Asian Journal of Economics, Business and Accounting

15(2): 16-23, 2020; Article no.AJEBA.57101
ISSN: 2456-639X

The Impact of the Debt Ratio, Total Assets, and Earning Growth Rate on WACC: Evidence from Nepalese Commercial Banks

Prem Bahadur Budhathoki[1*] and Chandra Kumar Rai[2]

[1]Department of Finance, Mahendra Multiple Campus, Tribhuvan University, Dharan, Nepal.
[2]Department of Accountancy, Mahendra Multiple Campus, Tribhuvan University, Dharan, Nepal.

Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

Article Information

DOI: 10.9734/AJEBA/2020/v15i230210
Editor(s):
(1) Dr. María-Dolores Guillamón, University of Murcia, Spain.
Reviewers:
(1) Nur Setyowati, National Kaohsiung University of Science and Technology, Taiwan.
(2) Alexandre Ripamonti, Ibirapuera University, Brazil.
Complete Peer review History: http://www.sdiarticle4.com/review-history/57101

Original Research Article

Received 01 March 2020
Accepted 07 May 2020
Published 11 May 2020

ABSTRACT

This study examined the impact of the debt ratio, total assets, and earnings growth rate on banks' *WACC*. This study employed bank scope data of twenty-eight commercial banks during the single period of 2018. Altogether, there were 28 observations were made in the study. The ordinary least squares model was used to analyze the data. The results indicated that two predictor variables debt ratio and total assets significantly affected the bank's *WACC*. But the predictor variable earnings growth rate did not significantly affect banks' *WACC.* The results of this study could help bankers and policymakers to take effective action to reduce banks' *WACC.*

Keywords: Capital structure; debt ratio; total assets; earnings growth rate.

1. INTRODUCTION

The capital structure decision is concerned with the choices of an optimal financing mix of debt and equity, which minimizes the weighted average cost of capital (WACC) and maximizes the value of firms. A firm's financing choices have a direct effect on its weighted average cost of capital (WACC). Financing choices also have an indirect effect because they change the risk and required rate of return of debt and equity [1]. Capital structure theory suggests that equity is an expensive source of financing as compared to deposits and borrowings, and an increase in

**Corresponding author: E-mail: pravabbudhathoki@gmail.com;*

equity financing in total capital structure by issuing new equity would increase the *WACC* [2]. The supporters of the higher equity ratio (lower debt ratio) argue that a higher volume of equity capital decreases the bankruptcy cost, increases credit rating, enhances public confidence, increases the risk-bearing capacity of banks, and hence lowers the required rate of return, which eventually decreases the overall *WACC*. On the one hand, it is expected that the cost of debt is lower than the cost of equity because debt holders have a prior claim on the company's earnings and assets. Besides, interest expenses posit tax-saving benefits to the firms. Hence, firms can substantially reduce *WACC* by employing higher financial leverage, which eventually leads to higher market value for firms. On the contrary, it is argued that a higher debt ratio brings bankruptcy cost, which results in lower market value for firms. According to agency cost theory, as financial leverage increases, bondholders impose various types of protective covenants and monitoring devices to protect their interests. Also, they can impose an additional premium on the interest rate, which ultimately increases the overall *WACC* and decreases the value of the firms. Additionally, the trade-off theory states that greater the use of debt increases banks' interest expenses and the bank may not able to meet its financial duties on time. Consequently, the required rate of return on new capital will increase and the probability of bankruptcy cost also increases [3], which lead to increases *WACC* and reduces the market value of the firms.

There are two contrasting hypotheses regarding the performance of commercial banks. First, the traditional structure-conduct-performance (SAP) hypothesis contends that a high market concentration leads to higher profitability. The Nepal government brought a merger and acquisition program in 2007. This merger program reduces the number of banks and increases its capital base and total size of the banks. If the traditional SAP hypothesis is true, the merger program increases the bank's profitability, which reduces the perceived risk of the investors and eventually leads to a decrease in *WACC*; thus increase in the value of firms. This fact can be explained by the fact that a fewer number of banks can make a larger profit by charging a higher interest rate on loans and advances and paying low interest to depositors, which reduces the cost of deposits and borrowing and overall *WACC* of the banks. Due to the contradictory arguments concerning the relationship between *WACC* debt ratio, total firm's size, earnings growth rate, and *WACC*, the effect of the debt ratio, total firm's size, earnings growth on *WACC* is an empirical question in the Nepalese banking sector context.

As noted above, there are many views regarding the relationship between debt ratio, total firm's size, earnings growth rate, and *WACC* appears to be disputable. Many researchers attempt to show the relationship between these dependent and independent variables, especially in the context of the USA, European Union, and Africa. But in the Nepalese context, it is still a widely researchable fact.

This paper makes several contributions: First, this study attempts to establish the relationship between debt ratios, total firm's size, and earnings growth rate with optimal capital structure measure *WACC* –in the context of Nepalese banking sectors. Second, this study helps to policymakers to make optimal capital structure decisions in the Nepalese banking sector to minimize the *WACC* and maximize the value of firms. Finally, our empirical evidence fills the literature gap concerning the predictors and response variables, which are used in the study.

The rest of the study has been presented in this way: Section 2 overviews the literature review and hypothesis development; Section 3 is associated with variables selection and research methods; Section 4 presents empirical results and discussion; and Section 5 ends with the conclusion, implications, and limitations of the study.

2. LITERATURE REVIEWAND HYPO-THESES DEVELOPMENT

In Section 2, we review the literature concerning the relationship between the response variable *WACC* and predictor variables, namely the debt ratio, total assets, and earnings growth rate.

2.1 Debt Ratio and WACC

The capital structure decision is a controversial issue in financial economics literature because some scholars argue that there is an optimal capital structure and other content that there is no optimal capital structure. The pioneer scholars Modigliani and Miller (1958) concluded that there was no gain in financial leverage. Based on assumptions of perfect capital market and no corporate and personal taxes, Modigliani and

Miller (M&M) Proposition I stated that the value of firms is not affected by the firm's capital structure decisions [4]. This proposition stated that if there was no cost of separation, the cream plus skim milk would bring the same price as the whole milk. M & M Proposition II with taxes stated that a firm's cost of equity rises as the firm relies more heavily on debt financing; however, the *WACC* declines as the debt-to-equity ratio grows [5] and maximizes the value of the firm as the firm uses maximum debt. The empirical findings of different studies show that there is a positive relationship between financial leverage and the tax-saving benefit to the firms. For example, studies conducted by DeAngola and Masulis (1980); Codes and Sheffirin (1983) revealed a positive relationship between financial leverage and the tax shield [6,7]. Modigliani and Miller (1958) conducted a study using a cross-section equation from 43 electric utilities during 1947-1948 and 42 oil companies during 1953. They estimated the WACC as the net operating cash flows after taxes divided by the market value of the firm and when regressed against debt ratio; found that *WACC* is not affected by the capital structure and, therefore, that there was no gain to financial leverage [8]. Later on, Weston J. Fred (1963) conducted research using three predictor variables: debt ratio, total assets, and compound growth in earnings and found that there wasa negative and significant effect of debt ratio and compounding growth rate of earnings on *WACC* [9]. This means that financial leverage (debt) and compounding growth rate of earnings of firms have a negative relationship with *WACC* and reduced *WACC* of the firm.

A popular theory-off of capital structure, which was developed by Kuras and Lizenberger [10], stated that the market value of a levered firm is equal to the unlevered market value plus the corporate tax rate times market value of the firm's debt, less the complement of the corporate tax rate times the present value of the bankruptcy cost [10]. This theory states that firms can set their target level of financial leverage by balancing the marginal bankruptcy costs associated with debt obligations against the marginal benefit from the tax shield. The trade-off theory suggests that firms try to maintain optimal leverage to maximize shareholder's wealth. One can argue that under levered firms would only adjust towards a leverage target, overweigh that costs. Thus, if increasing the debt level towards the target requires raising debt, doing so would only be done if the cost of doing so is lower than the benefits of reaching the target. For an over levered firm, decreasing leverage would be the main goal of altering the capital structure. In many cases, a firm would achieve this goal by issuing equity and/or retiring the most expensive sources of debt, which would result in a simpler and more concentrated capital structure [11]. Similarly, another study made by R. S. Hamda (1972) concluded that beta (which measures the systematic risk of the firm) of a levered firm is always greater than that of an unlevered firm. According to him, $B_L = B_U + [1 + (1-t)\ B/S]$ [12]. This implies that the funding cost of debt of the levered firm is higher than that of unlevered firms, resulting in increases in the *WACC*of the firms.

The above static theory of capital structure stated that firms should use more debt because there is little risk of bankruptcy and the value of the tax shield is substantial. However, many large, financially sound, and highly profitable firms use little debt; which is against the expectation of traditional theory [5]. To fill this gap, Myers and Majluf (1984) developed a popular theory of capital structure named the Pecking-order theory. Pecking-order theory predicts that retained earnings will be used first, the safest securities (debt) will be issued next to recover the financial deficits, and common equity will be used as a last resort [13]. Applying the pecking-order theory of capital structure, one would expect that firms with a financial deficit would rely on senior debt as the main source of financing. The first reason behind the use of retained earnings is that the cost of issuing new equity to raise funds can be more expensive due to the higher flotation cost. The second reason behind this is that if the firm's prospects are bright, then the existing shareholders do not prefer to issue new common equity. Due to the contradictory arguments concerning the relationship between *WACC* and debt ratio, the effect of the debt ratio on *WACC* is an empirical question.

2.2 Total Assets, Earnings Growth Rate, and WACC

Banks with higher capital (lower debt ratio) are capable of absorbing any negative shocks and are assumed to possess less insolvency. Higher capital may also incentivize shareholders to monitor management activities, thereby lowering the probability of taking excessive risks by managers [14]. On the other hand, the risk-return hypothesis states that there is a direct relationship exists between risk and return: a higher capital ratio (lower debt ratio) decreases

the risk of the firms and leads to decreases in the *WACC* of the banks. Additionally, the trade-off theory states that greater the use of debt (lower the use of equity) increases banks' interest expenses and the bank may not able to meet its financial duties on time. Consequently, the required rate of return on new capital will increase and the probability of bankruptcy cost also increases [3], which increases the bank's *WACC* and decreases the value of the firms. There are two conflicting arguments regarding the relationship between a firm's assets size, earnings growth rate, and *WACC*. First, larger banks could benefit from economies of scale and greater diversification, which reduces risk and cost, and increases banks' profitability [15,16] Dietrich and Wanzenried [17] argued that larger banks, as compared to smaller banks, are likely to have both economies of scale (increased operational efficiency) and economies of scope (higher degree of product and loan diversification) advantages [17]. Thus, the expectation of a positive effect of the bank's size on profitability leads to lowers the perceived risk of investors and *WACC* and increases the value of a firm. Sinha and Shrama's [15] empirical findings showed a positive and statistically significant relationship with profitability measure, suggesting that larger banks operate at a more efficient level than smaller banks and exploit all economies of scale to reap the higher benefit. Larger banks may have better opportunities for income diversification because they can reach out to new markets and reduce income volatility [14].

Second, it is argued that large banks could have more serious asymmetric information problems and that the increase in the cost of monitoring lending activities could reduce bank profitability [16]. Other scholars argued that extremely large banks would exhibit a negative relationship between size and profitability due to bureaucratic and other size-related reasons. Accordingly, the overall effect needs to be investigated empirically [17]. Larger banks may also suffer from diseconomies of scale due to agency costs, administrative costs, and excessive overhead expenses [14]. Large size could negatively impact bank profitability: The large size is difficult to manage, it needs greater effort, and the resultant increase in the cost is likely to reduce bank profitability [18]. The coefficient of bank size was found to be negative and significant, suggesting a negative impact of bank size on profitability measures. Small banks are easier to manage, and bank managers can concentrate on a smaller number of businesses, thereby leading to higher profitability [19]. Thus, the expectation of a negative effect of the bank's size on profitability leads to a higher perceived risk of investors and an increase in the *WACC* and decreases the value of a firm.Due to the conflicting arguments concerning the relationship between *WACC* and the total size of the banks and earnings growth rate, the effect of the total size of the banks and earnings growth rate on *WACC* is an empirical question.

However, based on the review of literature, the following expected impact of predictor variables on *WACC*;

Table 1.Description of the variables and their expected impact on WACC

Variables	Measurement	Expected effect
WACC	Net operating income divided by total assets	
DR	Total debt divided by total assets	+, -
LNTA	Natural logarithm of total assets	+, -
EGR	One period of growth rate in earnings	-

3. VARIABLES SELECTION AND RESEARCH METHODS

3.1 Variable Selection

3.1.1 Dependent variable

This study examined the impact of the debt ratio, asset size, and earnings growth rate on banks' *WACC*. This study considered the single dependent variable that was *WACC*. The dependent variable *WACC* was measured by dividing net operating income by the total assets of the bank; Modigliani and Miller (1958) used this measure to estimate the *WACC*. Net operating flows after taxes were estimated as net income after taxes plus interest payment on the debt. Therefore, the same process was followed to measure the *WACC* in this study.

3.1.2 Independent variables

Three predictor variables were used in this study. The first was the debt ratio measured by dividing total debt by total assets—a widely used tool to measure banks' leverage. A higher value of the

debt ratio indicates higher financial leverage and vice versa. The second independent variable was the natural logarithm of total assets (a proxy of the bank's size) measured by taking the natural logarithm of total assets. Finally, the third independent variable was the earnings growth rate measured by taking the percentage change in net profit after taxes based on the previous year's net profit after taxes.

3.2 Research Methods

All twenty-eight commercial banks, operating now in Nepal, were considered as the target population size and taken for the study. Due to the nature of the study, a single period of annual data was employed in this study. This empirical study was based on cross-sectional data collected from the bank supervision report 2018 [20] that were published by the central bank of Nepal (i.e., Nepal Rastra Bank). The collected cross-sectional data were analyzed using descriptive statistics, Pearson correlation coefficient, and multiple regression models. Therefore, this research employed a descriptive and explanatory research design. The mean, standard deviation, maximum, and minimum values were used to describe the characteristics of the data. A correlation matrix was used to examine the relationship between a response variable and predictor variables. The correlation matrix helps to identify the multicollinearity problem: A common rule of thumb is that correlations among the independent variables between -0.7 to 0.7 do not cause difficulties [21] Besides, the multicollinearity problem was detected based on *VIF*—a problem that arises if *VIF* is greater than five [22]. Finally, the collected data were analyzed using Statistical Package for Social Sciences (SPSS).

3.2.1 Multiple regression models

To examine the relationship between the dependent variable and independent variables, the following multiple regression model was tested:

$$WACC = \alpha + \beta_1 (DR) + \beta_2 (TA) + \beta_3 (EGR) + \in_{ij}$$

Where *WACC* = weighted average cost of capital, *DR* = debt ratio, *LNTA* = natural logarithm of total assets, *EGR* = earnings growth rate, and $\in_{ij}$ = error term.

4. EMPIRICAL RESULTS AND DISCUSSION

4.1 Summary of Descriptive Statistics and Correlation Matrix

Table 2 reports a summary of the descriptive statistics of one response variable: *WACC*; three predictor variables—debt ratio, total assets, and earnings growth rate—were used in the study. The results reveal that the average *WACC* is 6.768 percent. Similarly, cthe average values of *DR, LNTA,* and *EGR* are 86.004, 11.503, and 13.372 respectively. Similarly, the standard deviations of *WACC, DR, LNTA,* and *EGR* are 1.161, 4.144, 0.344, and 32.681, respectively. The standard deviation of the *EGR* indicates much more volatility among the explanatory variables.

Table 3 depicts the correlation matrix of all variables used in the regression model. This correlation matrix does not show the existence of multicollinearity because all the coefficients of the regression matrix are lower than the threshold of .7 [21] and *VIF*are lower than the threshold of 5 [22]. The highest correlation is between *LNTA* and *WACC* (Pearson's correlation = -.542). Both *LNTA* and *DR*were negatively correlated with *WACC,* and *DR* was statistically insignificant, but *LNTA* was statistically significant at 1%. However, *WACC* was posi- tively correlated with *EGR* and statistically significant.

Table 2.Descriptive statistics of response and predictor variables

Variables	N	Minimum	Maximum	Mean	SD
WACC	28	3.366	8.288	6.768	1.161
DR	28	70.403	93.173	86.004	4.144
LNTA	28	10.858	12.193	11.503	.344
EGR	28	59.070	84.056	13.372	32.681

Table 3. Correlation matrix of the response and predictor variables

Variables	WACC	DR	LNTA	EGR
WACC	1	.177(.368)	-.542** (.003)	-.418* (.027)
DR	.177(.368)	1	.516** (.005)	-.055(.782)
LNTA	-.542** (.003)	.516** (.005)	1	-.232(.263)
EGR	-.418* (.027)	.-.055(.782)	-..232(.236)	1

*Note: *Correlation is significant at the 0.01 level (2-tailed), **Correlation is significant at the 0.05 level (2-tailed)*

Table 4. Multiple regression equation of ROA for all predictor variables

Variables	Coefficient	t-statistics	P-value	VIF
Intercept	23.750*	4.699	.000	
DR	.161*	3.798	.001	1.426
LNTA	-2.671*	-5.101	.000	1.502
EGR	-.007	-1.523	.141	1.105
F-statistics	12.791*	R^2	.615	r =.784
P-value	.000			

*Note: *Statistical significance at the 1% level, **Statistical significance at the 5% level*

4.2 Regression Results

This study focused mainly on regression results. Table 4 shows the results of the regression analysis. Table 4 reports the effects of the debt ratio, total assets, and earnings growth rate on bank *WACC*. The value of R^2(.615) reveals that the overall explanatory power of the regression model was fair—indicating that 61.5 percent of the variation in the bank's *WACC* was explained by the variation in the independent variables. The *P*-value of *F*-statistics indicates that this regression model is a good fit. Besides, the variance inflation factor (*VIF*) of all variables, less than 5 [22], indicates the non-presence of the multicollinearity problem. In Table 4, the regression coefficient of debt ratio (β_1 = .161, $p<.01$) indicates that the debt- to- total assets ratio resulted in a higher *WACC* for Nepalese commercial banks. This result is in line with the findings of prior researchers [12], but contradicts the findings of some other researchers [9]. The result of this regression coefficient was supported by these facts: Relatively high levels of debt ratio produced a higher perceived level of risk to investors, eventually increasing the banks' *WACC* and lowering the value of banks. This indicated that Nepalese commercial banks are over levered firms; therefore, a bank would achieve his goal by issuing debt and/or retiring debt, which eventually leads to a decrease in *WACC* and increases in the value of the bank.

The regression coefficient of the total assets (β_2 = -2.671, $P.<.01$) indicates that a higher *LNTA* ratio resulted in a lower *WACC* to the banks. Thisresult is consistent with the findings of some prior researchers [15], but is in contrast with the findings of some other researchers [9]. The result of the study was supported by this evidence: Larger banks could benefit from economies of scale and greater diversification, which reduces risk and cost, which leads to a decrease in the required rate of return due to the lower risk and increases in the value of the firm due to the higher net operating profit. The regression coefficient of earnings growth rate (β_3 = -.007, $P.>.05$) indicates that a higher *EGR* resulted in a lower *WACC* to the banks—the result that is in line with the findings of previous studies ([9]. The result of the study was supported by this evidence: A higher earnings growth rate increased both public confidence and creditworthiness of the banks, which might be beneficial to reducing the cost of funds that lead to a decrease in WACC and increase the value of firms.

5. CONCLUSION, IMPLICATION, AND LIMITATIONS OF THE STUDY

This study examines the impact of the debt ratio, total assets, and earnings growth rate on the bank's *WACC*. Most of the research conducted in this area has included the USA, European countries, Latin American countries, and African countries. To the Nepalese context, of our knowledge, very few studies have been conducted in this field. The empirical studies conducted by various researchers reveal contradictory results that affect banks' *WACC*. Therefore, the main aim of this study was to examine the impact of the debt ratio, total assets, and earnings growth rate on the bank's *WACC*.

This study employed a single ordinary least squares regression model to explain the cause-and-effect relationship between the response and predictor variables. The regression model, which incorporated *WACC* as the dependent variable, was statistically significant ($F = 12.791, < .01$)—suggesting that the regression model was best fitted. This regression equation reveals that a higher debt ratio positively affected the bank's *WACC* was statistically significant. However, the regression coefficient of total assets indicates that higher total assets negatively affect the bank's *WACC.* Similarly, the regression coefficient of *EGR* indicates that higher *EGR* negatively affected the bank's *WACC* but was not statistically significant.

The findings of this study offer considerable policy implications for Nepalese banking sector reforms. From the above results, we can conclude that the Nepalese commercial banking sector has a higher debt ratio, which increases the WACC and decreases the value of the firms. Therefore, Nepalese commercial banks should decrease the debt ratio either by retiring debt or increasing the capital base (equity) of the banks. On the other hand, the negative coefficient of assets and earnings growth rate revealed that the Nepalese commercial banks should increase both asset size and earnings of the firm to reduce the WACC and increase the value of the banks.

This study has some limitations. This study covered only three independent variables—such as debt ratio, total assets, and earnings growth rate—to show the impact on the bank's *WACC*; therefore, further research needs to be done by including other more variables in the Nepalese context.

ACKNOWLEDGEMENTS

We would like to thank the Editor and two anonymous reviewers for their helpful suggestions. We also thank our respected teacher (Guru), Professor Dr. Radhe Shyam Pradhan who provides us theoretical knowledge about the capital structure decision. We are grateful to Nepal Ratra bank (Central bank of Nepal) who provides data for this study.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Brigham EF, Ehrhardt MC. Financial management. Delhi: Cengage Learning India Private Limited; 2012.
2. Rahaman MM, Zheng C, Ashraf BN, Rahaman MM. Capital requirements, the cost of financial intermediation and bank risk taking: empirical evidence from Bangladesh. Research in International Business and Finance. 2018;44:488-503. Available:http://dx.doi.org/j.ribaf.2017.07.119
3. Saona P. Intra-and extra-bank determinants of Latin American Banks' profitability. International Review of Economics and Finance.2016; 45:197-214. Available:http://dx.doi.org.10.1016/j.iref.2016.06.0
4. Modigliani F, Miller MH. The cost of capital, corporation finance and the theory of investment. American Economic Review. 1958;48(3):261-297. Available: http://jstor.org/stable/1809766
5. Ross SA, Westerfield RW, Jordan BD. Fundamental of corporate finance. New Delhi: Tata McGraw Hill Education Private Limited; 2012.6.
6. DeAngelo H, Masulis R. Optimal capital structure under corporate and personal taxation. Journal of Financial Economics. 1980;8(1):3-29. Available:https://doi.org/10.1016/0304-405X(80)90019-7
7. Cordes J, Sheffrin S. Estimating tax advantages of corporate debt. Journal of Finance. 1983;38(1):95-105. Available:https://doi.org/10.1111/j.1540-6261.1983.tb03628.x
8. Copeland TE, Weston JF, Shastri K. Financial theory and corporate policy. New Delhi: Dorling Kindersley (India) Private Limited; 2007.
9. Weston, JF. A test of cost of capital proposition. Southern Economic Journal. 1963; 30(2):105-112. Available:http://jstor.org/stable/1055958
10. Kuras A, Litzenberger RN. A state-preference model of optimal financial leverage. The Journal of Finance. 1973; 28(4):911-922. Available: http://jstor.org/stable/2978343
11. Orlova S, Harper JT, Sun L. Determinants of capital structure complexity. Journal of Economics and Business; 2020.

Available:http://doi.org/j.jeconbus.2020.105905

12. Hamda RS. The effect of the firm's capitalstructure on the systematic risk of common stocks. The Journal of Finance. 1972;27(2): 435-452. Available:http://www.jstor.org/stable/2978486
13. Myers SC, Maijuf N. Corporate financing and investment decisions when the firms have information that investors do not have. Journal of Financial Economics. 1984;13(2):187-221. DOI:10.1016/0304-405x(84)90023-0
14. Ahamed MM. Asset quality, non-interest income, and bank profitability: Evidence from Indian banks. Economic Modeling.2017;63:1-14. Available:http://dx.doi.org.10.1016/j.ecomod.2017.01.0 1
15. Sinha P, Shrama S. Determinants of bank profits and its persistence in Indian banks: A study in a dynamic panel data framework. International Journal of System Assurance Engineering and Manage-ment.2016;7:35-46. DOI: 10.1007/s13198-015-0388-9
16. Tan Y. The impact of competition and shadow banking on profitability: Evidence from the Chinese banking industry. North American Journal of Economics andFinance.2017; 42: 89-106. Available:http://dx.doi.org/10.1016/j.najef.2017.07.007
17. Dietrich A, Wanzenried G. The determinants of commercial banking profitability in low-middle and high-income countries. The Quarterly Review of Economics and Finance. 2014;54:337-354. Available:http://dx.doi.org/10.1016/j.qref.2014.03.001
18. Fang J, Lau CM, Lu Z, Tan Y, Zhang H. Bank performance in China: A perspective from bank efficiency, risk taking, and market competition. Pacific- Basin Finance Journal. 2019;56:290-309. Available:http://dx.doi.org/10.1016/j.pacfin.2019.06.01
19. Tan Y. The impact of risk and competition on bank profitability in China.Journal of International Financial Markets, Institution & Money. 2016;40:85-110. Available:http://dx.doi.org.10.1016/j.intfin.2015.09.003
20. Nepal Rastra Bank. Banking supervision report, 2017. Kathmandu, Nepal: Bank Supervision Department; 2018.
21. Lind DA, Marchal WG,Wathen SA. Basic statistics for business and statistics. New York, NY: McGraw Hill; 2006.
22. Titko J, Skvarciany V, Jureviciene D. Drivers of bank profitability: Case of Latvia and Lithunia. Intellectual Economics. 2015;9:120-129. Available:http://dx.doi.org/10.1016/j.intele.2016.02.003

Peer-review history:
The peer review history for this paper can be accessed here:
http://www.sdiarticle4.com/review-history/57101