Financial Distress and Dividend Policy of Selective Indian Public Sector Banks: A Panel Data Perspective

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Abstract: *The study focuses upon the financial distress and dividend policy of selective public banks across the India. The study provides highlights on relationship between previous two along with assessing the moderating effects of debt-equity of banks, the study aims to establish a relationship between the financial distress with dividend policy, many studies have been conducted to verify the robustness of the banking industries across the world, the authors also focused to verify the financial distress using Altman Z-Score model, this study focuses upon the impact of financial distress of selective banks on dividend policy of selective banks. The study found insignificant impact of financial distress on the dividend policy of selective banks, whilst debt-equity negatively moderates the association of previous both at 5% level of significance. The study uses panel data analysis adopting fixed effects and random effects model. The collinearity test is conducted at 5% level of significance; indicate that no variable has any significant impact on the dividend policy of banks.*

Keywords: *Financial distress, dividend payout and z-score*

Introduction

Financial distress in banking sector has witnessed many tragic changes, the case of Lehman Brothers cannot be forgotten while remembering the financial crisis, the banking sector has witnessed ground-breaking changes in recent decades regarding operations and policy making, and the Indian banking sector has also witnessed robust shift in financial and policy decision. Previous work on financial distress has indicated that various scoring techniques and tools such as CAMEL model are used to predict the level of financial distress in the organization [0]. However, recent studies also suggest that financial distress of the organization can also measured using Z-Score analysis, one of the primary factors that are used to verify the financial stability of the company [0]. The use of Z- Score model is highly effective as it provides high accurate results in very limited use of financial ratios and financial parameters. The result of the

analysis is reliable proven by various researchers across the world [0]. Financial distress is a term which focuses on the financial inability of the firm to meet its financial objectives. The more financial sound firms are having very less likely proportion of risk associated with bankruptcy. Banking sector in India has gone through changes regarding "Cash Reserve Ratio, Statutory Liquidity Ratio, Cash with bank, Cash with RBI" etc. The real problem arose after the pandemic of COVID-19, which shook the foundations of every economic sector of the countries across the world, the paradigm shift towards sustainability is also witnessed due to sudden changes in environmental issues and recent summits. The main focus on the financial health check of banking industry in India is required; the sudden escape of many multi-millionaire causing dents on the financial system of the country is also not ignored. Therefore, Reserve Bank of India is taking crucial steps to recover the banking sector by providing grants and relaxations and similarly by checking up on the sector through robust policy making and regulation system.

The Indian banking system has been regulated by Reserve Bank of India, due to such regulations the trust on banking industry is quite utmost. The government has been taking regulative steps, however, the banking industry has not remained unaffected by loopholes in the context of various policies and corporate governance, the increasing number of banking frauds cannot be fully ignored.

Review of Literature

The history of the banking and banking theories goes back to early 18th century; the ground breaking theory developed by Adam Smith which gave rise to free market banking, and brought revolution in banking industry. The rise of merchant bank after 1800s brought many historical changes in the current banking system. The firm named J.P. Morgan was the pioneer company to bring many theoretical as well as policy based changes in the current banking system.

The rise of bank fall came into discussions after the shocking fall of Lehman brothers, the banking company having the most valued among the banking industry across the world, failed due to liquidity and policy crisis. The studies conducted by various researchers also suggested that the fall of Lehman brother could have been avoided by following various disclosures such accounting and policy related facts (Yang, 2023). The profitability of the banking companies have not been quite sound over the decade, the reason behind it is the rise of Non-Performing Assets (NPA), even after the policy regulations the rate of non-performing assets have been corrected, the profitability decline cannot be fully avoided (Gunasekaran et al., 2024).

While dealing with the problems related to financial distress, the approach of reducing the leverage results into the favourable position of company's financial performance, however debt-restructuring is not always suitable, as it has significantly less impact on value maximization of the firm, so the approach of the management policy regarding capital structure determines the sound financial stability of the firm (Wruck, 1990). The relation between dividend policy of the firm and the profitability are positively related, however it cannot be ignored the insignificant impact of dividend policy on the market value of the firm. (Malombe, 2011). The study proves that z-score, liquidity and performance ratios of the firm have significant impact to measure the financial distress of the firm, however liquidity and financial ratios of the firm are useful to measure the financial distress levels of the companies (Kazemian et al., 2017). The dividend history of the firm is, however the strong indicator to measure the financially distressed firm, proven by the studies of (Sami & Abdallah, 2021) and (Santosa et al., 2020).

The study conducted prove that financial distress analyzed using Altman z- score model, dividend pay-out ratio, debt/equity, sales are the main parameters that can be used to assess the financial distress of the banking industry. The

study found that financial distress linearly influences the dividend payout ratio, whilst debt/equity ratio moderates the financial distress and its association with dividend payout ratio (Rawal & Gopalkrishnan, 2024).

Conceptual Model of the Study

The conceptual model of the study is adopted by the work of, where the financial distress is the dependent variable and dividend payout is the independent variable, the debt/equity is the moderating variable of the study. The sales (income) is control variable in the study.

Figure 1: Conceptual Model of the study

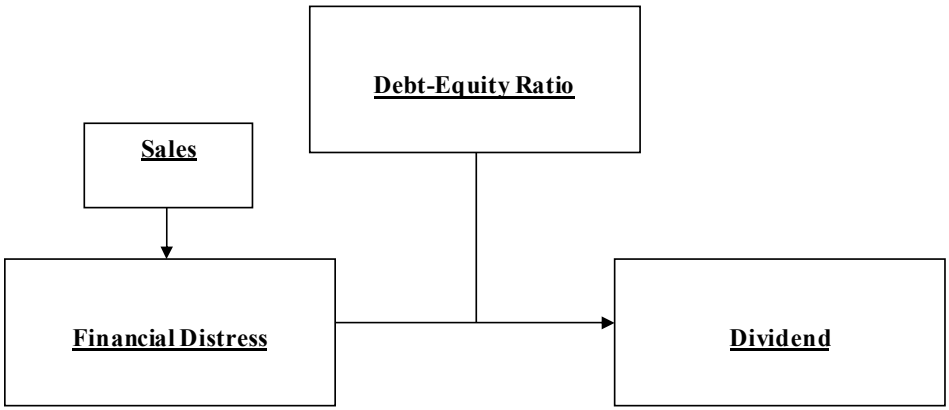

Table 1: List of Selected Public Sector Banks

Sr. No.	Bank	Market Value. (Rs. in Cr.)
1	State Bank of India (SBI)	5,80,456
2	Punjab National Bank (PNB)	1,38,133
3	Bank of Baroda (BOB)	1,32,024
4	Union Bank of India (UBI)	1,10,334
5	Indian Overseas Bank (IOB)	1,06,137

Hypothesis of the Study

H0: There is no impact of financial distress on the dividend payout ratio among selective banks.

H1: There is an impact of financial distress on the dividend payout ratio among selective banks.

Results & Discussion

Table 2: Correlation Analysis

```
. pwcorr DPR zscore DebEq Income, listwise print(10) star(5)
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	DPR	zscore	DebEq	Income
DPR	1.0000			
zscore	0.6207*	1.0000		
DebEq			1.0000	
Income	0.4423*	0.6476*	0.6335*	1.0000

The above Table 2 indicates the correlation analysis of the selected variables; it suggests that Financial Distress (Z-Score) of banks have positive impact on both Z-Score as well as Income of the Bank.

Table 3: Collinearity Test

```
. regress DPR zscore DebEq Income SDMEANZ DEMAEANDE Interaction
note: DEMAEANDE omitted because of collinearity
```

Source	SS	df	MS		
				Number of obs	= 25
				F(5, 19)	= 5.33
Model	1640.5777	5	328.115539	Prob > F	= 0.0032
Residual	1169.4223	19	61.5485423	R-squared	= 0.5838
				Adj R-squared	= 0.4743
Total	2810	24	117.083333	Root MSE	= 7.8453

DPR	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
zscore	-3.629452	3.749422	-0.97	0.345	-11.47708	4.218178
DebEq	-10.28534	4.923439	-2.09	0.050	-20.59022	.019534
Income	13.35413	7.18293	1.86	0.079	-1.679917	28.38817
SDMEANZ	-4.139139	2.257387	-1.83	0.082	-8.863904	.5856265
DEMAEANDE	0	(omitted)				
Interaction	1.157386	.4739443	2.44	0.025	.1654088	2.149362
_cons	-49.31495	31.50944	-1.57	0.134	-115.265	16.63506

The above Table 3 illustrates that, R-square value having impact of 58.38% impact on the independent variable; on the other hand the value of 0.0032 indicates that, among the selected variables, at least one variable has significant impact on the model. Financial Distress (Z-Score), debt equity negatively collinear to the model, whereas income has positive collinearity on the model, the interaction point is statistically significant at 5% level of significance.

Table 4: Fixed Effects Model

```
. xtreg DPR zscore DebEq Income SDMEANZ DEMAEANDE Interaction, fe
note: DEMAEANDE omitted because of collinearity

Fixed-effects (within) regression               Number of obs      =        25
Group variable: SrNo                            Number of groups   =         5

R-sq:                                           Obs per group:
     within  = 0.6234                                         min =         5
     between = 0.6602                                         avg =       5.0
     overall = 0.3362                                         max =         5

                                                F(5,15)            =      4.97
corr(u_i, Xb)  = -0.9013                        Prob > F           =    0.0070
```

DPR	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
zscore	-1.969092	4.145557	-0.47	0.642	-10.80514	6.866953
DebEq	-.4163001	10.00273	-0.04	0.967	-21.73662	20.90402
Income	37.83913	35.10123	1.08	0.298	-36.97738	112.6556
SDMEANZ	-3.112444	2.503401	-1.24	0.233	-8.448318	2.223429
DEMAEANDE	0	(omitted)				
Interaction	.9651293	.5191222	1.86	0.083	-.1413536	2.071612
_cons	-179.9329	178.9945	-1.01	0.331	-561.4506	201.5847
sigma_u	16.003244					
sigma_e	7.7634077					
rho	.80949624	(fraction of variance due to u_i)				

F test that all u_i=0: F(4, 15) = 1.10 Prob > F = 0.3921

The above fixed effects model controls the time variable and entity specific characteristics, the model is tested at 5% level of significance, indicating 62% influence of effects within the model whereas 66% influence between the model, and overall 33% influence on the study. The model explains that Financial Distress (Z-Score), debt equity negatively influence the model with insignificant value, whereas the income (sales) positively impact the model with also insignificant value.

The above model explains that, controlling the entity specific variables, and treating them to verify the relationship among the variables, it is found that financial distress has no impact on dividend payout ratio of the selective banks.

Table 5: Random Effects Model

```
. xtreg DPR zscore DebEq Income SDMEANZ DEMAEANDE Interaction, re
note: DEMAEANDE omitted because of collinearity

Random-effects GLS regression                   Number of obs     =         25
Group variable: SrNo                            Number of groups  =          5

R-sq:                                           Obs per group:
     within  = 0.5878                                         min =          5
     between = 0.5849                                         avg =        5.0
     overall = 0.5838                                         max =          5

                                                Wald chi2(5)      =      26.66
corr(u_i, X)   = 0 (assumed)                    Prob > chi2       =     0.0001
```

DPR	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
zscore	-3.629452	3.749422	-0.97	0.333	-10.97818	3.71928
DebEq	-10.28534	4.923439	-2.09	0.037	-19.93511	-.6355792
Income	13.35413	7.18293	1.86	0.063	-.7241561	27.43241
SDMEANZ	-4.139139	2.257387	-1.83	0.067	-8.563536	.2852584
DEMAEANDE	0	(omitted)				
Interaction	1.157386	.4739443	2.44	0.015	.2284719	2.086299
_cons	-49.31495	31.50944	-1.57	0.118	-111.0723	12.44241
sigma_u	0					
sigma_e	7.7634077					
rho	0	(fraction of variance due to u_i)				

The above random effects model assess the entity specific relationships, and hence useful to measure the relationship of selective variables across the selective banks in the study. The model is tested at 5% level of significance, and explains 58.78% influence within the group, 58.49% between the group and overall 58.38% influence on the study. The model explains that whereas Financial Distress (Z-Score) and debt equity negatively influence the model, with Financial Distress having insignificant value; however debt equity is significant at 5% level of significance. The income (sales) positively influences the model explaining the overall insignificant value at 5% level of significance, however significant at 10% level of significance.

The random effects model helps to understand that, considering the entity specific characteristics; however minor impact could be analyzed of financial distress on dividend payout ratio of banks; however debt equity negatively moderates the association between financial distress and dividend payout ratio of selective banks.

Conclusion

The study focused upon the relationship between the financial distress and the dividend policy of selective public sector banks of India. The study found by adopting fixed effects model that relationship of selected variable have no significant impact on the dividend policy of selective public sector banks. The random effects model was adopted and found that considering entity specific characteristics (such as financial distress, income and debt equity), no significant impact of financial distress could be found on the dividend policy of the banks. Whereas the debt-equity is significant considering the moderating effect on the association between financial distress and dividend policy of selected banks.

References

Ferri, G. (2000). The political economy of distress in East Asian financial institutions. In *World Bank policy research working paper*. https://doi.org/10.1596/1813-9450-2265.

Zhang, Z., Xie, L., Lu, X., & Zhang, Z. (2015). DETERMINANTS OF FINANCIAL DISTRESS IN LARGE FINANCIAL INSTITUTIONS: EVIDENCE FROM U.S. BANK HOLDING COMPANIES. *Contemporary Economic Policy*, *34*(2), 250–267. https://doi.org/10.1111/coep.12105.

Altman, E. I., Iwanicz-Drozdowska, M., Laitinen, E. K., & Suvas, A. (2014). Distressed firm and bankruptcy prediction in an international context: A review and empirical analysis of Altman's Z-Score model. *Social Science Research Network*. https://doi.org/10.2139/ssrn.2536340.

Raktim Ghosh, Biswajit Dey, & Subhajit Bhadra. (2020). Causal Relationship between Major Banking Rates and Stock Market- Empirical Evidence from India during COVID-19. *International Journal of Creative Research Thoughts*, *8*(7), 1912–1923.

Mettenheim, K. (2013). Back to basics in banking theory and varieties of finance capitalism. *Accounting, Economics, and Law*, *3*(3). https://doi.org/10.1515/ael-2013-0008.

Yang, S. (2023). Too Big To Fall: Bankruptcy of Lehman Brothers Holdings Inc. in 2008. *Advances in Economics Management and Political Sciences*, *61*(1), 64–70. https://doi.org/10.54254/2754-1169/61/20230845.

Gunasekaran, K., Srinivasan, K., Ramesh, K., & Sivasubramanian, K. (2024). An impact analysis of Non-performing asset (NPA) of banks on profitability of the banks in India. In *Studies in systems, decision and control* (pp. 507–514). https://doi.org/10.1007/978-3-031-51997-0_43.

Wruck, K. H. (1990). Financial distress, reorganization, and organizational efficiency. *Journal of Financial Economics*, *27*(2), 419–444. https://doi.org/10.1016/0304-405x(90)90063-6.

Malombe, G. M. (2011, October 1). *The effects of dividend policy on profitability of Sacco's with FOSAs in Kenya*. http://erepository.uonbi.ac.ke/handle/11295/12881.

Kazemian, S., Shauri, N. a. A., Sanusi, Z. M., Kamaluddin, A., & Shuhidan, S. M. (2017). Monitoring mechanisms and financial distress of public listed companies in Malaysia. *Journal of International Studies*, *10*(1), 92–109. https://doi.org/10.14254/2071-8330.2017/10-1/6

Sami, M., & Abdallah, W. (2021). Assessing the impact of dividend policy on the sustainability of distressed firms. *Journal of Modelling in Management*, *16*(3), 987–1001. https://doi.org/10.1108/jm2-06-2020-0160.

Santosa, P. W., Aprilia, O., & Tambunan, M. E. (2020). The intervening effect of the dividend policy on financial performance and firm value in large Indonesian firms. *International Journal of Financial Research*, *11*(4), 408. https://doi.org/10.5430/ijfr.v11n4p408.

Rawal, A., & Gopalkrishnan, S. (2024). Impact of financial distress on the dividend policy of banks in India: evidence using panel data. *Future Business Journal*, *10*(1). https://doi.org/10.1186/s43093-024-00310-y.

O'sullivan, A., Sheffrin, S. M., & Swan, K. (2003). Economics: Principles in action.

Grinblatt, M., & Titman, S. (2016). Financial markets & corporate strategy.

Brush, C. G., Carter, N. M., Greene, P. G., Hart, M. M., & Gatewood, E. (2002). The role of social capital and gender in linking financial suppliers and entrepreneurial firms: A framework for future research. *Venture Capital*, *4*(4), 305–323. https://doi.org/10.1080/1369106022000024897.