

Impact of Capital Structure on Profitability of Public and Private Sector Banks in India

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Abstract: Capital structure is one of the important areas of financial decision making. This study has been undertaken to examine the impact of Capital structure on profitability of public and private sector banks in India listed in National Stock Exchange during 2013-2017. Regression analysis and Correlation has been used for establishing a relationship between Return on Equity (ROE), Return on Assets (ROA) and Earnings per Share (EPS) through R-programming.

Keywords: Capital, Return on Equity, Return on Assets, Earnings per Share, Regression analysis and Correlation.

I. Introduction:

Capital structure refers to the mode of finance which a firm uses to finance, usually a blend of debt including preference stock and equity capital; this is known as long-term financing mix of a firm. Capital structure decision is very important for any firm to maximise their return and increase the firm's ability for functioning in a competitive environment.

It is generally believed that value of a firm can be maximised when the cost of capital is minimum. The optimal capital structure is the appropriate combination of debt-equity mix that minimises the firm's cost of capital and which in turn maximises firm's profitability and market value. Determining capital structure is subject to both the managers and fund suppliers of the firm. An incorrect combination of the debt-equity mix can have a negative impact on the firm's performance. Thus, managers should try to achieve the best combination of debt and equity.

The modern theory of capital structure was the great contribution of Modigliani and Miller (1958) under the assumption of perfectly competitive market conditions. This theory of irrelevance was first published in 1958. As per this theory, firm's value is free from the influence of capital structure decisions. Instead, they argued that firm's value is derived from the productivity and the quality of assets in which the firm has invested. It is to be noted that this theory is applicable only under the assumptions of perfect competition markets. They assumed that all shares are homogenous in nature and hence perfect substitutes for each other; individuals and firms can undertake financial transactions at same prices; firms are from taxes and frictionless markets. Later, however, they proposed by taking the effect of tax advantage on debt and concluded that firm's value can be increased by use of more debt into capital structure.

However, it is arguable whether these assumptions hold in the real world; thus, several theories, for instance, the static trade-off theory, pecking order theory, and theory of agency cost have emerged to explain the connection of capital structure decisions with the firm performance.

The argument over the assumptions of Modigliani and Miller (1958) results in the static trade-off theory, which states that, with the incorporation of tax into the Modigliani and Miller (1958) theory, the advantage for the use of debt capital, if practically possible, can be applied to protect earnings from high taxes. "According to **Brigham and Houston**, the optimal capital structure of a firm, from which the firm value will increase and the cost of capital will decrease, is determined by the trade-off of the benefits of using debt and known as tax savings and the costs of debt such as agency costs [Source: Fundamentals of Financial Management, Tenth edition; Brigham and Houston (2004)]". Further, the trade-off theory states that firms having more physical assets should employ additional debt capital, as these physical assets would be collateral. In addition, the intangible asset value is more prone to depreciate in the case of financial suffering. Focusing on the unequal treatment of tax in debt financing and equity financing, Schepens argued that an equal treatment of

debt and equity significantly increases bank capital ratios, driven by an increase in common equity, which ultimately impacts the capital choice of banks.

Myers (1977) developed a capital structure theory, known as the Pecking Order theory, which believes in no optimal capital structure and suggests that every firm has a preferred hierarchy for the financing decisions and usually prefers the internal financing rather than acquiring funds from outside the organization [Source: Modern developments in Financial Management: Steward C. Myers]. However, financing from outside sources is required when all in-house funds are employed.

Considering that debt is a necessary factor, which creates differences in the goals of shareholders with managers, Jensen and Meckling (1976) developed the agency cost theory [Source: Theory of Firms: Managerial Behavior, Agency Costs and Ownership Structure]. The theory explains that the cash flow of a firm relies on its ownership formation. The authors suggested that there should be the best combination of debt and equity capital that could shrink total agency costs. In other words, prevailing agency cost determines how much debt should be introduced into the capital structure.

II. Review Of Literature:

Modigliani and Miller's (M & M) (1958) theory of capital structure have inspired many researchers to debate and it's still continuing. With the passage of time, new dimensions have been added to the question of relevance or irrelevance of capital structure. They declared that there would be no optimal financial structure in a world of frictionless capital markets. M&M theory later became known as the "Theory of Irrelevance". M & M's Proposition-II attempted to answer the question for why there was an increased rate of return when the debt ratio was increasing. It stated that in spite of the financing mix chosen, the increased expected rate of return generated by debt financing is exactly offset by the risk incurred.

Capital structure decisions are very important for the value of the firm and its cost of capital. Inappropriate capital structure decisions can lead to an increased cost of capital thereby lowering the net present value (NPV) of many of the firm's investment projects. Effective capital structure decisions will lower the firm's overall cost of capital and raise the NPV of investment projects leading to more projects being acceptable to undertake and which in turn increases the overall value of the firm. Despite the importance of capital structure in adding value to the firm decades worth of theoretical literature and empirical testing have not been able to give proper guidance to managers regarding choosing between debt and equity in their capital structures (**Frank and Goyal, 2009**). Anyone who is trying to make sense of the capital structure literature is the fact that the different capital structure theories are often diametrically opposed to their predictions while at other times they may be in agreement but have different views about why the outcome has been predicted. For this reason, **Myers (2002)** has stated that there is no universal theory of capital structure but only conditional ones. Factors that are important in one context may prove unimportant in another. For this reason, it has become of growing importance to "develop a theory to yield more precise predictions and to devise more powerful empirical tests as well as better proxies for the key firm characteristics that are likely to drive corporate financing decisions" (Barclay & Smith, 2010).

Objectives Of The Study:

1. Measuring the impact of capital structure on banking performance to provide empirical evidence on public and private sector banks
2. To focus on the relationship between capital structure and profitability of banks
3. Effects of capital structure on profitability will help us to know the potential problems in performance and capital structure
4. To study the impact of these of debt and share capital on the profitability of the banks.

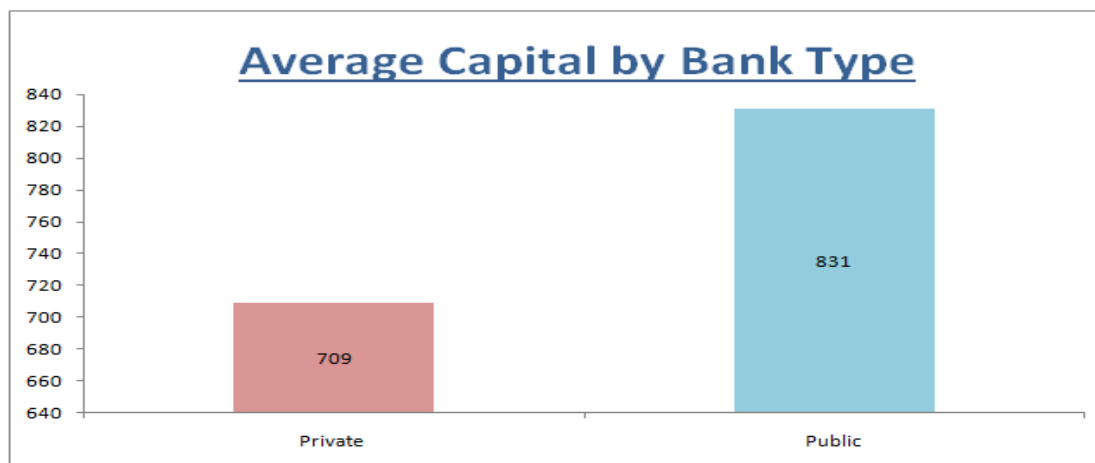
III. Research Methodology:

We collected a Secondary data from a website: www.moneycontrol.com and the source: Dion Global Solutions Limited about top 10 public and private banks which are United Bank of India, State Bank of India, ICICI Bank, Punjab National Bank, Bank of Baroda, Canara Bank, HDFC Bank, Axis Bank, Bank of India and IDBI Bank. From these Banks, we collected a Profitability, Capital, Return on equity, Return on Debt and Earnings per Share.

1. To measure the impact of capital structure on banking performance to provide empirical evidence regarding public and private sector banks

Null Hypothesis H_0 : There is no difference between capitals by public Vs. Private.

Alternative Hypothesis H_1 : There is a difference between capitals by public Vs. Private.



From the above graph, we can conclude that Public Banks having on an average more capital than Private Banks.

```
>t.test(BD_1$Capital~BD_1$Public.Private)
```

Welch Two Sample t-test

data: BD_1\$Capital by BD_1\$Public.Private

t = -0.99907, df = 38.324, p-value = 0.324

alternative hypothesis: true difference in means is not equal to 0

95 percent confidence interval:

-367.7695 124.6742

sample estimates:

mean in group Private mean in group Public

709.2320

830.7797

Here P- value =0.324>0.05. So that we can accept Null hypothesis H0.

We conclude that there is no difference between capitals by public Vs. Private.

2. To test the focus on the relationship between capital structure and profitability of banks by using the correlation analysis through R-programming.

Here we get low negative correlation ($r=-0.3147223$) between profit and capital

So it is always better starting with alow capital.

3. To test the Effects of capital structure on profitability will help us to know the potential problems in performance and capital structure using Regression analysis through R- programming.

```
fit<-lm(Profit~Capital,data=BD_2)
```

```
summary(fit)
```

Call:

```
lm(formula = Profit ~ Capital, data = BD_2)
```

Residuals:

```
Min 1Q Median 3Q Max
-16385 -9523 -1189 7735 25217
```

Coefficients:

```
Estimate Std. Error t value Pr(>|t|)
(Intercept) 17173.075 3871.040 4.436 7.59e-05
Capital -8.415 4.117 -2.044 0.0479
```

```
(Intercept) ***
```

```
Capital *
```

```
---
```

Signif. codes:

```
0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
```

Residual standard error: 11320 on 38 degrees of freedom
 Multiple R-squared: 0.09905, Adjusted R-squared: 0.07534
 F-statistic: 4.178 on 1 and 38 DF, p-value: 0.04793

Profit= 17173.075-8.415*capital

From this, we can conclude that if 1% increases in capital then the profit decreases by 8%.

To focus on the relationship between capital structure and profitability of banks.

	Equity	Debt	EPS
Equity	1.00	-0.09	-0.40
Debt	-0.09	1.00	0.09
EPS	-0.40	0.09	1.00

EPS having anegative correlation with Equity, which means if equity increases then the EPS is decreasing.

EPS having apositive correlation with Debt, which means if Debt increases then the EPS is also increasing with very low correlation.

3. Effects of capital structure on profitability will help us to know the potential problems in performance and capital structure

	Estimate	Std. Error	t value	Pr(> t)
(Intercept)	66.97	15.66	4.28	0.00
Equity	-0.04	0.01	-2.90	0.01
Debt	0.00	0.00	0.41	0.68

R-squared =0.72

Equity has a significant effect on EPS.

1. If equity increases by 1 then the EPS is decreasing by -0.04 Rupees.
2. Debt does not have asignificant effect on EPS.Same thing we can observe in the correlation table.

IV. Conclusion:

We can conclude that Public Banks having on an average more capital than Private Banks. We also conclude that there is a negative relation between Capital Structure and profitability. Fromthis, we say that if 1% increases in capital then the profit decreases by 8%.

EPS having negative correlation with Equity, which means if equity increases then the EPS is decreasing.EPS having positive correlation with Debt, which means if Debt increases thentheEPSis also increasing with very low correlation.Equity has a significant effect on EPS.If equity increases by 1 then the EPS is decreasing by -0.04 Rupees.Debt does not have asignificant effect on EPS.

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