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Research Article

Board Characteristics And Performance Of Banks- Evidence From India

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Abstract: Board characteristics and its impact on performance of the banks has been an area of attraction for researchers since last two decades. The present study focuses on measuring the impact of board characteristics on financial performance of Indian banks. The database of 35 Scheduled Commercial listed banks operating in India including 18 public and 17 private sector banks have been analyzed for a period of 7 years i.e. from 2012-13 to the year 2018-19. A standard method of calculating heteroscedasticity- robust standard error for the fixed effect model and clustered standard error regression technique was used to address the problem of serial correlation consistent with fixed effect estimator. Financial performance is measured using ROA and ROE. It is concluded that the board independence and number of board meetings are significantly and negatively associated with return on asset. However, Board size is positively and significantly associated with ROE.

Keywords: Board Characteristics, Indian banks, Financial Performance, ROA, ROE, Fixed Effect Model, Corporate Governance

1. Introduction

Banking sector in India plays a significant role in development of Indian economy (Gafoor et al., 2018; Rafinda et al., 2018). It promotes the production and employment in other sector, resulting into the income generation and increased consumption of other products in the market. As a result, it improves spending and savings among the people (Zhao et al., 2010; Kumar et al., 2011). History of Indian banking sector suggests that it has witnessed a series of reforms. Earlier, there was privatization and focus of banking sector was on profit making. With the intention to foster public welfare and providing bank credit to the productive sector of economy with the objective to ensure balanced regional development and equitable distribution of economic growth, the government of India took major initiative to nationalize 14 banks in the year 1969. Subsequently, in the year 1980, 6 more private banks were nationalized. Keeping into consideration the need for improving efficiency, competitiveness, more diversified and market oriented banking system, privatization was again initiated in Indian banking sector. As a result in 1995 new private sector banks and foreign banks emerged. Financial sector reforms were initiated on the recommendation of Narasimham Committee in the year 1991–92. Narasimham Committee recommended major reforms including degree of operational flexibility, adoption of uniform accounting practices, reduction of statutory liquidity ratio, and internal autonomy for public sector banks in their decision making process and greater degree of professionalism. Amongst these, one recommendation was structure board for improving efficiency of the banks.

Board structure is the integral part of Corporate Governance which is the system of laws, practices, and procedures by which a firm is directed and controlled (Andrieș et al., 2018; Nomran & Haron, 2019; Zakaria et al., 2019).In the policy document of 2006 on corporate governance in Asian Banks, the OECD opined that poor board structure can lead to systematic risk and destabilization of the financial system of the firms. Man and Wong (2013) opined that poor governance may be a cause of opportunistic decisions taken by managers to inflate their personal gains. The role of board of directors gained more importance considering over a period of time (Garcia-Meca et al., 2015). The SEBI Committee headed by Shri Kumar Mangalam Birla formed in the year 1999, developed a Corporate Governance Code in the context of governance in Indian companies and capital markets. The Reserve Bank of India has laid down guidelines on fit and proper regime in relation to the selection of board of directors of banks. Further, market regulator, Securities Exchange Board of India (SEBI), issued guidelines on the board of directors under the listed agreements of Clause 49 and made it mandatory for companies listed in India (Gafoor et al., 2018; Mayur & Saravanan, 2017). More recently, the Government of India is planning to focus on stronger and more diversified boards through the series of corporate governance reforms. Keeping into consideration this background, the present study endeavors to examine the relationship of the board characteristics and the financial performance of listed banks in India.

2.Review of literature and hypotheses development

The literature broadly describes the positive impact of board on financial performance of the firm (Adams &Mehran, 2012; Battaglia & Gallo, 2015; Elyasiani & Zhang, 2015; Mayur & Saravanan, 2017; Almoneef & Samontaray, 2019). For instance, companies with better board report high profitability (Polovina & Peasnell,

2015), balance financial and non-financial objectives (Lafuente et al., 2019), production of greater firm value (Tanna et al., 2011; Bokpin, 2013; Safiullah & Shamsuddin, 2019; Ondigo, 2019), better market liquidity (Battaglia et al., 2015), better relationship with credit market (Andrieș et al., 2018) and offers higher dividend and a bank return (Fernandes et al., 2017). Boards positively affect the bank risks-taking approach (Pathan, 2009; Dong et al. 2017; Ghada & Mensi, 2018**;** Mollah et al., 2017; Rafinda et al., 2018). Specific studies focusing on the issue of board characteristics are reviewed in below subsections.

In recent times, there has been a significant amount of research on the matter of board characteristics and its impact on performance (Adams & Mehran, 2012; Liang et al., 2013; Elyasiani & Zhang, 2015; Orazalinet al., 2016; Elbahar, 2019). At the firm level, most studies investigate the impact of board characteristics on financial variables, such as profitability, risk management, dividend return and/or growth opportunities (Chou et al., 2013; Saeed et al., 2014; Aggarwal et al.,2019; De et al., 2019; Carney et al., 2020).

3.Board Independence and Financial Performance

As per resource dependency theory, the independent director provides expertise to generate profits by bringing the necessary resources, suppliers and customers through his interlock with other companies. Presence of independent directors on boards serves shareholder interest. Empirical evidence provided by various studies on independence of board and financial performance of banks is indecisive with regard to banks. Some studies show no significant association between board independence and bank performance (Adams&Mehran, 2012; Haris et al., 2019). A positive impact of board independence on banks financial performance was found by Kamath (2019) and Sarkar&Sarkar (2018). Studies including Pathan& Faff(2013), Sakawa&Watanabel (2018) and Missaoui&Raissi (2020) found a negative association between board independence and performance of banks. According to existing literature, the present study includes'board independence' as independent variable to empirically investigate its impact on banks financial performance. Board independence is defined as the proportion of independent directors over total number of board of directors. Following hypotheses are framed for this purpose:

Hypothesis 1 (H_O1): Board Independence does not significantly influence financial performance of banks as measured by ROA.

Hypothesis 2 (H_O2): Board Independence does not significantly influence financial performance of banks as measured by ROE.

4.Board Size and Financial Performance

Board size is an important internal mechanism of bank governance and plays a major role in banks management, governance (Elbahar et al., 2019; Hilmy et al., 2019, Harkin et al., 2020), operations, regulations to monitor the achievement of strategic objectives (Haris et al., 2019), lead to sustainable development for banks, brings more knowledge, advice, diverse expertise and experience (Harkin, 2020), provide a competitive advantage, boosting the performance (Almutairi & Quttainah, 2017; Hilmy et al., 2019) and increase the value and sustainability of banking industry Elyasiani & Zhang (2015). In literature, however, there is no accord about the association between the board size and the financial performance of banks. Some prior literature, for instance Belkhir (2009) and Adams and Mehran (2012) describes the positive association between board size and financial performance. Few studies found inverted-U shaped relationship indicating that up to certain limit board size shows positive association with profitability, while by adding up new directors on board leads to trade-off between monitoring, advising benefit and control and co-ordination (Kamath, 2019; Elbahar, 2019; Haris et al., 2019). On the other hand, some researchers found a negative association between financial performance and large board size (Liang et al., 2013; Nyamongo & Temesgen, 2013; Pathan & Faff, 2013). The present study also endeavors to investigate the impact of 'bank board size' as an independent variable. 'Board size' is defined as the total number of directors in the bank board. Following hypotheses are created:

Hypothesis 3 (H_03): Board Size does not significantly influence financial performance of banks as measured by ROA.

Hypothesis 4 (H_04): Board Size does not significantly influence financial performance of banks as measured by ROE.

5.Number of Board Meetings and Financial Performance

The agency's theory shows that board meetings can make a considerable impact on banks financial performance and promote the business stability through better monitoring and by reducing agency cost. Considering the complex nature on banking business, higher frequency of board meeting ensure the sustainability of financial system, signify the intensity of board activities (Mayur&Saravanan, 2017), enhance the monitoring and advisory role of directors(Haris et al., 2019) and provide direction for the future by resolving the problems

though discussion and by sharing ideas (Mayur and Saravanan, 2017). Previously, Dong et al. (2017) found positive relationship between board meetings and cost efficiency of Chinese bank. Rahul et al. (2016) found robustly significant and positive impact of board meetings on efficiency of Australian banks. On the other hand, Battaglia& Gallo (2015) and Mayur & Saravanan (2017) found insignificant impact of board meetings. Liang et al. (2013) found negative impact of board meetings on banks financial performance. Empirical evidence on the relationship between number of board meetings and performance is mixed. Thus, in present study 'Number of Board Meetings' is taken as independent variable to empirically investigate its impact on financial performance of banks. 'Board meetings' is measured as number of annual meetings held by bank's board. Following hypotheses are framed:

Hypothesis 5 (H_O5): Number of board meetings does not significantly influence financial performance of banks as measured by ROA.

Hypothesis 6 (H_O6): Number of board meetings does not significantly influence financial performance of banks as measured by ROE.

6.Proportion of Women Directors and Financial Performance

Since last decade, the impact of the participation of women directors on boards has been highlighted (Fanet al., 2019). Major empirical studies found a positive impact of women on boards and its impact on bank performance. Female directors are more likely to exercise stronger efforts then male directors in the board, and it helps to increase the banks performance even with weak governance mechanism (Adams & Ferreira, 2009) leading to increase in return, higher profitability and reduce agency cost. Studies found that female directors on board ensures higher accounting quality (Srinidhi et al., 2011), reduce corporate frauds and minimizes cases of avoidance of tax (Gul et al., 2013), increase monitoring efficiency (Donnery,2018), prevents accounting scandals, improve firms' earnings management (Elbahar et al., 2019) and women have greater preference for equality (Croson & Gneezy, 2009). Cardillo et al. (2020) found that gender diversity is positively associated with dividend payout ratios and with bank performance. Based on this review, the present study attempts to examine how women on boards influence the financial performance of banks. Here 'Proportion of Women Director' is measured as the number of women director in board member. Following hypotheses are framed:

Hypothesis 7 (H_O7): Proportion of women directors on board does not significantly influence financial performance of banks as measured by ROA.

Hypothesis 8 (H_O8): Proportion of women directors on board does not significantly influence financial performance of banks as measured by ROE.

Various studies have attempted to study the relationship between board characteristics and performance of the banks in developed economies (Adams &Mehran, 2012; Pathanet al., 2009; Andres &Vallelado, 2008; Belkhir, 2009; Nyamongo&Temesgen, 2013). But only a handful of studies have focused on the banking sector in India (Ghosh& Ansari, 2018; Rafinda et al., 2018; Gafoor et al., 2018). Thus the present study attempts to fill this gap by analysing the impact of board characteristics on banks in India. CEO Duality is a major variable tested by literature (Missaoui & Raissi, 2020; Harkin et al., 2020; Dong et al., 2016). But as per the data obtained on Indian banks under study, all banks have CEO Duality and there is no bank with separation of this role. So, CEO Duality was dropped as a variable of interest for the scope of present study.

7.Data and research methodology

The paper uses data of 35 Indian listed scheduled commercial banks. All 35 banks listed on National Stock Exchange of India were studied for present research. Data were collected for the period of seven financial years starting from the year 2012-13 to the year 2018-19, from annual reports published by the banks under study and the Statistical Tables Related to Banks published by the Reserve Bank of India. Two measures of banks financial performance are used: Return on Assets (ROA) and Return on Equity (ROE). Board characteristics have been measured by Board Independence (BIND), Board Size (BSIZE), Number of Board Meetings (NBM) and Proportion of Women Directors (PWD), considering Logarithm of Provision for NPA's and Bank Size are taken as control variables. The measurement is shown in Table-1 given below:

Table-1: Measurement of variables

Variables	Measurement	Supporting Literature
Dependent variables		
Return on Asset (ROA)	Net Income/ Total Assets	Liang et al., 2013; Battaglia& Gallo, 2015; Orazalin et al., 2016 and Rafinda et al., 2018

Return on Equity (ROE)	Net Income/ Shareholder's Equity	Almutairi&Quttainah, 2017;Nomran &Haron, 2017; Gafoor et al. 2018; Ajili&Bouri, 2018
Independent variables		
Board independence (bind)	Independent directors to the total number of board members	Mayur & saravanan, 2017; matanda et al., 2015
Board size (bsize)	Total number of board of directors on the bank's board	Liang et al., 2013; ghosh& ansari, 2018; orazalin et al., 2016.
Number of Board Meetings (NBM)	Number of Board Meetings held by a Bank's Board	Gafoor et al., 2018; Kamath, 2019
Proportion of Women Directors (PWD)	Percentage of the women directors over total number of board members	Shukla et al., 2018; Poletti & Briano, 2019; Fan et al., 2019
Control variables		
Logarithm of Provision for NPA's (L_PROV)	Natural log of provisions for npas	Manas et al., 2017;Abdul et al., 2018;Ghosh et al., 2018; Naciti, 2019
Bank size (banksize)	Natural log of total assets	Shukla et al.,2020

To empirically examine the relationship between board characteristics and bank performance and to test the hypotheses the following two models were constructed.

Model I

$$ROAit = \alpha + \beta 1BSIZEit + \beta 2\, BINDit + \beta 3NBMit + \beta 4PWDit + \gamma 1L\_provit + \gamma 2Banksizeit + \varepsilon it - - - - - (i)$$

Model II

$$ROEit = \alpha + \beta 1BSIZEit + \beta 2\, BINDit + \beta 3NBMit + \beta 4PWDit + \gamma 1L_{provit} + \gamma 2Banksizeit + \varepsilon it - - - - - (ii)$$

Where,

i represent banks and t represents years

α are the parameters to be estimated,

ε is the Residual Term

ROA is the return on assets of the bank

ROE is the return on equity of the bank

BSize is total number of board of directors of bank's board

BIND is the Independent Directors to the total number of Board members

NBM is the number of board meetings held in a year

PWD is the percentage of women directors over total number of board members

L_prov is to the natural log of the NPA's provision of the bank

Bank Size is the natural log of the asset size of the bank

The relationship between board characteristics and banks financial performance was measured by using robust standard error and cluster standard error for fixed effect model regression technique. Hausman test was used to identify best fit model.

8.Results and discussion

The results are presented in two parts. Part- 1 focuses on measuring impact of board characteristics on financial performance measured by ROA. Part -2 highlight impact of board characteristics on financial performance measured by ROE.

9.Descriptive Statistics

Table-2 shows the descriptive statistics. Return on Asset (ROA) has an average of 0.164 with minimum value to be -4.68 and maximum value of 2.02. The mean value of Return on Equity (ROE) is 0.016 and maximum value is 0.2264 and minimum value is -0.9001. Board Independence (BIND) has mean value of 4.567 with maximum value of 12. Board Size (BSIZE) has mean of 10.833 with maximum value of 19 and minimum value of 6. Number of Board Meetings (NBM) has an average value of 12.253 with maximum number of 27 and minimum value of 4. Proportion of Women Directors (PWD) has an average value of 1.02 with maximum range of 3 and minimum value of 0.

Table- 2: Descriptive Statistics of Variables

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	245	.164	1.252	-4.68	2.02
ROE	245	.016	.171	-.9	.226
BSIZE	245	10.833	2.035	6	19
PWD	245	1.02	.776	0	3
BIND	245	4.567	2.496	0	12
NBM	245	12.253	3.969	4	27
B_SIZE	245	5.247	.514	4.052	6.566
L_PROV	245	3.169	.746	1.084	4.854

Correlation analysis: The pair wise correlations and probability are calculated to measure the degree of association among the variables under the study. Table 3, reported, that the board size and board independence is positively correlated with ROA and ROE at 1 per cent level of significance, while Number of Board Meetings is negatively correlated with dependent variable. There exists a significantly high correlation between ROA and ROE. For the purpose of present study both ROA and ROE are dependent variables and are used in different models. So, this high correlation is not going to affect the results. In all other variables very low correlation was found. Thus, there are no multicollinearity issues.

Table-3 Pair wise correlations

Variables	ROA	ROE	SIZE	PWD	BIND	NMB	B_SIZE	L_PROV
ROA	1.000							
ROE	0.724* (0.000)	1.000						
BSIZE	0.167* (0.009)	0.257* (0.000)	1.000					
PWD	-0.046 (0.471)	-0.102 (0.110)	0.241* (0.000)	1.000				
BIND	0.373* (0.000)	0.336* (0.000)	0.272* (0.000)	0.110 (0.085)	1.000			
NBM	-0.307* (0.000)	-0.183* (0.004)	0.131* (0.041)	-0.035 (0.586)	-0.235* (0.000)	1.000		
B_SIZE	-0.122 (0.057)	-0.068 (0.288)	0.157* (0.014)	0.318* (0.000)	-0.403* (0.000)	0.053 (0.411)	1.000	
L_PROV	-0.463* (0.000)	-0.446* (0.000)	0.031 (0.630)	0.334* (0.000)	-0.527* (0.000)	0.216* (0.001)	0.873* (0.000)	1.000

**** p<0.01, ** p<0.05, * p<0.1*

Part- 1 Impact of board characteristics on financial performance using Return on Assets (ROA)

Hausman Test

The Hausman test is applied to decide the suitability of the fixed effect or random effect model for investigating the association between financial performance of sample banks and board variables (Baltagi, 2005).

The results of the Hausman test for identifying suitability of model for measuring association between ROA and board characteristics are presented in Table-4:

Table-4 Hausman specification test (Model I)

	Coef.
Chi-square test value	32.066
P-value	0

It shows that p-value is significant thus, on the basis of Hausman test result; it is found that fixed effect panel data model (FEM) is suitable for testing Model I. Further, the model can only be applied if the assumption of heteroscedasticity and serial auto-correlation are met. To check heteroscedasticity, Wald test was applied. Wald test for heteroscedasticity assumes that the distribution is homoscedastic, means constant variance (Anselin et al., 2008). On testing the relationship between ROA and the board variables, it was found that the alternate assumption of heteroscedasticity is valid.

Table-5 Wald test- for group wise heteroscedasticity

Ho: Homoscedasticity
Variables: fitted value of Return on Assets
chi2 (35) = 7439.08
Prob>chi2 = 0.0000

The next step is to test the first order serial correlation in the idiosyncratic error term in a panel data regression model. First-order correlation in error term was found as shown in Table 6. Thus, null hypothesis is not accepted.

Table-6 Wooldridge test- for autocorrelation in panel data

H0:	no	first-order		autocorrelation
Variables: Return on Assets				
F	(1,	34)	=	48.887
Prob > F =	0.0000			

The problem of heteroscedasticity and serial correlation, i.e., first-order autocorrelation (AR-1) are present in the model. Therefore, the fixed effect cluster standard error technique with year dummies was used. Year dummies help to capture the effect of unobserved heterogeneity arising due to time variant and cross section invariant variables.

Table 7 shows the result of fixed effect model. BIND, NBM, B_SIZE and L_PROV has p-value significant at 5 per cent level of significance. BIND and NBM has co-efficient of -.115 and -.047 respectively, indicating its negative effect on bank's financial performance. The results are in support of Pathan & Faff, (2013) and Bezawada (2020). The control variable, natural log of NPA's provisions has significantly negative impact, while bank size has positive and significant impact on financial performance of sample banks measured by ROA. Thus, Hypotheses $H_0$3, and $H_0$7 are accepted and $H_0$1, $H_0$5 are rejected. However, the overall model is significant at 5 per cent level.

Table 7- Fixed Effects Panel Data Regression - Model I

R^2	0.463			
Prob. (F-statistic)	0.000			
ROA	Coefficient.	Std.Err.	t-stat.	Prob.
BSIZE	.038	.056	0.68	0.50
PWD	.059	.119	0.49	.627
BIND	-.115	.054	-2.14	.039
NBM	-.047	.024	-1.95	0.06
B_SIZE	2.826	1.191	2.37	.023
L_PROV	-1.716	.484	-3.54	.001
2014	.061	.139	0.44	.664
2015	-.369	.195	-1.89	.067

2016	.058	.315	0.18	.855
2017	-.582	.324	-1.79	.082
2018	-.312	.442	-0.71	.485
2019	-.352	.455	-0.77	.444
Constant	-8.385	5.593	-1.50	.143

Part 2- Highlights impact of board characteristics on financial performance measured by Return on Equity (ROE)

Here, hypotheses H2, H4, H6 and H8 were tested. In Table-8, the Hausman test shows, that chi-square value is statistically significant therefore; fixed effects model is suitable for testing Model II. Further, the preliminary testing of data has been conduct to verify the requisite assumptions of heteroscedasticity and autocorrelation.

Table- 8 Hausman test

	Coef.
Chi-square test value	30.348
P-value	0

To check the heteroscedasticity, Wald test was applied. On testing the relationship between ROE and board variables (Table 9), it was found that alternate assumption of heteroscedasticity is valid.

Table-9 Wald test- for group wise heteroscedasticity

Ho: Homoscedasticity
Variables: fitted values of Return on Equity
chi2 (35) = 2494.26
Prob>chi2 = 0.0000

The next step is to test the first-order serial autocorrelation. In Table-10, it shows that p-value is insignificant thus; it is found that, a Wooldridge test result accepts the null hypothesis of no first-order correlation in Model II.

Table-10 Wooldridge test for autocorrelation in panel data

H0: no first-order autocorrelation
Variables: Return on Equity
F (1, 34) = 0.471
Prob > F = 0.4972

The problem of heteroscedaticity is present in developed model. Therefore, the fixed effect robust standard error technique with year dummies was used to test the association between board variables and Return on Equity (ROE).

Table 11- Fixed Effect Panel Data Regression- Model II

R^2	0.656
Prob. (F- statistic)	0.000

ROE	Coefficient	Robust Std.Error	t-stat.	p-value
BSIZE	.017	.004	4.07	0
PWD	-.013	.011	-1.14	0.262
BIND	-.006	.004	-1.43	0.162
NBM	-.004	.004	-0.97	0.340
B_SIZE	.73	.096	7.61	0
L_PROV	-.387	.062	-6.27	0
2014	-.049	.013	-3.67	.001
2015	-.027	.017	-1.62	.114
2016	-.018	.031	-0.59	.559

2017	.018	.043	0.42	.675
2018	-.045	.056	-0.81	.426
2019	-.062	.056	-1.10	.279
Constant	-2.655	.511	-5.19	0

Table 11 shows the result of fixed effect model. BSIZE is positively and significantly related to ROE, which support H2, indicating that a one unit increase in board size is associated with increase in ROE by 1.7 per cent. The control variable logarithm of NPA provisions and bank size are statistically significant. Bank size has positive and significant impact on financial performance of banks, while NPA provision has negative impact on the accounting performance. Thus, hypothesis $H_0$2 is rejected and hypotheses number $H_0$4, $H_0$6 and $H_0$8 are accepted. However, overall model is significant at 5 percent level of significance.

10.Conclusion

The present study endeavors to establish the relationship between bank characteristics and its financial performance. As stated above bank characteristics are measured by variables including board independence (BIND), board size (BSIZE), number of board meetings (NBM), proportion of women directors (PWD). Return on assets (ROA) and Return on equity (ROE) are used as proxy variables for financial performance. Logarithm of provision for NPA's and bank size were considered as control variables. 35 Indian scheduled commercial banks including 18 public and 17 private sector banks listed on National Stock Exchange were considered. The data was obtained for a period of 7 years, starting from 2012-2013 to the year 2018-2019. From the forgoing analysis, it is concluded that board independence has a significantly negative influence on bank's financial performance. The study supports the finding of Bezawada (2020) and Basuony et al. (2017) and contradicts the findings of Belkhir (2009), Andres &Vallelado (2008). Board size has no significant influence on return on assets, this result in support of Kamath (2019), Elbahar, (2019) Haris et al., (2019). With respect to return on equity, only board size explains the dependent variable significantly. Board size has positive effect on return on equity. On the perspective of association of frequency of board meetings and financial performance of the firm, the present study contradicts findings of Shukla et al. (2018), Mayur & Saravanan (2017), Dong et al. (2016), and Battaglia & Gallo (2015) and supports Liang et al. (2013). Size of board of directors is another significant component of board characteristics. The results of association of the size of board and financial performance agrees with findings of Harkin (2020), Hilmy et al. (2019), Almutairi & Quttainah(2017) and does not agree with Elbahar et al. (2019) and Babić et al. (2020). Contrary to the fact that literature talks about positive role of women on boards, this study contradicts the findings of Elbahar et al. (2019) and Cardillo et al. (2020) and finds no association of women on boards and financial performance of the firm. Overall it can be concluded that in Indian banks, there exists negative association between independence of board and return on asset. There is significant positive relationship between size of the board and financial performance measured with ROE. Whereas, number of board meetings have significantly negative relationship with financial performance of the banks in India.

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