Impact of Banking Sector Development on Economic Growth of Nepal

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Abstract

The study examines the impact of banking sector development on economic growth of Nepal. Gross domestic product and per capita income are the dependent variables. The selected independent variables are credit to deposit ratio, bank deposit, bank credit, interest rate, number of branches, total assets and number of employees. The study is based on secondary data of 15 commercial banks with 120 observations for the study period from 2014/15 to 2021/22. The data were collected from Bank Supervision Report published by Nepal Rastra Bank (NRB), Ministry of Finance (MoF) and annual reports of the selected commercial banks. The correlation coefficients and regression models are estimated to test the significance and importance of banking sector development on economic growth of Nepal.

The study showed that credit to deposit ratio has a positive impact on gross domestic product and per capita income. It means that higher the credit to deposit ratio, higher would be the gross domestic product and per capita income. Similarly, bank deposit has a positive impact on gross domestic product and per capita income. It means that higher the bank deposit, higher would be the gross domestic product and per capita income. Likewise, bank credit has a positive impact on the gross domestic product and per capita income. It means that higher the bank credit, higher would be the gross domestic product and per capita income. Further, total assets have positive impact on gross domestic product and per capita income. It means that higher the total assets, higher would be the gross domestic product and per capita income. In addition, number of branches have positive impact on gross domestic product and per capita income. It means that larger the number of branches, higher would be the gross domestic product and per capita income. Moreover, number of employees have positive impact on gross domestic product and per capita income. It means that higher the number of employees, higher would be the gross domestic product and per capita income. In contrast, interest rate has a negative impact on gross domestic product and per capita income. It means that higher the interest rate, lower would be the gross domestic product and per capita income.

Keywords: gross domestic product, per capita income, bank deposit, bank credit, interest rate, total assets, number of branches, number of employee, credit to deposit ratio

1. Introduction

Banks are the most integral part of the financial sector of any country as they dominate the financial sector by contributing much to the economic growth of the country (Saha and Bishwas, 2021). The sustainable increment in the profitability of a banking sector helps in economic growth and

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development of a country (Osuagwa, 2014). The financial sector of any country plays a pivotal role in the development process of each economy and economy depends on the growth of its financial sector (Piketty, 2015). According to Sumaira and Bibi (2022), bank based financial development contribute to economic growth. The bank based financial development is important in boosting economic growth. Banking sector plays a significant role in overall development of the economy in all countries (Alam *et al.,* 2011). Bank motivates people to keep their surplus money as deposit in the bank. Bank then utilizes such money by providing loans to these people who have deficit and need of that fund or by investing that fund in other profitable sector (Khrawish, 2011). Banks can provide credit to businesses to help them invest in new equipment, expand their operations, and create jobs. This can lead to increased economic growth. Commercial banks are working as development assistants and strongly contributing to the growth and development of an economy all over the world. Hence, the banking sector is treated as the leading driving force of an economy (Swandewi and Purnawati, 2021). Banks have to manage their risks and keep profitability stable and increase public confidence level. This is linked to bank health assessment which is very important for all stakeholders such as the owners, the management, the customers and the government itself (Christaria and Kurnia, 2016).

A strong financial system promotes investment by financing productive business opportunities, mobilizing savings, efficiently allocating resources and makes easy the trade of goods and services. Banks serve the vital intermediary role in a market-oriented economy and have been seen as the key to investment and growth. Sound financial health of a bank is the guarantee not only to its depositors but is equally significant for the shareholders, employees and whole economy as well Mhadhbi *et al*. (2020) examined the causal relationship between banking sector development and economic growth for forty developing countries during the period 1970-2012. The study revealed that there is a causal relationship between banking sector development and economic growth. Similarly, Mushtaq (2016) investigated the causal relationship of bank deposits and credits provided by banking sector with GDP growth in Pakistan. The study found that two major activities of banking sector that are saving and lending have no any long run or short run causality towards economic growth in case of Pakistan. Iman *et al*. (2022) investigated the relationship of the collection of Zakat, bank age, and total assets with the financial performance of Islamic banking. The study found that the total assets of Islamic banks have a positive and significant effect

on the longitudinal performance of Islamic banks. Similarly, Ahmed (2022) revealed that there is a positive and significant relationship between total assets, number of employees and return on assets.

According to Tessema and Hariz (2022), there is a significant relationship between GDP growth and loan to deposit. Banks help to channel savings from households and businesses to those who need it most. This can help to allocate resources more efficiently and promote economic growth. Guru and Yadav (2019) examined the relationship between financial development and economic growth. The study found that there is a significant positive relationship between credit to deposit ratio and economic growth. Similarly, Dick (2006) examined the effects of the Riegle-Neal branching deregulation in the 1990s on banking market structure, service, and performance. The study found that there is a positive impact of increase in branch networks on economic growth. Likewise, Azolibe (2022) revealed that the number of bank branches has a positive and significant impact on economic growth. Javed and Basheer (2017) showed that rapid economic growth increase profitability of banking sector. Sufian and Kamarudin (2012) found that GDP significantly influences profitability. Similarly, Fotions and Kyriaki (2007) found that the gross domestic product is significant and positively related to net interest margin of domestic banks, but it is negative and significant in case of foreign banks. Likewise, Tanna *et al.* (2005) found a significant positive relationship between bank profitability and GDP. Banks can help to manage risk by providing insurance and hedging products. This can help businesses and households to take on more risk, which can lead to more investment and economic growth. Moreover, Ali *et al.* (2012) revealed that GDP growth has a positive effect on the profitability of Pakistan banking sector. Pham and Nguyen (2020) examined the Granger causality between domestic credit and gross domestic product (GDP). The study found that the credit expansion has a negative impact on economic growth in Vietnam in the long term. Murty *et al*. (2012) examined the long run impact of the bank credit on economic growth of Ethiopia. The study revealed that bank credit helps in promoting economic growth in the long run. Al-Qudah (2021) examined the determinants of lending interest rates. The study found that the ROA and bank size have negative significant impacts on lending interest rates. On the contrary, Sastrosuwito and Suzuki (2012) also pointed that there is an insignificant correlation between the profitability of banks and annual growth rate in the Indonesian banking industry. Korkmaz *et al*. (2022) investigated the effect of macroeconomic indicators on the lending interest rates. The study revealed that GDP has a significant impact on lending interest rate.

Ratnawati (2020) examined the impact of financial inclusion on economic growth, poverty, income inequality, and financial stability in Asia. The study found a positive relationship between economic growth and financial stability. Similarly, Erina and Lace (2013) revealed that GDP has a positive impact on profitability as measured by ROA and ROE. Moreover, Goddard *et al.* (2004) estimated the profitability of 583 European Union domestic banks. The study showed that there is a significant positive effect of GDP on profits. Furthermore, Saksonova and Solovjova (2011) performed comparative analysis of five largest Latvian commercial banks during period of economic crisis. The study found that GDP growth had positive contribution to bank profits. Likewise, Creel *et al*. (2015) also explored the profitability of sampled US commercial banks. The study found a positive impact of per-capita income on profitability.

In the context of Nepal, Pradhan (2014) showed that gross domestic product and market share are positively related to bank profitability, whereas inflation and liquidity are negatively related to bank profitability. Khanal *et al*. (2022) examined the effect of capital adequacy ratio on the financial stability of Nepalese commercial banks. The study showed that capital adequacy ratio has a negative impact on Z-score of return on assets and Z-score of return on equity. It indicates that the increase in capital adequacy ratio leads to decrease in Z-score of return on assets and Z-score of return on equity. Likewise, return on assets has a positive impact on Z-score of return on assets and Z-score of return on equity. It indicates that the increase in return on assets leads to increase in Z-score of return on assets and Z-score of return on equity. Humagain *et al*. (2022) analyzed the impact of internal and external factors on the profitability of Nepalese commercial banks. The study showed that inflation has negative impact on return on equity. However, interest rate, GDP growth rate, equity to total assets, total loan to total assets, and bank size have positive impact on return on equity. Likewise, interest rate and inflation have negative impact on return on assets. However, GDP growth rate, equity to total assets, total loan to total assets, and bank size have positive impact on return on assets.

The above discussion shows that empirical evidences vary greatly across the studies on the impact of banking sector development on economic growth. Though there are above mentioned empirical evidences in the context of other countries and in Nepal, no such findings using more recent data exist in the context of Nepal. Therefore, in order to support one view or the other, this study has been conducted.

The main purpose of the study is to analyze the impact of banking

sector development on economic growth of Nepal. Specifically, it examines the relationship of credit to deposit ratio, bank deposit, bank credit, interest rate, total assets, number of branches and number of employees with gross domestic product and per capita income of Nepal.

The remainder of this study is organized as follows. Section two describes the sample, data and methodology. Section three presents the empirical results and the final section draws the conclusion.

2. Methodological aspects

The study is based on the secondary data which were collected from 15 Nepalese commercial banks for the period from 2014/15 to 2021/22, leading to a total of 120 observations. The study employed purposive sampling method. The main sources of data collected from Bank Supervision Report published by Nepal Rastra Bank (NRB) and annual reports of the selected commercial banks. This study is based on descriptive as well as causal comparative research designs. Table 1 shows the list of commercial banks selected for the study along with the study period and number of observations.

Table 1

List of commercial banks selected for the study along with study period and number of observations

S. N.	Name of the banks	Study period	Observations
1.	Nepal Bank Limited	2014/15 to 2021/22	8
2.	Agricultural Development Bank Limited	2014/15 to 2021/22	8
3.	Rastriya Banijya Bank Limited	2014/15 to 2021/22	8
4.	NMB Bank Limited	2014/15 to 2021/22	8
5.	Everest Bank Limited	2014/15 to 2021/22	8
6.	NIC Asia Bank Limited	2014/15 to 2021/22	8
7.	Machhapuchchhre Bank Limited	2014/15 to 2021/22	8
8.	Sanima Bank Limited	2014/15 to 2021/22	8
9.	Kumari Bank Limited	2014/15 to 2021/22	8
10.	Prime Commercial Bank Limited	2014/15 to 2021/22	8
11.	Siddhartha Bank Limited	2014/15 to 2021/22	8
12.	Nepal SBI Bank Limited	2014/15 to 2021/22	8
13.	Himalayan Bank Limited	2014/15 to 2021/22	8
14.	Laxmi Bank Limited	2014/15 to 2021/22	8
15.	Standard Chartered Bank Nepal Limited	2014/15 to 2021/22	8
Total number of observations			**120**

Thus, the study is based on the 120 observations.

The model

The model used in this study assumes that economic growth depends upon bank specific factors. The dependent variables selected for the study are gross domestic product and per capita income. Similarly, the selected independent variables are credit to deposit ratio, bank deposit, bank credit, interest rate, total assets, number of branches and number of employees. Therefore, the model takes the following form:

Economic growth = f (CDR, BD, CD, CD, TA, NB, NE)

More specifically, the given model has been segmented into the following models:

$$GDP = \beta_0 + \beta_1 CDR + \beta_2 BD + \beta_3 CD + \beta_4 CD + \beta_5 TA + \beta_6 NB + \beta_7 NE + e_{it}$$

$$PCI = \beta_0 + \beta_1 CDR + \beta_2 BD + \beta_3 CD + \beta_4 CD + \beta_5 TA + \beta_6 NB + \beta_7 NE + e_{it}$$

Where,

GDP = Gross domestic product as measured by real gross domestic product, USD in billion.

PCI = Per capita income as measured by average income earned per person, in Rs.

CDR= Credit to deposit ratio as measured by the ratio of bank's total credit to its total deposits for the same period, in times.

IR= Interest rate as measured by interest income to bank credit, in percentage.

TA=Total assets, Rs in billion.

BC=Bank credit, Rs in billion.

BD=Bank deposit, Rs in billion.

NE=Number of employees

NB= Number of branches

The following section describes the independent variables used in this study along with hypothesis formulation.

Credit to deposit ratio

Credit-to-deposit ratio indicates how much of the deposits are being utilized to extend loans and credit to customers. Kisman (2017) found that

deposit growth, lagged GDP growth, inflation and lagged BI (central bank) rate have significant positive influence on credit growth. Likewise, Okoye *et al.* (2017) revealed that loans to deposit ratio have significant positive effect on economic growth. Further, Tessema and Hariz (2022) showed that three internal variables such as loan to deposit ratio, profitability and the number of bank branches and two macroeconomic variables such as unemployment rate and economic growth rate have significant effect on the total deposit of private commercial banks. In addition, Nwafor and Yomi (2018) showed that there is a strong positive relationship between the loan to deposit ratio and economic growth. Based on it, this study develops the following hypothesis:

H_1: There is a positive relationship between credit to deposit ratio and economic growth.

Bank deposit

Bank deposits are money placed into a deposit account at a banking institution, such as savings accounts, checking accounts, and money market accounts. Okoye *et al*. (2017) found that the deposit ratio has a significant positive impact on economic growth. Similarly, Kelly *et al*. (2013) found that there is a positive correlation between growth rate in an economy and the level of deposits. Likewise, Akpansung and Babalola (2012) found that there is evidence of positive significant relationship between deposits and GDP growth rate. Mashamba *et a*l. (2014) found a positive relationship between economic growth and bank deposit. Based on it, this study develops the following hypothesis:

H_2: There is a positive relationship between bank deposit and economic growth.

Bank credit

Bank credit is the amount of credit available to a business or individual from a banking institution in the form of loans. Murty *et al*. (2012) revealed that bank credit to the private sector affects economic growth. Tessema and Hariz (2022) revealed that the increase in domestic credit boosts the economy. Lay (2020) found that there is inverted U-shaped relationship between credit and economic growth which implies that credit is beneficial to economic growth only up to a certain threshold and too much credit may not necessarily enhance economic growth. Erina and Lace (2013) revealed that there is positive effect of bank credit expansion on economic growth. Based on it, this study develops the following hypothesis:

H_3: There is a positive relationship between bank credit and economic growth.

Interest rate

The interest rate is the cost of debt for the borrower and the rate of return for the lender. The central bank of any country manages interest rates to achieve ideal economic growth. Slow economic growth which may be due to a tight monetary policy through a relatively high interest rate regime can lead to a fall in the economic growth (Mhadhbi *et al*., 2020). Obamuyi (2009) indicated that real lending rates have significant effect on economic growth. Korkmaz *et al*. (2022) found GDP has significant impact on lending interest rate. Moreover, Boadi and Lartey (2015) revealed that interest rate has a negative relationship with gross domestic product. Arikewuyo and Akingunola (2019) revealed that interest rate has a negative and insignificant impact on fund mobilization in the economy. Based on it, this study develops the following hypothesis:

H_4: There is a negative relationship between interest rate and economic growth.

Total assets

Azolibe (2022) found that the bank's total assets have a positive and significant impact on economic growth. Ahmed (2022) revealed that there is a positive and significant relationship between total assets and return on assets. Similarly, Tan and Floros (2012) found that there is a positive relationship between GDP growth and bank profitability. Further, Iman *et al.* (2022) found that company age and total assets of Islamic banks have a positive and significant effect on the longitudinal performance of Islamic banks. In addition, Oli (2018) revealed that increase in total assets leads to increase in economic growth. Based on it, this study develops the following hypothesis:

H_5: There is a positive relationship between total assets and economic growth.

Number of branches

Gunasekara and Kumari (2018) revealed that there is a significant and positive relationship between branch expansions and economic development. Similarly, Bernini and Brighi (2018) indicated that a bank structural change by a branch expansion generates a positive effect in terms of local economic development. Likewise, Chu (2010) found that larger branch networks reduce the transaction cost of financial intermediation and encourage depositors to save more, hence resulting in higher per capita output. Further, Azolibe (2022)

revealed that the number of bank branches has a positive and significant impact on economic growth. In addition, Pasiouras (2008) found that the number of branches has a positive and significant impact on efficiency of bank. Moreover, Dick (2006) showed that there is positive impact of increase in branch networks on economic growth. Based on it, this study develops the following hypothesis:

H_6: There is positive relationship between no of branch and economic growth.

Number of employees

Akcoraoglu (2010) revealed that there is a long-run relationship between the real GDP and employment. Similarly, Mohseni and Jouzaryan (2016) found that there is a negative relationship between unemployment and economic growth. Further, Sodipe and Ogunrinola (2011) revealed a positive and statistically significant relationship exists between employment level and economic growth. In addition, Oli (2018) revealed that larger the number of staffs and members of micro-finance institutions, higher would be the economic growth. Moreover, Ahmed (2022) showed that there is a positive and significant relationship between number of employees and financial development. Based on it, this study develops the following hypothesis:

H_7: There is a positive relationship between number of employees and economic growth.

2. Results and discussion

Descriptive statistics

Table 2 presents the descriptive statistics of the selected dependent and independent variables during the period 2014/15 to 2021/22.

Table 2

Descriptive statistics

This table shows the descriptive statistics of dependent and independent variables of 15 Nepalese commercial banks for the study period of 2014/15 to 2021/22. Dependent variables are GDP (Gross domestic product as measured by real gross domestic product, USD in billion) and PCI (Per capita income as measured by average income earned per person, in Rs). The independent variables are CDR(Credit to deposit ratio is measured by bank credit to bank deposit, in percentage), BD(Bank deposit is measured by total deposit from customers, Rs in billion), IR(Interest rate measured as the ratio of interest income from loans and advances to Bank credit , in percentage), BC(Bank credit as measured by total credit to the customer in particular fiscal year, Rs in billion), TA (Total assets as measured by total assets of the particular bank in particular fiscal year, Rs in billion) , NB (Number of branches of the bank

in particular fiscal year, in number)and NE (Number of employee of the bank in particular fiscal year , in number).

Variables	Minimum	Maximum	Mean	Std. Deviation
GDP	1862.36	2520.32	2186.31	227.17
PCI	74992	164598	113468.63	30336.06
CDR	0.04	1.09	0.84	0.15
BD	33.42	289.9	109.76	53.14
BC	2.17	266.55	92.95	48.63
IR	7.40	105.85	12.05	12.03
TA	37.37	358.57	137.42	69.15
NB	15	359	123.48	82.38
EN	357	4385	1334.3	807.46

Source: SPSS output

Correlation analysis

Having indicated the descriptive statistics, Pearson's correlation coefficients are computed and the results are presented in Table 3.

Table 3

Pearson's correlation coefficients matrix

This table shows the bivariate Pearson's correlation coefficient dependent and independent variables of 15 Nepalese commercial banks for the study period from 2014/15 to 2021/22. Dependent variables are GDP (Gross domestic product as measured by real gross domestic product, USD in billion) and PCI (Per capita income as measured by average income earned per person, in Rs). The independent variables are CDR(Credit to deposit ratio is measured by bank credit to bank deposit, in percentage), BD(Bank deposit is measured by total deposit from customers, Rs in billion), IR(Interest rate measured as the ratio of interest income from loans and advances to Bank credit , in percentage), BC(Bank credit as measured by total credit to the customer in particular fiscal year, Rs in billion), TA (Total assets as measured by total assets of the particular bank in particular fiscal year, Rs in billion) , NB (Number of branches of the bank in particular fiscal year, in number)and NE (Number of employee of the bank in particular fiscal year , in number).

Variables	GDP	PCI	CDR	BD	BC	IR	TA	NB	NE
GDP	1								
PCI	0.959**	1							
CDR	0.489**	0.439**	1						
BD	0.694**	0.744**	0.170	1					
BC	0.780**	0.821**	.409**	0.959**	1				
IR	-0.126	-0.122	-0.661**	0-0.111	-0.215*	1			
TA	0.739**	0.784**	0.230*	0.990**	0.971**	-0.113	1		
NB	0.470**	0.484**	0.281**	0.793**	0.802**	-0.126	0.801**	1	
NE	0.346**	0.357**	00.174	0.725**	0.714**	-0.107	0.726**	0.924**	1

Note: The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent levels respectively.

Table 3 shows that credit to deposit ratio has a positive relationship with gross domestic product. It means that increase in credit to deposit ratio leads to increase in gross domestic product. Similarly, bank deposit has a positive relationship with gross domestic product. It means that increase in bank deposits leads to increase in gross domestic product. Likewise, bank credit has a positive relationship with gross domestic product. It means that increase in bank credit leads to increase in gross domestic product. However, interest rate has a negative relationship with gross domestic product. It means that increase in interest rate leads to decrease in gross domestic product. Similarly, total assets have a positive relationship with gross domestic product. it means increase in total assets leads to increase in gross domestic product. In addition, number of bank branch has a positive relationship with gross domestic product. It means that increase in number of bank branch leads to increase in gross domestic product. Likewise, number of employees have positive relationship with gross domestic product. It means that increase in number of employees leads to increase in gross domestic product.

Similarly, the result also shows credit to deposit ratio has a positive relationship with per capita income. It means that increase in credit to deposit ratio leads to increase in per capita income. Similarly, bank deposit has a positive relationship with per capita income. It means that increase in bank deposit leads to increase in per capita income. Likewise, bank credit has a positive relationship with per capita income. It means that increase in bank credit leads to increase in per capita income. However, interest rate has a negative relationship with per capita income. It means that increase in interest rate leads to decrease in per capita income. Similarly, total assets has a positive relationship with per capita income. It means that increase in bank total assets leads to increase in per capita income. In addition, number of bank branch has a positive relationship with per capita income. It means increase in number of bank branches leads to increase in per capita income. Likewise, number of employees has a positive relationship with per capita income. It means increase in number of employees leads to increase in per capita income.

Regression analysis

Having indicated the Pearson's correlation coefficients, the regression analysis has been carried out and results are presented in Table 4 and 5. More specifically, Table 4 shows the regression results of credit to deposit ratio, bank deposit, bank credit, interest rate, total assets, number of employee and number of bank branch with GDP (gross domestic product) of Nepalese

commercial banks.

Table 4

Estimated regression results of credit to deposit ratio, bank deposit, bank credit, interest rate, total assets, number of employee and number of bank branch on gross domestic products

The results are based on panel data of 15 commercial banks with 120 observations for the period from 2014/15 to 2021/22 by using the linear regression model and the model is GDP $= \beta_0 + \beta_1$ CDR $+ \beta_2$ BD $+ \beta_3$ CD $+ \beta_4$ CD $+ \beta_5$ TA $+ \beta_6$ NB $+ \beta_7$ NE $+ e_{it}$ where, dependent variable is GDP (Gross domestic product as measured by real gross domestic product, USD in billion). The independent variables are CDR(Credit to deposit ratio is measured by bank credit to bank deposit, in percentage), BD(Bank deposit is measured by total deposit from customers, Rs in billion), IR(Interest rate measured as the ratio of interest income from loans and advances to Bank credit , in percentage), BC(Bank credit as measured by total credit to the customer in particular fiscal year, Rs in billion), TA (Total assets as measured by total assets of the particular bank in particular fiscal year, Rs in billion) , NB (Number of branches of the bank in particular fiscal year, in number)and NE (Number of employee of the bank in particular fiscal year , in number).

Model	Intercept	Regression coefficients of							Adj. R_bar^2	SEE	F-value
		CDR	BD	BC	IR	TA	NB	NE			
1	1.555 (14.812)**	0.755 (6.098)**							0.233	0.199	37.188
2	1.856 (53.872)**		0.003 (10.473) **						0.477	0.164	109.684
3	1.846 (65.497)**			0.004 (13.550) **					0.605	0.1427	183.596
4	2.214 (75.563)**				-0.002 (1.384)				0.008	0.226	1.916
5	1.852 (59.099)**					0.002 (11.898) **			0.542	0.154	141.571
6	2.025 (60.955)**						0.001 (5.772)**		0.214	0.202	33.31
7	2.055 (54.3)**							0.0098 (4.002) *	0.112	0.214	16.02
8	1.397 (18.502) **	0.590 (6.651) **	0.003 (10.935) **						0.618	0.141	97.059
9	1.759 (11.68) **	0.15 (0.828)	0.002 (1.06)	0.005 (2.754) **					0.638	0.137	70.875
10	1.07 (4.894) **	0.889 (3.602) **	0.002 (1.249)	0.001 (0.252)	0.006 (4.129) **				0.682	0.128	64.772
11	1.157 (5.338) **	0.812 (3.332) **	0 .002 (0.678)	0.001 (0.248)	-0.550 (3.408) **	0.004 (2.472) *			0.695	0.125	55.342
12	1.001 (5.29) **	0.976 (4.595) **	0.00 (0.149)	0.001 (0.411)	-0.006 (4.559) **	0.004 (3.123) **	0.001 (6.264) **		0.772	0.109	68.125
13	1.094 (5.558) **	0.886 (4.053) **	0.001 (0.365)	0.001 (0.194)	-0.006 (4.109) **	0.004 (3.186) **	-0.001 (1.974)	0.0054 (1.59)	0.775	0.108	59.545

Note:

i. Figures in parenthesis are t-values.

ii. The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.

iii. Gross domestic product is the dependent variable.

Table 4 shows that the beta coefficients for credit to deposit ratio are positive with gross domestic product. It indicates that credit to deposit ratio has a positive impact on gross domestic product. This finding is consistent with the findings of Okoye *et al.* (2017). Similarly, the beta coefficients for bank deposit are positive with gross domestic product. It indicates that bank deposit has a positive impact on gross domestic product. This finding is similar to the findings of Kelly *et al*. (2013) Furthermore, the beta coefficients for bank credit are positive with gross domestic product. It indicates that bank credit has a positive impact on gross domestic product. This finding is consistent with the findings of Tessema and Hariz (2022). Likewise, the beta coefficients for interest rate are negative with gross domestic product. It indicates interest rate has a negative impact on gross domestic product. This finding is similar to the findings of Arikewuyo and Akingunola (2019). In addition, the beta coefficients of total assets are positive with gross domestic product. It indicates that total assets have a positive impact on gross domestic product. This finding is consistent with the findings of Azolibe (2022).

The regression results of credit to deposit ratio, bank deposit, bank credit, interest rate, total assets, number of branch and number of employees on PCI (per capita income) of Nepalese commercial banks have been presented in Table 5.

Table 5

Estimated regression results of credit to deposit ratio, bank deposit, bank credit, interest rate, total assets, number of branch and number of employees on PCI of Nepal

The results are based on panel data of 15 commercial banks with 120 observations for the period from 2014/15 to 2021/22 by using the linear regression model and the model is $PCI = \beta_0 + \beta_1 CDR + \beta_2 BD + \beta_3 CD + \beta_4 CD + \beta_5 TA + \beta_6 NB + \beta_7 NE + e_{it}$ where, dependent variable is PCI (Per capita income as measured by average income earned per person, in Rs). The independent variables are CDR(Credit to deposit ratio is measured by bank credit to bank deposit, in percentage), BD(Bank deposit is measured by total deposit from customers, Rs in billion), IR(Interest rate measured as the ratio of interest income from loans and advances to Bank credit , in percentage), BC(Bank credit as measured by total credit to the customer in particular fiscal year, Rs in billion), TA (Total assets as measured by total assets of the particular bank in particular fiscal year, Rs in billion) , NB (Number of branches of the bank in particular fiscal year, in number)and NE (Number of employee of the bank in particular fiscal year, in number).

Model	Intercept	Regression coefficients of							Adj. R_bar^2	SEE	F-value
		CDR	BD	BC	IR	TA	NB	NE			
1	38.03 (2.632) **	90.32 (5.301)**							0.185	27.37	28.101
2	66.837 (15.624) **		0.425 (12.101) **						0.550	20.351	146.441
3	65.868 (19.157) **			0.512 (15.61) **					0.671	17.402	243.673
4	117.189 (29.93) **				-0.309 (1.339)				0.007	30.236	1.794
5	66.238 (17.172) **					0.344 (13.697) **			0.611	18.93	187.597
6	91.444 (20.798) **						0.178 (6.014) **		0.228	26.653	36.173
7	95.578 (18.989) **							0.130 (4.151) **	0.120	28.459	17.226
8	14.97 (1.547)	56.195 (5.826) **	0.394 (12.498) **						0.648	17.994	110.627
9	81.352 (4.369) **	14.406 (0.642)	0.413 (2.069) *	0.963 (4.084) **					0.69	16.897	89.190
10	25.141 (0.893)	45.86 (1.443)	0.091 (0.395)	0.578 (2.117) *	-0.520 (2.616) **				0.705	16.487	71.974
11	36.039 (1.289)	36.195 (1.152)	0.568 (1.883)	0.446 (1.632)	-0.391 (1.935)	0.461 (2.39) *			0.716	16.16	61.08
12	13.689 (0.585)	59.767 (2.277)*	0.384 (1.528)	0.413 (1.824)	-0.516 (3.065) **	0.511 (3.192) **	0.185 (7.264) **		0.805	13.401	82.805
13	32.978 (1.385)	40.928 (1.548)	0.476 (1.929)	0.496 (2.229)*	-0.412 (2.449) *	0.522 (3.354) **	0.076 (1.613)	0.011 (2.737) **	0.815	13.032	76.123

Notes:

i. Figures in parenthesis are t-values.

ii. The asterisk signs (**) and (*) indicate that the results are significant at one percent and five percent level respectively.

iii. Per capita income is the dependent variable.

Table 5 shows that the beta coefficients for credit to deposit ratio are positive with per capita income. It indicates that credit to deposit ratio has a positive impact on gross domestic product. This finding is consistent with the findings of Tessema and Hariz (2022). Similarly, the beta coefficients for bank deposit are positive with per capita income. It indicates that bank deposit has a positive impact on per capita income. This finding is similar to the findings of Akpansung and Babalola (2008). Furthermore, the beta coefficients for bank credit are positive with per capita income. It indicates that bank credit has a positive impact on per capita income. This finding is consistent with the findings of Pham and Nguyen (2020). Likewise, the beta coefficients for interest rate are negative with per capita income. It indicates that interest rate has a negative impact on per capita income. This finding is similar to the findings of Boadi and Lartey (2015). In addition, the beta coefficients of total assets are positive with per capita income. It indicates that total assets has a positive impact on per capita income. This finding is consistent with the findings of Ahmed (2022).

4. Summary and conclusion

Financial sector is regarded as one of the major areas of the economy that plays a vital role in developing the nation. The banking sector plays a vital role in economic growth by providing credit to businesses and households, facilitating payments, and managing risk. A well-developed banking sector can help to promote economic growth. The development role undertaken by banking sector determines the step for development of economy. A strong financial system promotes investment by financing productive business opportunities, mobilizing savings, efficiently allocating resources and makes easy the trade of goods and services.

This study attempts to analyze the impact of banking sector development on economic growth of Nepal. The study is based on secondary data of 15 commercial banks with 120 observations for the study period from 2014/15 to 2021/22.

The study showed that credit to deposit ratio, bank deposit, bank credit, total assets, number of branch and number of employees have positive impact on gross domestic product and per capital income of Nepal. However, interest rate has a negative impact on gross domestic product and per capital income of Nepal. It implies that higher interest rates can indeed have a negative impact on GDP growth and per capita income, while lower interest rates may stimulate economic activity. High interest rates can increase the cost of servicing government debt, leading to higher public spending on interest payments. This can divert resources away from productive investments and public services. The study concluded that the most dominant factor that determines the gross domestic product is bank credit in the context of Nepalese commercial banks.

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