.69	1.88

4.2. Ordinary least square results: The Unit Root test resulted in the time series data were non-stationary in this study. Thus the relationship between Nepalese commercial banking performance with the economic growth was analysed using the regression analysis and the model was estimated by ordinary least square. The estimated results are provided in Table 2. The value of R-Square, the coefficient of determination, represented the correlation between the observed values with the predicted values of the dependent variable and provided the adequacy of the model. Here the value of R-Square was 0.995 that means the independent variable in the model could predict 99.5% of the variance in the dependent variable. The p-value was given by 0.000 which was less than 0.05, which showed the significance of the model. The values of Durbin-Watson statistics was 1.88 which is very near to 2.00, this indicates that there is no autocorrelation exists in this study and the regression models assume that the error deviations are uncorrelated.

The Beta value showed the relationship between the variables in the model, if the value of coefficient was positive. It meant that the independent variables have positive relation with the dependent variable i.e. increase in the dependent variable was caused by raise in the independent variable. And if the value of the coefficient was negative, then the independent variables were having negative relation with the dependent variable i.e. decrease in dependent variable was caused by increase in dependent variable [23]. The values of the coefficients beta and constant were used to construct the regression model. That is: Beta coefficient showed the tendency of an independent variable to respond against dependent variables. Therefore greater value of the beta indicated the larger impact on the dependent variable and vice versa. Deposit was significant impact on the economic growth. The outcome is consistent with the results of the earlier studies which accomplished that an improvement in deposit rate would put forth a positive consequence on economic growth in Pakistan [24, 25]. It meant the savings rate in a country is crucial to the economic development. The loan and advances had also significant and positive impact on the economic growth. The similar result was found by Aurangzeb [23] for the Pakistan banking sector. The Asset of the commercial banks plays significant and equal role in economic growth as signified by the positive and statistically significant coefficient. That meant if deposit, loan and advances, and asset were increased, then the GDP would also increase. According to the Ordinary Least Square model, the result showed that, deposit, loan and advances, and assets were significant effect on the economic growth. For that reason, hypothesis 1, 2 and 3 have been accepted and have a significant impact on economic growth of Nepal.

Table 2. Regressions between commercial banking performance and real GDP

Variable	Coefficient	t-statistic	Probability
C	7.57	1.150	0.000
Deposit	0.005	4.573*	0.000
Loan	0.003	3.348*	0.001
Assets	-0.005	-3.492*	0.001
R-Squared	0.995		
Durbin-Watson	1.885		
F-Statistic (Probability)	2.137 (0.000000)		

*, **, *** Indicate that the variable is significant at 1%, 5% and 10% respectively.

4.3. Augmented Dickey Fuller test: Table 3 demonstrates the finding of the Augmented Dickey Fuller test. The ADF test results suggest that at the 1% and 5% significance level could not reject the null hypothesis for any variables, which meant that the unit root problem existed and the series were non-stationary. Almost all the variables including deposit, loan and advances and assets have non-stationary both when include intercept and when include intercept and trend at level while all the variables were stationary at first difference except GDP.

Table 3. Augmented Dickey Fuller Unit Root tests for level and 1st difference variables

Level			1 st difference		
variable	Intercept	Trend & Intercept	variable	Intercept	Trend & Intercept
RGDP	1.0000	1.0000	RGDP	0.9980	0.6227
Deposit	-2.217 (0.204)	-1.77 (0.695)	Deposit	-4.408 (0.0013)	-4.52 (0.0052)
Loan	-0.086 (0.943)	-1.92 (0.620)	Loan	-4.947(0.0003)	-4.88 (0.0021)
Assets	-1.376 (0.582)	-0.80 (0.955)	Assets	-2.470(0.1315)	-2.57 (0.2946)

4.4. Test for causality: Table 4 shows that Granger Causality test between the commercial banking performance and economic growth in Nepal. The F-statistics and its corresponding value of the probability suggest that the deposit does not granger cause RGDP indicating unidirectional which was significant at 1% level. RGDP does not Granger caused economic growth hypothesis has been accepted. Similarly asset does not Granger caused economic growth indicates unidirectional which was significant at 1% level. While RGDP Granger caused asset hypothesis has been accepted. Loan and advances indicates that the bidirectional causal relationship with the economic growth. This might indicate that these variables were the best proxy for the economic development. The analysis shows that Nepalese commercial banks have brought positive effects on the economic growth.

Table 4. Granger Causality test- commercial banking performance and economic growth in Nepal.

Null Hypothesis:	F-Statistic	Probability
DEP does not Granger Cause GDP	37.838***	0.000
GDP does not Granger Cause DEP	2.688	0.110
LOAN and ADV does not Granger Cause GDP	3.700*	0.063
GDP does not Granger Cause ADV	3.955**	0.055
ASSETS does not Granger Cause GDP	18.705***	0.000
GDP does not Granger Cause ASSETS	0.545	0.465

***, ** and * indicates statistical significance at the 1%, 5% and 10% level respectively.

V. CONCLUSIONS

Unit root test confirmed the non-stationary of all the variables at level whereas stationary at the first difference. Regression results indicate that deposits, loan and advances, and assets have significant positive impact on the economic growth of Nepal. The Granger-Causality test confirmed the unidirectional causal relationship of deposit and assets with the economic growth while loan and advances bidirectional causal relationship with economic growth. The consequences allied sound with the apriority prospect and set the healthier performing commercial banking industry was currently serving Nepal to attain superior growth rates. As a result, it is required to grant an appropriate operating situation for the banking industry to execute its services in Nepal.

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