Effect of free cash flow on the profitability of Nepalese commercial banks

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Abstract

This study investigates the impact of free cash flow on the profitability of Nepalese commercial banks. The study analyzes secondary data of 20 commercial banks from 2016/17 to 2020/21, using return on assets and return on equity as dependent variables, and free cash flow, cash flow from investing activities, cash flow from financing activities, dividend payout ratio, current ratio, and bank size as independent variables. The study finds that free cash flow has a positive effect on return on assets and return on equity, while leverage has a negative effect. Cash flow from investing and financing activities has a positive effect on return on assets, and the dividend payout ratio has a positive effect on return on equity. Bank size also has a positive effect on both return on assets and return on equity. However, the current ratio has a negative effect on both return on assets and return on equity. These findings suggest that commercial banks in Nepal can improve their profitability by effectively managing their free cash flow, cash flow from investing and financing activities, dividend payout ratio, and bank size, while minimizing their leverage and current ratio.

Key words: Return on assets, return on equity, free cash flow, investing activities, financing activities, dividend payout ratio, firm size, and leverage.

I. Introduction

Efficient management of cash prevents loss of money due to theft or error in processing transactions. Cash management is an important aspect of firm's operations and growth. The objective of cash management is to have adequate control over the cash position, so as to avoid the risk of insolvency and use the excessive cash in some profitable way (Frazer, 2016). A firm's financial performance vests with its policies and cash flows. The firm should be capable of generating cash through operating, financing and investing activities.

Moreover, a firm's failure in compliance with proper management in operating cash flows might lead to a decrease in financial performance. Therefore, every firm should be able to manage its cash flows to reach the level of performance. A positive cash management indicates the ability of a firm to pay off its short-term obligations as and when they fall due. On the other hand, a negative cash management indicates firm's inability to finance its short-term debts when due (Singh and Asress, 2011).

Khushi and Sulaiman (2020) investigated the impacts of firm's profitability measures on the free cash flow. The study found that there is a significant and positive relationship between the profitability and free cash flow of the firm. However, stock return has a significant

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negative relation with free cash flow. Abughniem *et al*. (2020) explored the effect of free cash flow on performance of companies in Amman Stock Exchange (ASE). This empirical study showed that free cash flow has significant effect only on the return on assets and market value per share. Nwuba *et al*. (2020) examined the impact of FCF on the profitability of quoted manufacturing firms in the Nigerian and Ghana stock exchanges. The results showed a positive but insignificant relationship between FCF and ROA both for Ghana and Nigerian manufacturing firms. Dewi *et al*. (2019) determined the effect of free cash flow on firm value with dividend payout and investment opportunity set as mediator of the companies listed on the Main Board Stock Index in Indonesian Stock Exchange for 2013-2017. The study found that free cash flow has a positive significant effect on firm value and dividend payout. Similarly, free cash flow has a negative effect on investment opportunity set. Moreover, dividend payout has a positive significant effect on firm value, and investment opportunity set has a positive significant effect on firm value. Furthermore, dividend payout act as a mediator on the effect of free cash flow on firm value. Thangjam and Mahendra (2015) concluded that there is a positive correlation between free cash flow of the firms and its profitability. Thomas (2000) found that there is a positive relationship between free cash flow and sales growth contributing to the profitability of the firm. The firm with higher cash flows are likely to face a conflict of interest between the managers and the shareholders.

Ahmed *et al.* (2018) examined whether there is a positive or negative relation between the retention of FCF for a firm and its profitability. The empirical study showed a mix of both positive and negative relationship between the variables. Ambreen and Aftab (2016) determined the impact of free cash flows on the profitability of firms listed at the Karachi Stock Exchange (KSE). The study revealed that free cash flow and size of firm influence firms' profitability while capital liquidity does not influence much on dependent variable profitability. Ali *et al*. (2018) investigated the effect of free cash flow on the profitability of firms listed in automotive sector of Germany. The study found that there was a positive relationship between the free cash flows and profitability of listed firms. However, leverage has an inverse insignificant impact on profitability (ROA). Jadah *et al*. (2021) examined the link between free cash flow and profitability of companies. The study found that managers cannot influence the level of profitability by the implementation of any working capital strategy; i.e., the working capital policy does not interact with profitability. In addition, profitability is closely related to inventory days held and account payable days, but reverse to days receivables.

Soet *et al.* (2018) examined a relationship between financing cash flow management and financial performance of mutual funds in Kenya. The study found that there is a significant negative impact of financing cash flow management on return on assets and return on equity. Yeo (2018) investigated how cash flow influences the levels of investment and dividends in the shipping industry. The study found that free cash flow is a significant determinant of investment and dividends which means greater free cash flow leads firms to increase investment and reduce dividends. Nakhaei and Jafari (2015) evaluated the relationship of capital structure and free cash flows with financial performance of companies listed on TSE during 2009 to 2013. The study showed that capital structure has inverse and significant association with evaluation criteria of financial performance (return

on asset, annual stock return and economic value added) and firm size. Similarly, there is a direct and significant correlation between free cash flow and evaluation criteria of financial performance (return on asset, annual stock return and economic value added) and firm size. Ikechukwu *et al*. (2015) ascertained the effect of cash flow statement on companies' profitability in Nigeria. The study revealed that operating and financing cash-flows have significant positive effect on company's profitability in the banking sector of Nigeria. The study also empirically verified that investing cash flow has significant negative effect on the profitability.

Lohonauman and Budiarso (2021) determined the effect of free cash flow and profitability on dividend payout ratio at LQ45 Index Companies listed on the Indonesian Stock Exchange 2011-2018. The study indicated that free cash flow does not affect the level of dividend payout ratio. However, profitability has a significant effect on dividend payout ratio which shows that profitability affects the level of dividend payout ratio. Wibowo and Lusy (2021), using the data from BEI, a mining sector company from 2016 to 2018 with a population of 48 company data, revealed that free cash flow, company growth and profitability as measured by return on assets have a significant effect on debt policy. Profita and Ratnaningsih (2016) investigated the impact of free cash flow on the firm value of manufacturing companies listed in Indonesia Stock Exchange. The study found that free cash flow has no positive impact on firm value. Return on assets (ROA) has emerged as the key ratio for bank profitability evaluation and has become the most common measure of bank profitability in the literature (Athanasoglou *et al*., 2008). There is a significant relationship between the return on assets (ROA) of the firm and free cash flow (Wang, 2010). Elahi *et al.* (2021) examined whether operating cash flows influence banks' financial stability in Pakistan. The study employed annual panel data collected from annual reports of 20 commercial banks listed on the Pakistan Stock Exchange for the year 2011 to 2019. The study showed that operating cash flows and net interest margin significantly and positively influenced banks' financial stability. However, the cost to income ratio and advances net of provisions to total assets ratio significantly and negatively associated with banks' financial stability. Hau (2017) examined the impact of free cash flows on firm performance of manufacture, trade and real estate's sectors by using data of listed firms on Hochiminh Stock Exchange. The study found that free cash flows have a positive effect on firm performance for all sectors.

In context of Nepal, Marahatta *et al*. (2016) examined the determinants of bank's performance in Nepalese commercial banks. The study showed that higher the quality of assets, bank size, and GDP growth of a nation and liquidity of a bank, higher would be the return on assets and return on equity. Shrestha (2016) investigated the impact of financial investment on the profitability of Nepalese commercial banks. The study showed that long term investment has a positive correlation with return on assets. Similarly, short term investment has also positive correlation with return on assets. Moreover, Pradhan and Khadka (2017) examined the effect of debt financing on the profitability of the Nepalese commercial banks. The study found that there is a positive relationship of banks' profitability with short term debt to total assets, interest coverage ratio and size of the banks. It indicates that increase in short term debt to total assets, interest coverage and

size lead to increase in bank profitability. However, profitability is negatively related to long term debt to total assets, total debt to total assets and debt to equity ratio.

The above discussion shows that empirical evidences vary greatly across the studies on the impact of free cash flow on the profitability of banks. 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 major purpose of the study is to examine the impact of free cash flow on the profitability of Nepalese commercial banks. Specifically, it examines the relationship of free cash flow, cash flow from investing activities, cash flow from financing activities, dividend payout ratio and current ratio with the profitability of Nepalese commercial banks.

The remainder of the study is organized as follows: Section two describes the sample, data and methodology. Section three presents the empirical results and the final section draw conclusions and discuss the implications of the study findings.

II. Research Methodology

The study is based on the secondary data which were gathered from 20 commercial banks for the study period of 2016/17 to 2020/21, leading to a total of 100 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
Government-owned Banks			
1	Rastriya Banijya Bank Limited	2016/17- 2020/21	5
2	Nepal Bank Limited	2016/17- 2020/21	5
Joint Venture Banks			
3	Nepal SBI Bank Limited	2016/17- 2020/21	5
4	Himalayan Bank Limited	2016/17- 2020/21	5
5	Everest Bank	2016/17- 2020/21	5
6	NMB Bank	2016/17- 2020/21	5
Private Banks			
7	Machhapuchchhre Bank Limited	2016/17- 2020/21	5
8	Citizens Bank International Limited	2016/17- 2020/21	5
9	Global IME Bank Limited	2016/17- 2020/21	5
10	Kumari Bank Limited	2016/17- 2020/21	5
11	Mega Bank Nepal Limited	2016/17- 2020/21	5
12	NIC Asia Bank Limited	2016/17- 2020/21	5
13	Prime Commercial Bank Limited	2016/17- 2020/21	5
14	Sanima Bank Limited	2016/17- 2020/21	5
15	Prabhu Bank Limited	2016/17- 2020/21	5
16	Nepal Investment Bank Limited	2016/17- 2020/21	5
17	Bank of Kathmandu Limited	2016/17- 2020/21	5
18	Sunrise Bank Limited	2016/17- 2020/21	5
19	Civil Bank Limited	2016/17- 2020/21	5
20	Siddhartha Bank Limited	2016/17- 2020/21	5
Total number of observations			**100**

The study employed stratified sampling method. The main sources of data include Banking and Financial statistics published by Nepal Rastra Bank, reports published by Ministry of Finance and the annual report of respective 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.

The model

The model used in this study assumes that profitability depends upon free cash flow of the bank. The dependent variables selected for the study are return on assets and return on equity. Similarly, the selected independent variables are free cash flow, cash flow from investing activities, cash flow from financing activities, dividend payout, current ratio, firm size and leverage. Therefore, this study develops the following models:

$ROA = \beta_0 + \beta_1 FCF + \beta_2 INV + \beta_3 FIN + \beta_4 DIV + \beta_5 CR + \beta_6 FS + \beta_7 LEV + e$

$ROE = \beta_0 + \beta_1 FCF + \beta_2 INV + \beta_3 FIN + \beta_4 DIV + \beta_5 CR + \beta_6 FS + \beta_7 LEV + e$

Where,

ROA= Return on assets as measured by the ratio of net profit to total assets, in percentage.

ROE= Return on equity as measured by the ratio of net income to shareholders equity, in percentage.

FCF= Free cash flow as measured by differentiating capital expenditure from cash from operations, Rs in billions.

INV= Cash flow from investing activities, Rs in billions.

FIN= Cash flow from financing activities, Rs in billions.

DIV= Dividend payout ratio as measured by ratio of total dividend to net income, in percentage.

CR= Current ratio as measured by ratio of current assets to current liabilities, in percentage.

FS= Firm size as measured by total assets, Rs in billions.

LEV= Leverage as measured by ratio of total liabilities to total assets, in percentage.

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

Free cash flow

Free cash flow (FCF) is defined as the net cash flows of operating cash flows less capital expenditure, inventory cost, and dividend payment (Jensen, 1986). Hubbard (1998) showed that the relationship between free cash flows and profitability is positive as well as significant. A rise in the level of cash flow of a firm leads to a corresponding increase in profits of the firm. Ali *et al*. (2018) showed that there is a significant positive relationship between free cash flow and profitability. Brush *et al*. (2000) revealed that the firm performance and cash flow have a significant positive relationship. Based on it, this study develops the following hypothesis:

H_1: There is a positive relationship between free cash flow and bank profitability.

Cash flow from investing activities

Ikechukwu (2015) found that investing cash flow has significant negative effect on the profitability of the selected Nigerian banks. Yeo (2018) found a negative relationship between leverage and investment which interpretates that debt restricts the scale of

investment by reducing free cash flow. Griffith and Carroll (2001) revealed that the poorly invested free cash flows can negatively impact the profits of the firm if the firm engages in risky investments. Harford (1999) concluded that cash-rich firms are more likely to make acquisitions and that these cash-rich acquisitions are followed by abnormal decline in operational performance. Based on it, this study develops the following hypothesis:

H_2: There is a negative relationship between cash flow from investing activities and bank profitability.

Cash flow from financing activities

Without finance, the companies cannot support their fixed assets, working capital requirements and could not exist in this cut throat competitive business world. There is a positive impact of financing on corporate profitability (Jensen and Meckling, 1976). Stiglitz (1985) found that bank debt enhances managerial performance and improve a project's probability of success by exerting greater influence on its management. Abor (2005) showed positive relationship between short term debt ratio, financing activities and profitability while negative relationship between long term- debt ratio and profitability. Gunde *et al*. (2017) found that the use of financial leverage can have a good effect in the form of increasing return on equity (ROE). Funding decisions proxied by liquidity and leverage have significant effect on profitability (Taroreh and Thaib, 2015). Bam *et al*. (2015) revealed that total debt ratio and financing activities have significant positive impact on the return on assets of the commercial banks. Based on it, this study develops the following hypothesis:

H_3: There is a positive relationship between cash flow from financing activities and bank profitability.

Dividend payout ratio

Dividend is known as the return distributed by the firm in terms of cash, shares and other forms of the earning of the shareholders for their investment in share capital. Ambarish *et al*. (1987) stated that dividend announcements can convey information about the firm's future cash flows generated by existing assets, or about new investment opportunities. Healy and Palepu (1988) found that firms which initiate dividends experience higher growth in earnings in that year and the two subsequent years than similar firms from the same industry. Carroll (1995) found a significant positive relationship between earnings forecast revisions and dividend changes. Similarly, Timothy and Peter (2012) found that there is a strong and positive relationship between dividend payout and firm profitability. Moreover, James and Stephen (2012) found that firms that increase or maintain their dividends show superior financial performance in terms of return on assets to those reducing or eliminating dividends. Furthermore, Arnott and Asness (2003) found that higher aggregate-dividend-payout ratios were related with higher future earnings growth. Based on it, this study develops the following hypothesis:

H_4: There is a positive relationship between dividend payout ratio and bank profitability.

Current ratio

There is a weak positive relationship between liquidity and profitability (Lartey *et al*., 2013). Ajanthan (2013) revealed that there is a significant positive relationship between liquidity and profitability in commercial companies listed in the stock market in Sri Lanka. Zygmunt (2013) found that there is a significant positive effect of the liquidity ratios on the profitability

in the Polish companies. Akter and Mahmud (2014) concluded that there is no significant relationship between current ratio and return on assets. Similarly, Priya and Nimalathasan (2013) found that the current ratio and cash ratio are significantly associated with return on assets. Moreover, Ruziqa (2013) found that the liquidity ratios have positive and significant effect on return on assets. Furthermore, Saleem and Rehman (2011) revealed that there is a significant relationship between liquidity ratios and return on assets. Based on it, this study develops the following hypothesis:

H_5: There is a positive relationship between current ratio and bank profitability.

Firm size

Firm size is a size or scale that shows the size of a company. Firm size is a significant determinant of firm performance (Oyelade, 2019). Vijayakumar and Tamizhselvan (2010) revealed that the influence of firm size on profitability is in positive direction. Velnampy and Nimalathasan (2010) observed that there was a positive relationship between firm size and bank profitability. Moreover, Majumdar (1997) found that larger firms are less productive but more profitable. Furthermore, Goddard *et al.* (2005) concluded that there is a positive relationship between firm size and firm profitability. Similarly, Fiegenbaum and Karnani (1991) revealed that there is a positive relationship between firm size and profitability. Based on it, this study develops the following hypothesis:

H_6: There is a positive relationship between firm size and bank profitability.

Leverage

Kester (1986) revealed the existence of an inverse association between profitability and debt ratios. In addition, Rajan and Zingales (1995) found a negative relationship between profitability and leverage in the major industrialized countries namely the G-7 countries. Similarly, Pradhan and Khadka (2017) concluded that there is a negative influence of financial leverage on profitability. Moreover, Yegon *et al*. (2014) revealed a non-significant negative association between profitability and financial leverage in Kenya. Based on it, this study develops the following hypothesis:

H_7: There is a negative relationship between leverage and bank profitability.

III. Results and Discussion

Descriptive statistics

Table 2 presents the descriptive statistics of the selected dependent and independent variables during the period 2016/17 to 2020/21. This table shows the descriptive statistics of dependent and independent variables of 20 Nepalese commercial banks for the study period of 2016/17 to 2020/21. The dependent variables are ROA (Return on assets as measured by the ratio of net profit to total assets, in percentage) and ROE (Return on equity as measured by the ratio of net income to shareholders equity, in percentage). The independent variables are FCF (Free cash flow as measured by differentiating capital expenditure from cash from operations, Rs in billions), INV (Cash flow from investing activities, Rs in billions), FIN (Cash flow from financing activities, Rs in billions), DIV (Dividend payout ratio as measured by ratio of total dividend to net income, in percentage), CR (Current ratio as measured by ratio of current assets to current liabilities, in percentage), FS (Firm size as measured by total assets, Rs in billions), LEV (Leverage as measured by ratio of total liabilities to total assets, in percentage).

Table 2

Descriptive statistics

Variables	Minimum	Maximum	Mean	SD
ROA	0.01	15.98	2.78	3.94
ROE	5.46	95.90	21.95	23.12
FCF	8.18	10.82	9.64	0.51
INV	0.91	10.52	1.43	1.97
FIN	5.29	9.98	8.82	0.70
DIV	0.00	9.37	6.14	3.65
CR	0.08	2.30	1.01	0.20
FS	7.62	25.55	12.04	3.62
LEV	0.10	8.32	0.96	0.76

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

Variables	ROA	ROE	FCF	INV	FIN	DIV	CR	FS	LEV
ROA	1								
ROE	0.471**	1							
FCF	0.083	0.055	1						
INV	0.081	-0.008	0.278*	1					
FIN	0.053	-0.052	-0.098	-0.073	1				
DIV	-0.011	0.018	0.232*	-0.158	0.030	1			
CR	-0.018	-0.052	-0.104	-0.142	0.016	-0.022	1		
FS	0.094	0.065	-0.007	-0.043	0.003	0.176	0.010	1	
LEV	-0.013	-0.041	0.004	-0.014	0.104	0.032	-0.038	-0.040	1

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

Table 3 shows that free cash flow has a positive relationship with return on assets. It means that increase in free cash flow leads to increase in return on assets. However, there is a negative relationship between leverage and return on assets. It means that increase in leverage leads to decrease in return on assets. In contrast, cash flow from investing activities has a positive relationship with return on assets. It shows that increase in cash flow from investing activities leads to increase in return on assets. Furthermore, there is a positive relationship between cash flow from financing activities and return on assets. It indicates that increase in cash flow from financing activities leads to increase in return on assets. In addition, dividend payout ratio has a negative relationship with return on assets.

It indicates that increase in dividend payout ratio leads to decrease in return on assets. Further, this study shows that there is a positive relationship between bank size and return on assets. It means that larger the bank size in terms of total assets, higher would be the return on assets. In contrast, current ratio has a negative relationship with return on assets. It means that higher the current ratio, lower would be the return on assets.

Similarly, the result also shows that free cash flow has a positive relationship with return on equity. It means that increase in free cash flow leads to increase in return on equity. However, there is a negative relationship between leverage and return on equity. It means that increase in leverage leads to decrease in return on equity. In contrast, cash flow from investing activities has a negative relationship with return on equity. It shows that increase in cash flow from investing activities leads to decrease in return on equity. Furthermore, there is a negative relationship between cash flow from financing activities and return on equity. It indicates that increase in cash flow from financing activities leads to decrease in return on equity. In addition, dividend payout ratio has a positive relationship with return on equity. It indicates that increase in dividend payout ratio leads to increase in return on equity. Further, this study shows that there is a positive relationship between bank size and return on equity. It means that larger the bank size in terms of total assets, higher would be the return on equity. In contrast, current ratio has a negative relationship with return on equity. It means that higher the current ratio, lower would be the return on equity.

Regression analysis

Having indicated the Pearson's correlation coefficients, the regression analysis has been carried out and results are presented in Table 4. More specifically, it shows the regression results of free cash flow, cash flow from investing activities, cash flow from financing activities, dividend payout ratio, current ratio, firm size and leverage with return on asset of Nepalese commercial banks.

Table 4 shows that the beta coefficients for free cash flow are positive with return on assets. It indicates that free cash flow has a positive impact on return on assets. The finding is similar to the findings of Senyo *et al*. (2015). The beta coefficients for cash flow from investing activities are positive with return on assets. It indicates that cash flow from investing activities has a positive impact on return on assets. This finding is in consistent with the findings of Annor and Obeng (2017). Similarly, the beta coefficients for firm size are positive with return on assets. It indicates that firm size has a positive impact on return on assets. This finding is in consistent with the findings of Chiorazzo *et al.* (2008). The beta coefficients for cash flow from financing activities are positive with return on assets. It indicates that cash flow from financing activities has a positive impact on return on assets. This finding is similar to findings of Ameer (2015). Likewise, the beta coefficients for leverage are negative with return on assets. It indicates that leverage has a negative impact on return on assets. This finding is similar to finding of Martiningtiyas and Nitinegeri (2020).

Table 4

Estimated regression results of free cash flow, cash flow from investing activities, cash flow from financing activities, dividend payout ratio, current ratio, firm size and leverage with return on asset

Model	Intercept	Regression coefficients of							Adj. R_bar^2	SEE	F-value
		FCF	INV	FIN	DIV	CR	FS	LEV			
1	1.171 (4.386)**	0.038 (1.943)							0.021	0.561	3.774
2	1.869 (4.182)**		0.023 (0.425)						0.001	0.569	0.181
3	1.775 (24.968)**			0.056 (1.815)					0.017	0.562	3.295
4	1.868 (10.22)**				-0.004 (1.064)				0.001	0.567	1.132
5	5.849 (4.296)**					-0.097 (3.064)**			0.059	0.55	9.386
6	1.316 (11.843)**						0.104 (3.612)**		0.082	0.543	13.045
7	1.206 (2.60)**							-0.124 (3.617)**	0.113	0.538	5.976
8	5.955 (4.350)**	0.031 (1.801)		0.049 (1.438)	-0.002 (0.332)	-0.091 (3.048)**			0.068	0.547	4.279
9	7.754 (3.529)**	0.012 (0.489)	0.021 (1.771)	0.053 (1.621)	-0.003 (0.661)	-0.061 (2.922)**	0.112 (3.880)**	-0.168 (4.22)**	0.164	0.519	5.371

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. *Return on asset is the dependent variable.*

Table 5 shows the estimated regression results of free cash flow, cash flow from investing activities, cash flow from financing activities, dividend payout ratio, current ratio, firm size and leverage with return on equity. The results are based on panel data of 20 commercial banks with 100 observations for the period of 2016/17-2020/21 by using the linear regression model and the model is $ROE = \beta_0 + \beta_1 FCF + \beta_2 INV + \beta_3 FIN + \beta_4 DIV + \beta_5 CR + \beta_6 FS + \beta_7 LEV + e$ where, the dependent variable is ROE (Return on equity as measured by the ratio of net income to shareholders equity, in percentage). The independent variables are FCF (Free cash flow as measured by differentiating capital expenditure from cash from operations, Rs in billions), INV (Cash flow from investing activities, Rs in billions), FIN (Cash flow from financing activities, Rs in billions), DIV (Dividend payout ratio as

measured by ratio of total dividend to net income, in percentage), CR (Current ratio as measured by ratio of current assets to current liabilities, in percentage), FS (Firm size as measured by total assets, Rs in billions), LEV (Leverage as measured by ratio of total liabilities to total assets, in percentage).

Table 5

Estimated regression results of free cash flow, cash flow from investing activities, cash flow from financing activities, dividend payout ratio, current ratio, firm size and leverage with return on equity

Model	Intercept	Regression coefficients of							Adj. R^2	SEE	F-value
		FCF	INV	FIN	DIV	CR	FS	LEV			
1	2.058 (6.906)**	0.085 (3.822)**							0.095	0.627	15.069
2	2.438 (4.730)**		-0.005 (1.479)						0.009	0.656	2.188
3	2.996 (37.361)**			-0.119 (3.401)**					0.073	0.635	11.564
4	2.671 (12.848)**				0.012 (2.620)**				0.042	0.645	6.864
5	9.613 (6.247)**					-0.172 (4.173)**			0.109	0.622	17.411
6	2.605 (21.183)**						0.206 (5.301)**		0.168	0.601	28.101
7	1.231 (4.424)**							-0.216 (5.730)**	0.344	0.534	24.445
8	5.871 (2.736)**	0.041 (1.564)			0.011 (2.496)*	-0.048 (2.247)*	0.006 (5.389)**		0.308	0.548	15.879
9	5.044 (2.254)*	0.05 (1.948)	-0.339 (0.641)	-0.115 (3.461)**	0.003 (0.667)	-0.041 (1.980)*	0.006 (5.665)**	-0.160 (2.220)*	0.357	0.528	13.413

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. Return on equity is the dependent variable.

Table 5 shows that the beta coefficients for free cash flow are positive with return on equity. It indicates that free cash flow has a positive impact on return on equity. The finding is similar to the findings of Senyo *et al*. (2015). The beta coefficients for cash flow from investing activities are negative with return on equity. It indicates that cash flow from

investing activities has a negative impact on return on equity. This finding is in consistent with the findings of Annor and Obeng (2017). Similarly, the beta coefficients for cash flow from financing activities are negative with return on equity. It indicates that cash flow from financing activities has a negative impact on return on equity. This finding is in consistent with the findings of Chiorazzo *et al.* (2008). The beta coefficients for current ratio are negative with return on equity. It indicates that current ratio has a negative impact on return on equity. This finding is similar to findings of Ameer (2015). Likewise, the beta coefficients for firm size are positive with return on equity. It indicates that firm size has a positive impact on return on equity. This finding is similar to finding of Martiningtiyas and Nitinegeri (2020).

IV. Summary and conclusion

A firm with proper cash flow management can increase its financial performance, while improper management might lead to financial failure Free cash flow is an important to any financial institutions since it shows how efficient a firm is at generating cash. Investors use free cash flow to measure whether a firm might have enough cash for dividends or share buybacks. A positive cash management indicates the ability of a firm to pay off its short-term obligations as and when they fall due. On the other hand, a negative cash management indicates firm's inability to finance its short-term debts when due.

This study attempts to analyze the effect of free cash flow on the profitability of Nepalese commercial banks. The study is based on secondary data of 20 commercial banks with 100 observations for the period from 2016/17 to 2020/21.

The study showed that dividend payout ratio, free cash flow, and firm size have positive effect on return on equity of Nepalese commercial banks. However, cash flow from investing activities, cash flow from financing activities, current ratio and leverage have negative effect on return on equity. Similarly, free cash flow, cash flow from investing activities, cash flow from financing activities, and firm size have positive effect on return on assets of Nepalese commercial banks. However, dividend payout ratio, current ratio, and leverage have negative effect on return on assets. The study concluded that leverage is the most influencing factor that explains the changes in return on asset of Nepalese commercial banks. Similarly, the study also concluded that leverage followed by firm size is the most influencing factor that explains the changes in return on equity in context of Nepalese commercial banks.

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