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## RESEARCH ARTICLE

# Measuring Determinants of Time Deposit in the Commercial Banks in Nepal

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**Abstract:** Time deposit is one of major source of liquidity of the commercial bank to maintain money supply to the demand of business and household sector. In this context, an interesting query is the determinants of time deposit. This paper measures the determinants of time deposit in the commercial banks of Nepal based on 15 years' time series data sets from 2000-01 to 2017-18 of the sample commercial banks published by the central bank of Nepal. Using descriptive statistics and multiple regression models as the analytical tools, the paper has found fluctuating trend of liquidity in the commercial banks but inclining trend of external and internal variables including GDP, Deposit, Capital, Size of Bank, remittance and public debt. In this trend, the liquidity of the commercial banks depends significantly on time deposit and remittance inflow. Besides, the positive trend of time deposit from 1994-95 to 2017-18 has caused the positive trend of total deposit from 1994-95 to 2017-18. Additionally, the paper has found that GDP per capita, US exchange rate, interest rate and the branch of the bank are positively and significantly determinants to the time deposit of the commercial bank but inflation rate is negatively and determinant with significance. The internal variables are more determinants than the external variables to the time deposits. It is clear that time deposit is a reliable and long-term source to main the bank liquidity of the commercial bank for their financial stability and performance depends on more the internal variables than the external variables. Therefore, the commercial bank should reform as mentioned in the monetary policy and money market dynamics to improve the competitiveness and smartness of bank policy including interest rate policy and branch of the commercial banks for effective mobilization of the scattered small resources all over the country for higher rate of capital formation, investment, and economic growth.

**Keywords:** time deposit, GDP, inflation, interest rate, exchange rate

## 1. Introduction

Growing a large body of literatures reveals liquidity crisis as a big challenge in the financial industry. In the literatures, its exogenous nature is more complicated than its endogenous nature. For instance, financial crisis 2008 was a global financial crisis 2008 and was a driver of the global economic crisis (the Great Recession). It was due to real estate collapse in the US economy and then escalated the global economic crisis. Similarly, the endogenous factor caused liquidity crunch in the financial industry of Nepal in 2018. In the later, 2019



and 2020, it retriggered in the financial industry. In this crisis, the growth of deposit was 3.78% but the lending growth was 7.7 %. These fluctuations were short-term nature. Nepal Rastriya Bank (NRB) (2020) mentioned it endogenous issue because of excessive credit demand on unproductive sectors to the existing money supply.

Studies of NRB show the growth of current and time deposits as a reliable and effective endogenous solution of liquidity crisis in the financial industry. NRB (2020) encouraged the financial industry to collect different deposits through the expansionary monetary policy 2018, 2019 and 2020, along with open market operation to inject money supply for stabilizing financial industry. To some extent, the growth of deposit as the result of the monetary policy in 2019 and 2020 could stabilize the liquidity crisis. One of its growth, stock, and secured sources is the fixed deposit of the people and the institution. Its schemes with lubricated higher interest rate and different maturity period are instruments of the banks to mobilize small or big idle money hold by the public for long-term productive credit investment mobilization (Davydenko, 2011). The success cases made curious on the determinant factors behind the deposit of financial industry. Therefore, this paper studies determinants of time deposit including external (macroeconomic) (GDP per capita and Inflation rate) and internal variables (interest rate, US exchange rate and bank branches).

Similarly, the practice of time deposit shows its periodic nature in the financial industry where the depositor can deposit three months period and extend to five years and further more (NRB, 2019). The time variation of this deposit depends on the interest of the public and the schemes of the financial industry, particularly the bank. In the short time deposit, the bank provides lower and fixed interest rate to the depositors meanwhile the bank provides higher and negotiable interest rate to the depositors in the long time deposit. NRB (2018) reveals the preference of the depositors in the long time deposit rather than the short-term deposit. The empirical literatures provide the evidence of a positive correlation between interest rate and time factor. It means more time, higher interest and short time, lower interest. Thus, the practice of time deposit illustrates interest rate as a key determinant. Therefore, time deposit is a major instrument of the bank to mobilize small and big idle money of the public in their periphery from rural to urban and from the poor to the rich.

Keynes (1936) in his theory, liquidity preferences theory of interest argues the level of interest rate interacts with two important variables: the supply of money and desire of saver to hold their saving in cash. In this theory, demand of money depends on the preference of the people and supply of money depends on higher interest rate. It argues demand and supply of money as determinate of interest rate. Thus, interest rate is a key determinant to increase quantity of money. Differently, the empirical literatures illustrate multiple factors as determinant of money supply. For example, economic growth, monetary policy, inflation rate, market structure, etc. as exogenous variables, and number of branches, time deposit schemes, marketing strategy, good will and brand value of the bank as endogenous variables. Mushtaq and Siddiqui, (2017) finds that interest rate is as one of the major elements of the bank.

Most literatures argue not only on interest of the time deposits of the bank but also schemes and strategies of the bank. Loayza and Shankar (2000) concluded that there is positive effect of real interest rate on saving in India. Rose (2001), said that banks increase their deposits by offering higher deposit rate. Athukorala and Tsai (2003) concluded that rate of interest has positive effect on saving. Athukorala and Sen (2004) and Rachmawati and Syamsulhakim (2004) revealed that the real interest rate on bank deposits has a significant positive impact, but the magnitude of the impact is modest. Finger and Hesse (2009) showed that interest rate on deposits have significant impact on the commercial banks deposits. Herald and Heiko (2009) also mentioned interest as one of the determining factor for commercial banks deposits. Moreover, Mustafa and Sayera (2009) said that low

deposit rates are discouraging saving mobilization. Ojeaga, (2013) and Nathanael, & Eriemo, (2014) concluded that interest rate and income has strong positive impact on bank deposits in Nigerian Banking sector. Mashamba et al. (2014) found positive relationship between deposit interest rate and bank deposits in Zimbabwe. Ostadi and Sarlak (2014), studied that interest rate and money supply positively and significantly impact bank deposits. Eriemo (2014) found that interest rate and previous price level have positive significant impact on bank deposits in Nigeria. In the study of household bank deposits in Slovakia, Pitonakova, R. (2016) found real interest rate boost up deposits. Mushtaq, and Siddiqui, (2017) argued that interest rate can determines savings as well as bank deposits. Similarly, Ferrouhi, (2017) found positive correlation between bank deposit and interest rate in Morocco for the period from 2003 to 2014. Bikker, and Gerritsen, (2018) found interest rates on deposit products vary not only across, but also within banks (i.e., across account of individual banks) and the positive influence of interest rate on bank deposits. Thus, these empirical studies across countries and within the country of the world conclude positive relationship between rate of interest and bank deposit.

Similarly, literatures contradict above arguments with their comprehensive arguments. In their arguments, these literatures argue that the time deposit of the bank is not matter of the effect of internal variables and is matter of the effect of external variables. Loayza and Shankar (2000) found positive effect of external variables (per capita income and share of agriculture in GDP) on saving like as internal variable (real interest rate) in India but negative effect of external variable (financial development, inflation, and dependency ratio) on saving. Additionally, Orji, (2012) used external variables including GDP per capita, financial deepening, and inflation rate, along with internal variable (real interest rate) and found positive impact of GDP per capita, financial deepening, interest rate spread on the size of private domestic saving and negative impact of real interest rate and inflation rate on the size of private domestic saving. Differently, Finger and Hesse, (2009) found positive effect of external variables on saving by using economic activity, prices and exchange rate and financial conditions in Lebanon for the period 1993-2008. Siaw and Lawer, (2015) studied on determinants of bank deposits in Ghana and concluded negative impact of deposit interest rate and inflation on bank deposit in long run and negative impact of both inflation and growth on bank's deposits in short run. Rachmawati and Syamsulhakim (2004) found four variables, Gross Domestic Products (GDP), number of banks branch offices, profit sharing rate, and interest rate influencing on the volume of deposits. Finger and Hesse (2009) showed that profitability of the banks, bank size, GDP growth, interest rate on deposits, inflation have significant impact on the commercial banks deposits. Siaw and Lawer (2015) investigated the effects of selected macroeconomic and financial level variables on bank deposits in Ghana. The result of the study revealed that inflation and growth of money supply have significant negative short-term impact on the bank deposits in Ghana. Ambe, (2017) investigated five explanatory variable such as loan, existence of competitors, interest rate, branch expansion determining customer deposit mobilization by the commercial bank of Ethiopia by using data for 20 years and found positive effect of their explanatory variables on bank deposit. Similarly, Athukorala and Tsai (2003) and Muhammadm and Shama, (2011) found negative effect of inflation on saving. Thus, the external variables are positive determinants of deposit, except inflation.

The result of above empirical literatures of the cross-country studies in the different period on the determinant of bank deposits mention interest rate and branches as internal variable but heterogeneous external variables including per capita GDP, inflation rate, policy, etc. Except for inflation rate, the remaining internal and external variables influence positively to bank deposit of the commercial banks for short and long period. In Nepal, there are rare literatures in this way. In this gap, this study will fill in the gap.

## 2. Background

Nepal is a small state but its socio-economic and political development attempt, discourse, courses, and evolution are not small and short. These are interestingly up and down. Their



impacts and lessons are somewhere convergent and somewhere divergent. It indicates volatility, unpredictability, and instability in these dimensions. Its reflection is in the financial sector and its evolution.

Despite autocratic hegemony and system, the dawn of financial institution and market was during the Rana Regime (1846-1950) (Bista, 2016). In 1937, the Rana regime transformed informal and traditional financial institutions and market into first financial institution and market by establishing Nepal Bank Limited. Such financial sector reform was a powerful decision in the political hegemony of Ranas. Historical records mention it as the demonstration effects of France and Britain visit of Rana rulers. As a result, this first commercial bank started deposit, time deposit, and lending as financial services as replacement of Tejaratha Adda (Bista, 2021). Such initiation that was initial reform was a key to open up new horizon of financial sector development in the country. Despite its huge potential, the financial market was limited only in Kathmandu city and highly regulated. After 19 years long lapse, the democratic government of Nepal established the central bank, Nepal Rastra Bank in 1956 for promoting rapid development of financial institutions and markets. The central bank started issues and circulation of Nepali currency. Then, the government established Nepal Rastriya Banijya Bank in 1966 and Agricultural Development Bank in 1968 (Bista, 2016). To some extent, these financial institutions reached out both urban and rural areas to mobilize small and idle resources through deposit and time deposit schemes and to provide credit services at reasonable interest rate as alternative of informal credit market. Thus, the financial system was gradually strengthening with larger number of financial institution, broaden financial market, and large number clients.

Over a time, different issues were emerging in the financial sector as the challenge of structure, policy, and market for meeting the growing financial resources demand of the economy. For example, the negative impact of macro-economic crisis in 1980s shaded the financial sector. In 1984, as a solution, the government initiated the first financial reform to break down structural, policy and institutional rigidity in the financial system to open up private and joint venture entry in the financial market to meet the excessive growing demand of financial services and resources and to mobilize the scattered small and idle resources all over the country. Its result was positive because of the entry of few joint venture banks including Nepal Arab Bank in 1984 (Bista, 2016). It geared up the evolution of financial sector development and expansion. In 1990s, the follow up financial reform was initiative. Then, large number of private and joint venture banks, development banks, and financial institutions entered. MoF (2020) figures out 28 commercial banks with Rs 4311 billion deposit. Out of total deposit, time deposit shares 48%. Thus, time deposit is a highly preferable instrument of the commercial banks to mobilize small, idle, and scattered resources all over the country and to maintain liquidity of the banks and capital formation. This result was unexpectedly beautiful miracle to expand liquidity of the bank and to accelerate financial sector development and market as required capital investment resources of the economy for economic development, economic growth, and welfare of the people.

### 3. Materials and Methods

#### 3.1. Theoretical Framework

Studies (Ahmad (2012), Delechat(2012), Hasanovic (2012), Munteanu(2012), Wuryandani(2012), Vodova(2013), Moussa(2015), Al-Homaidi, et al(2018) and Bista & Basnet(2020)) mention determinants of bank liquidity to micro (NPL, capital, bank size, etc.) and macro factors (GDP(Gross Domestic Product), Inflation, Unemployment, etc.). Similarly, fixed deposit of bank is output of micro and macro variables including NPL, capital, bank size, GDP, Inflation, Unemployment, etc. Its functional relationship is:

$$FD=f(GDPPC, IR, INFR, USDR, ANB)$$



Where:

FD = Fixed Deposit  
 GDPPC = GDP per capita  
 IR = Interest rate  
 INFR = Inflation rate  
 USDR = USD Rate  
 ANB = Number of Branch

In this functional relationship, FD is dependent variable and GDPPC, IR, INFR, USDR and ANB are independent variables in which GDPPC and INFR are macro variables and IR, USDR and ANB are micro variables. In other words, GDPPC and INFR are external variables and IR, USDR and ANB are internal variables.

Bank deposit including fixed deposit does not inflow until macro (external) and micro (internal) variables are not appeal to the depositors. In such appeal, IR, USDR, and ANB attract the depositors if these are attractive and competitive, along with better GDPPC and lower INFR. Therefore, fixed deposit collection and performance of the bank depends on these macro and micro variables.

### 3.2. Model

Above theoretical equation (1) is transformed into multiple regression econometric model. In this model,  $FD_{it}$  is dependent variable and GDP per capita ( $GDPPC_{it}$ ), Interest Rate ( $IR_{it}$ ), Inflation Rate ( $INFR_{it}$ ), USD exchange rate ( $USDR_{it}$ ) and Number of Branch ( $ANB_{it}$ ) are independent variables. In this model, there are five parameters:  $\beta_1, \beta_2, \beta_3, \beta_4$  and  $\beta_5$ . Its multiplier regression

$$FD_{it} = \alpha_{it} + \beta_1 GDPPC_{it} + \beta_2 IR_{it} + \beta_3 INFR_{it} + \beta_4 USDR_{it} + \beta_5 ANB_{it} + \epsilon$$

Where:

$FD_{it}$  = Fixed Deposit of  $i^{th}$  bank on year t  
 $GDPPC_{it}$  = GDP per capita of  $i^{th}$  bank on year t  
 $IR_{it}$  = Interest rate of  $i^{th}$  bank on year t  
 $INFR_{it}$  = Inflation rate of  $i^{th}$  bank on year t  
 $USDR_{it}$  = USD Rate of  $i^{th}$  bank on year t  
 $ANB_{it}$  = Number of Branch of  $i^{th}$  bank on year t  
 $B$  = coefficients of the variables ( $\beta_1, \beta_2, \beta_3, \beta_4$  and  $\beta_5$ )  
 $\alpha$  = constant  
 $\epsilon_{it}$  = random error term  $i^{th}$  bank on year t

### 3.3. Data

#### 3.3.1. Sample Size and Sample Selection Procedure

NRB (2020) lists 28 commercial banks in Nepal. Total commercial banks are a population of this study. Out of 28 commercial banks, five commercial banks are the sample of the study. They are namely *Nepal bank ltd*, *Himalayan Bank ltd*, *Nepal SBI bank ltd*, *Everest bank ltd* and *NIC Asia bank ltd*. Its selection procedure is based for representative and proportional to the different categorical commercial banks including government owned bank, joint venture bank and private commercial bank. Thus, the sample commercial banks are as follows.

Table 1: Sample Bank

S.N.	Name of Bank	Nature & Ownership of Bank
1	Nepal bank ltd	Government Owned
2	Himalayan Bank ltd	Joint Venture





S.N.	Name of Bank	Nature & Ownership of Bank
3	Nepal SBI bank ltd	Joint Venture
4	Everest bank ltd	Private
5	NIC Asia bank ltd	Private

Source: *NRB, 2018*

Bank selection procedure is based on the categorical representation and proportion.

### 3.3.2. *Nature and Sources of Data*

This study employs 15 years' time series data from 2000/01 to 2017/18 of the sample commercial banks. Its secondary sources are monthly and annual published by commercial banks, Nepal Rastra Bank (NRB) and Ministry of Finance (MoF).

### 3.3.3. *Data Analysis Tools and Management*

**For Objective I**, the study uses descriptive analysis including status and trend analysis of total deposit and fixed deposit of banks of Nepal. In the analysis, the study employs line and bar diagram.

**For Objective II**, the study employs descriptive statistics, correlation analysis and multiple regression models.

## 4. **Overview of Bank Deposit and Fixed Deposit**

A theoretical and empirical literatures mention bank deposit as a key driver of capital formation in Nepal. The history of the bank deposit is of 83 years. It started in 1937 A.D. after the establishment of Nepal Bank limited. However, its informal history is of 2000 years. In the 1980s, it received top priority of the monetary policy after the economic reform as the implementation of Structural Adjustment Program (SAP) I and II. The reform opened up private and foreign banks such as Nepal Arab Bank (1984), Grind lays Bank (1987), Standard Chartered Bank Nepal Ltd (1993), Standard Chartered Grind lays Australia and UK, Himalayan Bank ltd (1993), Habib Bank ltd, Pakistan, Nepal SBI Bank limited (1993), Nepal Bangladesh Bank ltd (1993), Everest bank limited (1994), Bank of Kathmandu Limited (1995), etc. Thus, the bank deposit reached at top point. It derailed badly after the beginning of the conflict from 1996 to 2006. It could recover until the peace agreement accord. In 2007, 194 financial and non-financial institutions received the license from Nepal Rastriya Bank. In 2018, only 151 financial and non-financial institutions are in the operational. Out of total financial and non-financial institutions, there are 28 commercial banks with 3023 branches, 33 development banks with 993 branches, 25 finance companies with 186 branches, and 65 micro credit institutions with 4202 branches.

In 2018, the total deposit has reached at 24.71 billion Nepalese Rupees that is 80% of the commercial banks. Out of it, the bank has mobilized 60% deposit into credit investment (see in figure 1). It is 82.19% of GDP ratio (see in figure 2)

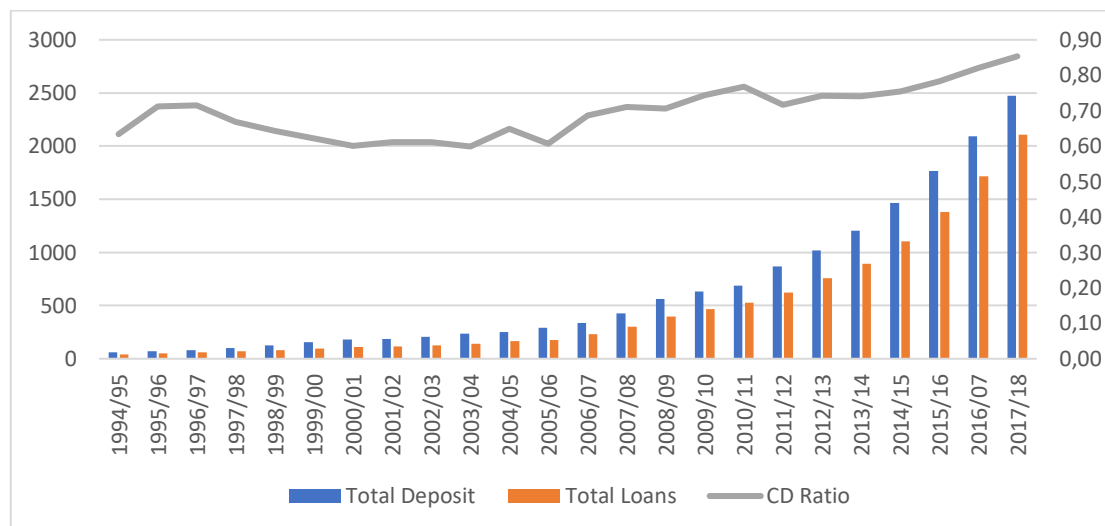


Figure 1: **Total Credits and CD Ratio of Commercial Banks**  
 Source: *Nepal Rastriya Bank, 2020*

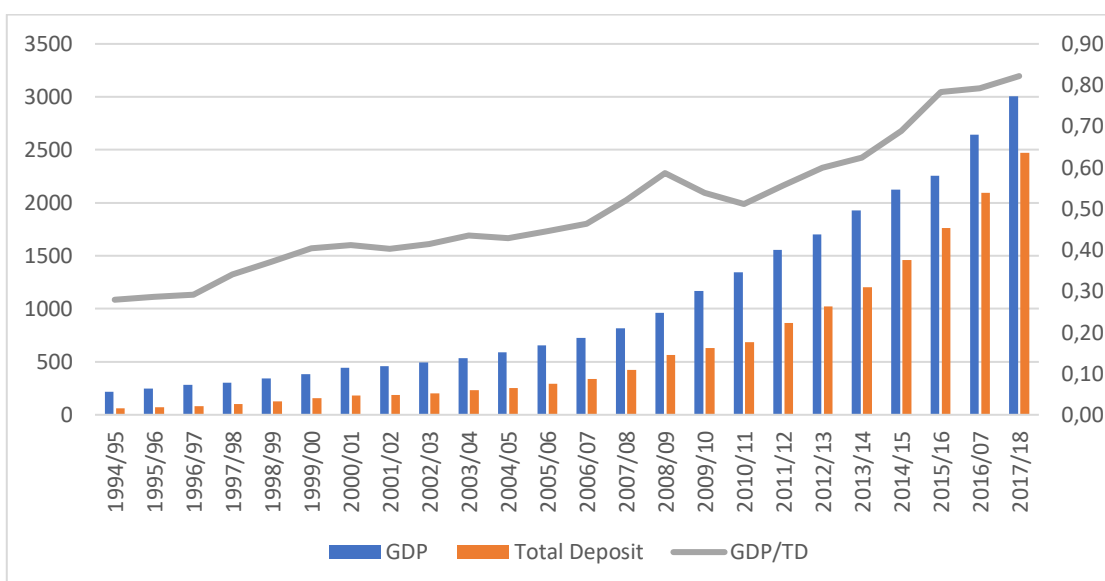


Figure 2: **GDP to Total Deposit of Commercial Banks**  
 Source: *Nepal Rastriya Bank, 2020*

## 5. Results and Discussion

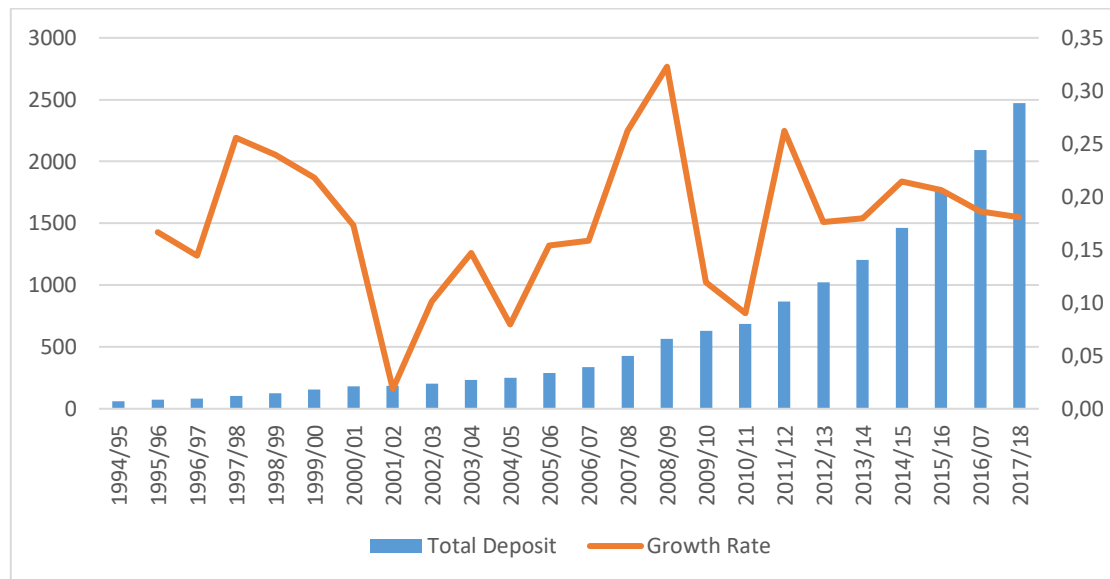
### 5.1. Result I: Status and Trend of Total Deposit and Fixed Deposit

Figures 3, 4 and 5 illustrate the status and trend of total deposit and fixed deposit. Left column represents to million Nepalese Rupees of total and fixed deposit and right column refers to percent of the growth of total and fixed deposit.

#### 5.1.1. Status of Total and Time Deposit

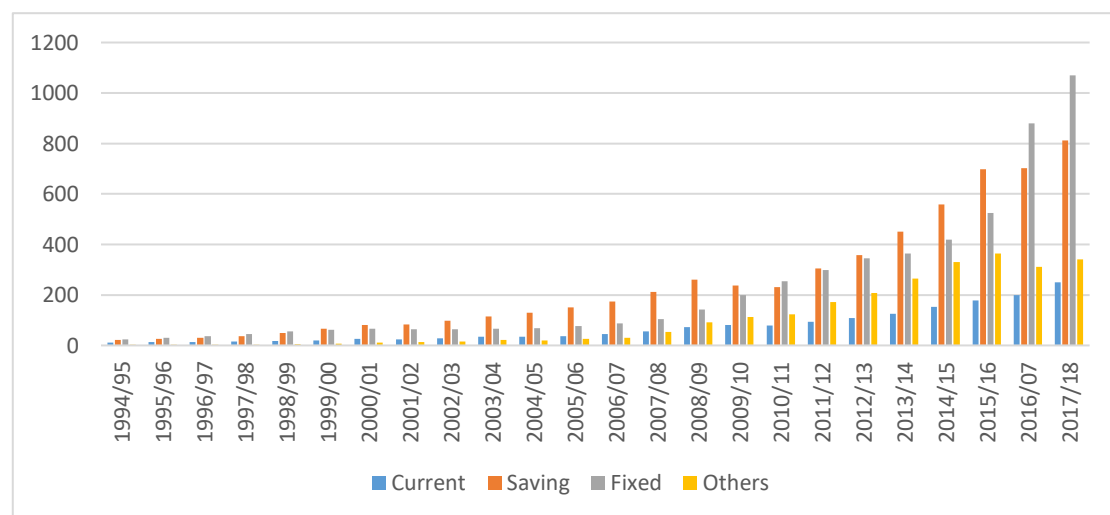
In 2018, 2863.59 billion Nepalese Rupees total deposit contributes to the bank liquidity. In this total deposit, the commercial bank shares 86.29 %, along with the shares of other financial institutions: development banks, finance companies and micro credit institutions (NRB, 2018). On average, the share of the commercial banks in last three consecutive years (2015, 2016, & 2017) was 80.6 % (see in figure 1). On average, each commercial bank

holds 88 billion Nepali Rupees. The report of NRB (2018) ranks a better performance of the commercial banks. One of its reasons is the growth of credibility, transparency, and network, along with the regulatory policy of the central bank of Nepal. Thus, total deposit is a major source of bank liquidity.



**Figure 3:** Trend of Total Deposit and Growth Rate of the commercial bank  
Source: *Nepal Rastrriya Bank, 2020*

Total deposit of the commercial banks is comprised of three types of deposits: 43% time deposit, 33 % saving deposit and 24% current deposit. Thus, fixed deposit is its major source (see in figure 4).



**Figure 4:** Types of Deposit of the Commercial Banks  
Source: *Nepal Rastrriya Bank, 2020*

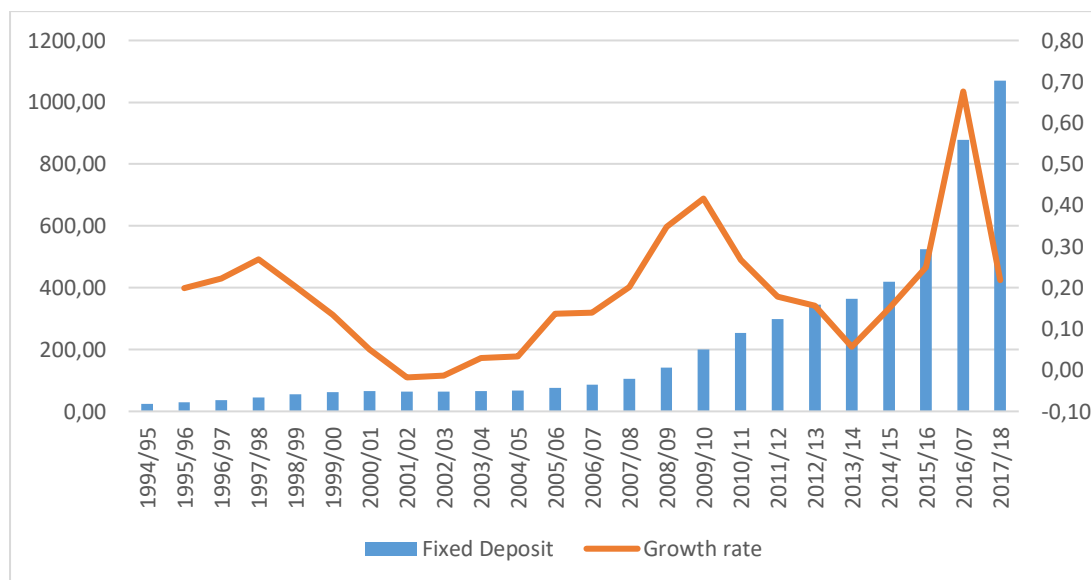
In 2018, the fixed deposit is 1070.69 Billion Nepali Rupees. It is 41 times higher than 26 billion Nepali Rupees in the fiscal year 1994/95 (see in figure 4 and 5). This growth of share has strengthened total deposit and bank liquidity for financial stability and long-term finance.



### 5.1.2. Trend of Total and Fixed Deposit

Trend line of total deposit from 1994/95 to 2017/18 is positively increasing with 17.6% average growth rate. One of its reasons is the 1990's economic reform, along with global integrity and financial liberalization and the entry of commercial banks. The fluctuating trend line is due to the conflict from 1996 to 2006. Another reason is positively increasing trend of fixed deposit from 1994/95 to 2017/18. One of its reasons is higher interest on fixed deposit, growing per capita income, remittance income and increasing financial awareness. Thus, the trend line of bank liquidity is positively increasing.

Figure 5: Fixed Deposit (Time Deposit) and Growth Rate of the Commercial Bank



Source: Nepal Rastriya Bank, 2020

### 5.1.3. Time deposit and total deposit ratio

The time deposit and total deposit ratio is 43% (see in figure 6). Over 23 years, the ratio is expansionary. Its positive outcome is expansionary bank liquidity. This result is due to key policy logics: a) time deposit is a long periodic nature, b) It will helpful to maintain bank liquidity c) the bank can use such deposit for long and short-term profitable projects; d) such deposit's probability of renewal is higher and e) depositors have not alternative profitable areas for their investment.

## 5.2. Result II: Determinants of Time Deposit

### 5.2.1. Descriptive Statistics of Variables

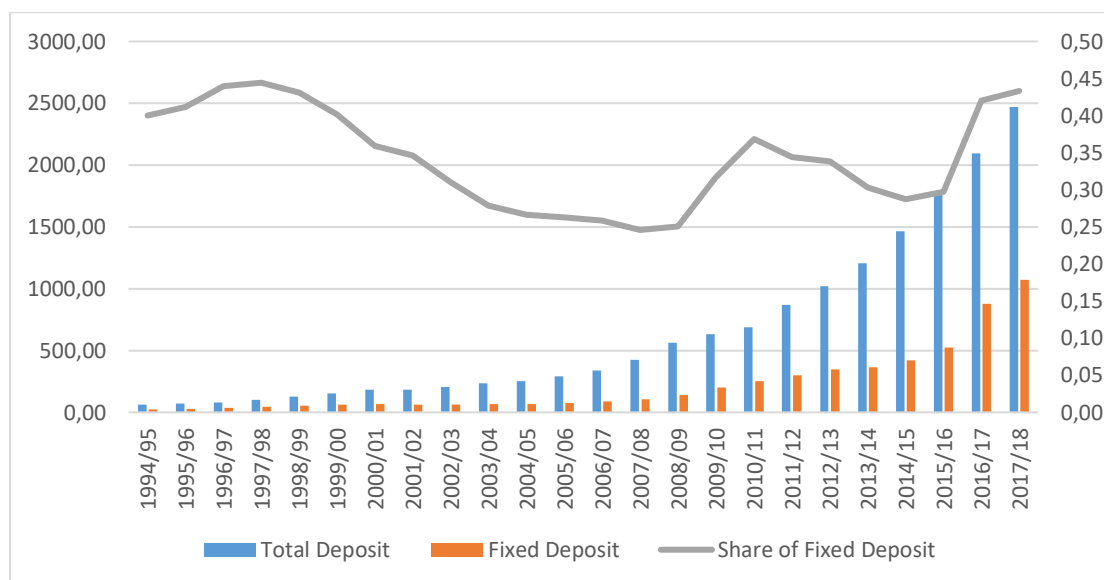
Table 2 presents mean and standard deviation of key variables used in the econometric model. In column 1, there are 6 key variables such as TD as dependent variable and GDP per capita (GDPPC), Interest rate (IR), Inflation rate (INFR), USD exchange rate (USDR) and average number of banks branches (ANB) as independent variables.

Table 3 shows the result of the econometric model in which TD is dependent variable and GDP per capita (GDPPC), Interest rate (IR), Inflation rate (INFR), USD exchange rate (USDR) and average number of banks branches (ANB) are independent variables. There are 6 unknown parameters:  $\alpha$ ,  $\beta_1, \beta_2, \beta_3, \beta_4$ , and  $\beta_5$ . In the result of the econometric model, there are  $\alpha$  parameter as constant,  $\beta_1$  as marginal change of GDP per capita (GDPPC),  $\beta_2$

as Interest rate (IR) ,  $\beta_3$  as Inflation rate (INFR) ,  $\beta_4$  as USD exchange rate (USDR), and  $\beta_5$  as average number of banks branches (ANB).

**Table 2:** Mean and Standards Deviations: TD, GDPPC, IR, INFR, USDR and ANB

Variables	2000/01-2017/18
TD	13502(12787)
GDPPC	47980(27401)
IR	6.8(2.12)
INFR	6.89(2.9)
USDR	82.35(13.95)
ANB	52(46)



**Figure 6:** Share of Fixed Deposit (Time Deposit) to Total Deposit  
Source: *Nepal Rastriya Bank, 2020*

**Table 3:** Result of Model

Dependent variable: FD						
Regressor	1	2	3	4	5	6
Constant	-7913(6128)					
GDP per capita		213,978.60(59,634.83)				
Interest rate (IR)			783.29(271.83)			
Inflation rate (INFR)				-349.83(180.07)		
USD exchange rate (USDR)					75.43(84.23)	
average number of banks branches (ANB)						83.50(14.02)
$R^2=0.9845$ , $R^2=0.9781$ , F test=153.39						
Significance level: Constant (.218), GDP per capita (GDPPC)(.003), Interest rate (IR)(.013) , Inflation rate (INFR)(.074) , USD exchange rate (USDR) (.382), and average number of banks branches (ANB)(.000)						

## 6. Discussion

Above results of the econometric model carries a query: whether external (GDP per capita, inflation rate and USD exchange rate) and internal (interest rate, and average number of bank branches) determines time deposit (TD) inflow in the commercial banks of Nepal. In



this query, the results of the econometric model estimate unknown six parameters:  $\alpha$ ,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$ ,  $\beta_4$ , and  $\beta_5$ . Marginal change of GDP per capita ( $\beta_1$ ) is 213,978.60. Similarly, it is followed by 783.29 marginal change of interest rate ( $\beta_2$ ), -349.83 marginal changes of inflation rate ( $\beta_3$ ), 75.43 marginal change of USD exchange rate ( $\beta_4$ ) and 83.50 marginal change of average number of bank branches ( $\beta_5$ ). Except for negative relationship between time deposit and inflation rate, all parameters: external (GDP per capita) and internal (interest rate, USD exchange rate, and average number of bank branches) have positive relationship with fixed deposit. It means the growth of GDP per capita, interest rate, USD exchange rate, and average number of bank branches expanding time deposit but the growth of inflation rate contracts time deposit. In the result of the econometric model, P value of GDP per capita, interest rate and average branch of banks are significant in less than 0.05 %. Similarly, inflation rate is significant in less than 1% and US exchange rate is significant in less than 10%. The result of R<sup>2</sup> is 0.98. It means the model is explanatory and valid. An F statistics of 153.39 with probability 0.000 indicates the significance of the model explaining the independent variables that determines the fixed deposit of the commercial banks.

In the above result of the econometric model, the positive relationship between time deposit and interest rate illustrates that if 1 % interest rate increases, the commercial bank will expand time deposit by 783.29 million Nepalese Rupees assuming the remaining variables are constant. Similarly, if the branch of the commercial bank increases by 1 unit, time deposit expands by 83.50 million Nepalese Rupees. These internal variables are as the bank policy of the commercial bank. These independent variables significantly explain time deposit as dependent variable. It illustrates their powerful explanatory to the fixed deposit of the bank in the model, although these variables depend on the bank policy of the commercial banks as per their status of bank liquidity and demand of credit in the market. When non-economic variable-political instability due to the conflict from 1996 to 2006, economic variables-economic reform, and open economic policy influenced the bank policy of the commercial bank, the trend line of the time deposit fluctuated. Therefore, the commercial banks use these bank instruments as per their relevant.

Similarly, GDP per capita, inflation rate and US exchange are external variables. In these variables, the commercial banks are not determinants, except for follower. GDP per capita relates to the overall economy's performance. Inflation rate and US exchange are goods and service market's equilibrium and foreign currency demand and reserve. The result of the model shows that if 1 GDP per capita expands, the time deposit will expand by 213,978.60. Similarly, if US exchange rate expands by 1, time deposit will expand by 75.43. If inflation rate increases by 1, fixed deposit contracts by -349.83. These external variables including GDP per capita, inflation rate, and US exchange rate influence the monetary policy and the bank policy of the commercial bank. When these external variables are better, the time deposit will be better. If not, the time deposit will contract. Thus, the external variable is supplementary and complimentary to the internal variable for the growth of time deposit and bank liquidity.

## 7. Conclusion

Maintaining bank liquidity is a major goal of monetary policy and the commercial bank for financial stability and performance. One of its determinants is the time deposit of the commercial bank. In this context, this paper analyzes the effects of the determinants of time deposit in the banks. The result reveals a positive trend of fixed deposit from 1994/95 to 2017/18, like a positive trend of total deposit from 1994/95 to 2017/18. Similarly, the result of the model shows that GDP per capita, US exchange rate, interest rate and the branch of the bank are positively and significantly determinants to the time deposit of the commercial bank but inflation rate is negatively and determinant with significance. The internal variables are more determinants than the external variables to the time deposits. The paper concludes the fixed deposit that is a reliable and long-term source to main the bank liquidity of the commercial bank for their financial stability and performance depends

on more the internal variables than the external variables. Therefore, the commercial bank should improves the competitiveness and smartness of bank policy to mobilize small scattered resources all over the country through the brand of the bank, the attractive and motivating interest rate policy and increasing branch of the commercial banks for higher rate of capital formation, investment and economic growth.

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