INVESTORS’ PERCEPTIONS OF MUTUAL FUND RISKS: AN EMPIRICAL STUDY

Dr. Sampath Kumar

ABSTRACT

The Mutual Fund Industry is a fast growing sector of the Indian Financial Markets. They have become major vehicle for mobilization of savings, especially from the small and household savers for investment in the capital market. Mutual Funds entered the Indian Capital Market in 1964 with a view to provide the retail investors the benefit of diversification of risk, assured returns, and professional management. Every type of investment, including Mutual Funds, involves risk. Risk refers to the possibility that investors will lose money (both principal and any earnings) or fail to make money on an investment. A Fund’s investment objective and its holdings are influential factors in determining how risky a fund is. Reading the prospectus will help the investors to understand the risks associated with that particular Fund.

The study aimed to understand and analyze investor’s perceptions of such risks and expectations, and unveil some extremely valuable information to support financial decision making of Mutual Funds. The detailed analysis revealed that investors perceive risk as under performance, risks in Mutual Fund investments are medium and the returns on Fund investments are not so satisfactory.

KEYWORDS

Mutual Fund, Investors, Risk, Perception, Return etc.

INTRODUCTION

The Mutual Fund Industry is a fast growing sector of the Indian Financial Markets. They have become major vehicle for mobilization of savings, especially from the small and household savers for investment in the capital market. Mutual Funds entered the Indian Capital Market in 1964 with a view to provide the retail investors the benefit of diversification of risk, assured returns, and professional management. Since then they have grown phenomenally in terms of number, size of operation, investor base and scope. Being a part of financial markets although Mutual Funds industry is responding very fast by understanding the dynamics of investor's perceptions towards rewards, still they are continuously following this race in their endeavor to differentiate their products responding to sudden changes in the economy. Every type of investment, including Mutual Funds, involves risk. Risk refers to the possibility that investors will lose money (both principal and any earnings) or fail to make money on an investment. A Fund's investment objective and its holdings are influential factors in determining how risky a fund is. Reading the prospectus will help the investors to understand the risks associated with that particular Fund. Thus, it is time to understand and analyze investor’s perceptions of such risks and expectations, and unveil some extremely valuable information to support financial decision making of Mutual Funds.

REVIEW OF LITERATURE

Nalini Prava Tripathy (2006) in her empirical study “Market Timing Abilities and Mutual Fund Performance- An Empirical Investigation into Equity Linked Saving Schemes” evaluated the market timing abilities of Indian Fund managers of thirty-one tax planning schemes in India over the period December, 1995 to January, 2004 by using Jensen and Mazuy Model and Henriksson and Merton model. The study indicates that the Fund managers have not been successful in reaping returns in excess of the market; rather they are timing the market in the wrong direction.

S. K. Miglani (2007) in his study attempted to understand the Mutual Fund industry and its implications on the common investors on one hand and its returns and performance on the other. An analysis was made on the perceptual views of investors in “Investment Decision Making: An empirical study of perceptual View of Investors” by Yesh Pal Davar and Suveera Gill (2007). The results of this study suggest that investor’s preferences are supposedly related to the actual performance of investments and the same is taken into account while forming an opinion about making future investment decision. In their study entitled “A study on Investors perception towards Mutual Fund investments”, S. Sudalaimuthu and P. Senthil Kumar (2008)9 was concentrated on highlighting the investor awareness and preference in Mutual Fund schemes, factor that influences the investor in selecting Mutual Fund scheme, the level of satisfaction on the investment of Mutual Fund, problems faced by Mutual Fund investors and the investment objectives, preference among Fund types (balanced, growth, dividend) etc.

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OBJECTIVES

- To study the investors’ perceptions of risk.
- To study the investors’ perceptions of Mutual Fund risks, and
- To study the investors’ satisfaction over return on Mutual Funds.

HYPOTHESIS

- $H_0$: The age of the investors and their perception of risk are independent.
- $H_0$: The marital status of the investors and their opinion on risks associated with Mutual Funds are independent.
- $H_0$: The annual income of the investors and their opinion on risks associated with Mutual Funds are independent.

RESEARCH METHODOLOGY

The present study was conducted by gathering both Primary and Secondary data. The primary data was collected through a questionnaire and the Secondary data was collected from Journals, Books, Magazines, News Papers, and website. Investors who invested in Mutual Funds constitute the universe of the study. The Survey was conducted among 555 geographically dispersed investors spread over 12 urban and semi-urban areas in four districts of Rayalaseema region of Andhra Pradesh in India. The survey was conducted for the period of six months i.e. from September 2010 to November 2010. The data drawn from various sources are analyzed with the help of statistical tools and techniques such as percentages and Chi- square tests.

$$\text{Chi-square } (\chi^2) = \sum \frac{(\text{Observed frequency} - \text{Expected Frequency})^2}{\text{Expected Frequency}}$$

PERCEPTIONS OF MUTUAL FUND RISKS

Table 1: Demographics Details of Respondents

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Number of Respondents</th>
<th>Percentage to Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>500</td>
<td>90.09</td>
</tr>
<tr>
<td>Female</td>
<td>55</td>
<td>9.91</td>
</tr>
<tr>
<td>Total</td>
<td>555</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Below 30 years</td>
<td>215</td>
<td>38.74</td>
</tr>
<tr>
<td>30-40 years</td>
<td>220</td>
<td>39.64</td>
</tr>
<tr>
<td>40-50 years</td>
<td>60</td>
<td>10.81</td>
</tr>
<tr>
<td>Above 50 years</td>
<td>60</td>
<td>10.81</td>
</tr>
<tr>
<td>Total</td>
<td>555</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unmarried</td>
<td>115</td>
<td>20.72</td>
</tr>
<tr>
<td>Married</td>
<td>440</td>
<td>79.28</td>
</tr>
<tr>
<td>Total</td>
<td>555</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employee</td>
<td>310</td>
<td>55.86</td>
</tr>
<tr>
<td>Business</td>
<td>130</td>
<td>23.42</td>
</tr>
<tr>
<td>Others</td>
<td>115</td>
<td>20.72</td>
</tr>
<tr>
<td>Total</td>
<td>555</td>
<td>100.00</td>
</tr>
<tr>
<td><strong>Annual Income</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than Rs. 100000</td>
<td>310</td>
<td>55.86</td>
</tr>
<tr>
<td>Rs. 100001 to Rs. 300000</td>
<td>195</td>
<td>35.14</td>
</tr>
<tr>
<td>Rs. 300001 to Rs. 600000</td>
<td>35</td>
<td>6.31</td>
</tr>
<tr>
<td>Rs. 600001 to Rs. 1000000</td>
<td>10</td>
<td>1.8</td>
</tr>
<tr>
<td>Above Rs. 1000000</td>
<td>5</td>
<td>0.9</td>
</tr>
<tr>
<td>Total</td>
<td>555</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation
Table-2: Investors’ Perceptions of Risk

<table>
<thead>
<tr>
<th></th>
<th>Number of Respondents</th>
<th>Percentage to Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under performance (Returns)</td>
<td>290</td>
<td>52.25</td>
</tr>
<tr>
<td>Loss of Principal Amount</td>
<td>112</td>
<td>20.18</td>
</tr>
<tr>
<td>Loss of Principal and Return</td>
<td>153</td>
<td>27.57</td>
</tr>
<tr>
<td>Total</td>
<td>555</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

Majority of the investors (52.25 per cent) believe Risk as under performance (low returns) which indicates the curiosity of the investors to earn income.

Table-3: Age-wise Investors’ Perceptions of Risk

<table>
<thead>
<tr>
<th>Age</th>
<th>Under Performance</th>
<th>Loss of Principal Amount</th>
<th>Loss of Principal and Return</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than 30 years</td>
<td>158 (011)</td>
<td>37 (012)</td>
<td>20 (013)</td>
<td>215</td>
</tr>
<tr>
<td>30 to 40 years</td>
<td>104 (021)</td>
<td>42 (022)</td>
<td>74 (023)</td>
<td>220</td>
</tr>
<tr>
<td>40 to 50 years</td>
<td>16 (031)</td>
<td>23 (032)</td>
<td>21 (033)</td>
<td>60</td>
</tr>
<tr>
<td>More than 50 years</td>
<td>12 (041)</td>
<td>10 (042)</td>
<td>38 (043)</td>
<td>60</td>
</tr>
<tr>
<td>Total</td>
<td>290</td>
<td>112</td>
<td>153</td>
<td>555</td>
</tr>
</tbody>
</table>

| Calculated Value     | 108.29            |
| Table Value          | 7.815             |
| Degree of Freedom    | 3                  |

Sources: Authors Compilation

H0: The age of the investors and their perception of risk are independent analyzed.

Calculated Value = 108.29 and Table Value 7.815 (for 3 d.f. at 5 per cent level of significance). Since the calculated value of Chi-square is greater than the table value of Chi-square for 3 d.f. at five per cent level of significance, the H0 is rejected. The biggest risk of investing in a Mutual Fund is underperformance. When an investor decides to invest in a particular Fund, he typically expects to get the return that the benchmark of the asset provides.

Table-4: Risks Associated with Mutual Funds

<table>
<thead>
<tr>
<th>Degree of Risks in Mutual Funds</th>
<th>Number of Respondents</th>
<th>Percentage to Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>136</td>
<td>24.50</td>
</tr>
<tr>
<td>Medium</td>
<td>314</td>
<td>56.58</td>
</tr>
<tr>
<td>Low</td>
<td>105</td>
<td>18.92</td>
</tr>
<tr>
<td>Total</td>
<td>555</td>
<td>100.00</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

Investors were asked to express their opinion on risks associated with Mutual Funds and the values were depicted in Table 4. Majority of the investors (56.58 per cent) felt that the risks associated with Mutual Funds are medium. Interestingly, majority of the un-married investors (63.48 per cent) felt that the risks in Funds are very low. In contrast to this, most of the married investors (65 per cent) opined that the risks are medium. Majority of the investors whose age is more than 50 years (63.33 per cent) opined that risk refers to both loss of principal and as well as income. All the investors whose income is above Rs. 6 lakhs felt that the risks in Mutual Funds are low. Majority of the investors whose income is less than Rs. 1 lakh said that the risks in Mutual Funds are medium.

Table-5: Marital status-and Risks Associated with Mutual Funds

<table>
<thead>
<tr>
<th>Marital Status</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Un married</td>
<td>24 (011)</td>
<td>18 (012)</td>
<td>73 (013)</td>
<td>115</td>
</tr>
<tr>
<td>Married</td>
<td>112 (021)</td>
<td>286 (022)</td>
<td>32 (023)</td>
<td>440</td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
<td>314</td>
<td>105</td>
<td>555</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation
Table 5 test the second hypothesis. H0: The marital status of the investors and their opinion on risks associated with Mutual Funds are independent. Calculated Value = 16.5691 and Table Value 5.991 (for 2 d.f. at 5% level of significance). Since the calculated value of Chi-square is greater than the table value of Chi-square for 2 d.f. at 5% level of significance, the H0 is rejected.

Table-6: Annual Income and Risks Associated with Mutual Funds

<table>
<thead>
<tr>
<th>Income Level</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Less than Rs. 1,00,000</td>
<td>83 (011)</td>
<td>204 (012)</td>
<td>23 (013)</td>
<td>310</td>
</tr>
<tr>
<td>Rs. 1,00,000 to Rs. 3,00,000</td>
<td>39 (021)</td>
<td>101 (022)</td>
<td>55 (023)</td>
<td>195</td>
</tr>
<tr>
<td>Rs. 3,00,000 to Rs. 6,00,000</td>
<td>14 (031)</td>
<td>9 (032)</td>
<td>12 (033)</td>
<td>35</td>
</tr>
<tr>
<td>Rs. 6,00,000 to 10,00,000</td>
<td>0 (041)</td>
<td>0 (042)</td>
<td>10 (043)</td>
<td>10</td>
</tr>
<tr>
<td>Above Rs. 10,00,000</td>
<td>0 (051)</td>
<td>0 (052)</td>
<td>5 (053)</td>
<td>5</td>
</tr>
<tr>
<td>Total</td>
<td>136</td>
<td>314</td>
<td>105</td>
<td>555</td>
</tr>
</tbody>
</table>

| Calculated Value | 116.19 |
| Table Value      | 9.488  |
| Degree of Freedom| 4      |

Sources: Authors Compilation

Table 6 test H0: The annual income of the investors and their opinion on risks associated with Mutual Funds are independent. Calculated Value = 116.19 and Table Value 9.488 (for 4 d.f. at 5 per cent level of significance). Since the calculated value of Chi-square is greater than the table value of Chi-square for 4 d.f. at five per cent level of significance, the H0 is rejected. The most disappointing finding is that 53.15 per cent of the Fund investors are just satisfied with respect to the returns, which in fact reveal their dissatisfaction over the Funds’ performance.

Table-7: Investors’ Satisfaction over Return on Mutual Funds

<table>
<thead>
<tr>
<th>Particulars</th>
<th>Highly Satisfied</th>
<th>Moderately Satisfied</th>
<th>Satisfied</th>
<th>Not Satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Return</td>
<td>15</td>
<td>143</td>
<td>295</td>
<td>102</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

FINDINGS

- Most of the investors opined that risk is under performance (52.25 per cent).
- 56.58 per cent of the investors felt that the risks in Mutual Funds are medium (56.58 per cent).
- Most of the unmarried investors stated that the risks in Mutual Funds are low (63.48 per cent).
- In contrast to unmarried investors, 65 per cent of married investors said that the risks in Mutual Funds are medium.
- Majority of the investors whose age is more than 50 years (63.33 per cent) opined that risk refers to both loss of principal and as well as income.
- All the investors whose annual income is above Rs. 6 lakhs felt that the risks in Mutual Funds are low.
- Majority of the investors whose annual income is less than Rs. 1 lakh said that the risks in Mutual Funds are medium.
- Most of the investors were just satisfied with respect to the return on Funds.

SUGGESTIONS

- As majority of the respondent investors are much more anxious with the prior information pertaining to risks in investing, the Mutual Fund companies (MFCs) have to think about higher levels of disclosures in this regard.
- As majority of the investors feel the risk as under performance, Mutual Fund companies may work hard to offer the returns as expected by them.
- The MFCs may concentrate on mobilizing the resources from the investors whose annual income exceeds Rs. 6 lakhs as they feel that the risks in Mutual Funds are low.
- MFCs may concentrate on unmarried investors for their resource mobilization.
- As every investment involves risk, the MFCs may try to educate the investors about risks by conducting awareness programmes.
The Fund Managers should precisely concentrate on portfolio construction to generate more returns. The MFCs may try to mobilize the funds from the people other than employees opening information centers in different areas of the country.

CONCLUSION

The present study endeavored to throw a light on the investors’ perceptions of Mutual Fund risks. Understanding the requirements of investors by the Mutual Fund Companies has become necessary to accelerate the required pace of growth. A detailed analysis of risk perceptions of the investors was made in this study. Survey findings of this study have significant implications that can be adopted by the Fund companies either by adding to the existing practices or by replacing.

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A STUDY ON FINANCIAL RISK PLANNING WITH RESPECT TO NATURAL DISASTER

Dr. A. R. Nithya2 G. Gopinath3 R. Karthick4

ABSTRACT

The study on financial risk planning with respect to the natural disaster, studies about financial policies and schemes for the natural disaster, effectiveness of the schemes for reconstruction and rehabilitation. The Research Methodology used in this study is Qualitative research and research design is Descriptive design, Sampling method is Simple Random Sampling. The size of the sample is 50; the data given by samples are analyzed with statistical tool like Chi square test, Mann Whitney U test and Regression analysis.

KEYWORDS

Financial Risk, Natural Disaster, Reconstruction, Rehabilitation etc.

INTRODUCTION

A disaster is a sudden, calamitous event that seriously disrupts the functioning of a community or society and causes human, material, and economic or environmental losses that exceed the community’s or society’s ability to cope using its own resources. Though often caused by nature, disasters can have human origins. Disaster risk is expressed as the likelihood of loss of life, injury or destruction and damage from a disaster in a given period. Disaster risk is widely recognized as the consequence of the interaction between a hazard and the characteristics that make people and places vulnerable and exposed.

Disaster = Hazard + Exposure + Vulnerability

Disaster Management

Disaster management is the creation of plans through which communities reduce vulnerability to hazards and cope with disasters. Disaster management does not avert or eliminate the threats; instead, it focuses on creating plans to decrease the effect of disasters. These are activities designed to provide permanent protection from disasters. Not all disasters, particularly natural disasters, can be prevented, but the risk of loss of life and injury can be mitigated with good evacuation plans, environmental planning and design standards. In January 2005, 168 Governments adopted a 10-year global plan for natural disaster risk reduction called the Hyogo Framework. It offers guiding principles, priorities for action, and practical means for achieving disaster resilience for vulnerable communities.

OBJECTIVES OF STUDY

- To study the awareness about financial protection.
- To find the method of rehabilitation from disaster.
- To study on causal impact on financial risk to investment.
- To provide suggestions about financial protection schemes.

REVIEW OF LITERATURE

“A disaster is an occurrence disrupting the normal conditions of existence and causing a level of suffering that exceeds the capacity of adjustment of the affected community.” The word disaster implies a sudden overwhelming and unforeseen event. At the household level, a disaster could result in a major illness, death, a substantial economic or social misfortune. At the community level, it could be a flood, a fire, a collapse of buildings in an earthquake, the destruction of livelihoods, an epidemic or displacement through conflict. When occurring at district or provincial level, a large number of people can be affected. Most disasters result in the inability of those affected to cope with outside assistance. At the household level, this could mean dealing with the help from neighbours; at the national level, assistance from organizations such as the International Federation of Red

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Cross and Red Crescent Societies, the United Nations, various Non-governmental Organizations (NGOs) and government agencies themselves.

RESEARCH METHODOLOGY

Empirical research is used to describe characteristics of a population being studied. It can acquire a lot of information through description. It is useful for identifying variables and hypothetical constructs. Questionnaire constructed to collect primary data. Sample collected through Simple Random Sampling method. The sample size of the study is 50.

TYPES OF DISASTERS

Natural: These are primarily natural events. It is possible that certain human activities could maybe aid in some of these events, but, largely, these are mostly natural events caused by earthquakes, Volcanos, Floods and Tornadoes, Typhoons, Cyclones.

Man Made: These are mostly caused due to certain human activities. The disasters themselves could be unintentional, but are caused due to some intentional activity. Most of these (barring coordinated terrorist activities) are due to certain accidents – which could have been prevented – if sufficient precautionary measures were put in place. It occurs due to nuclear leaks, chemical Leaks/Spill over, Terrorist Activities and Structural Collapse.

FINANCIAL PROTECTION

Home Insurance

Any natural calamity, like an earthquake, flood or storm, usually damages the property. Usually people secure their homes and business establishments through a basic fire insurance policy that covers your house and its content against fire and other allied perils such as lightening, storms and floods. The cover against the calamity of earthquake is typically an add-on cover because the premiums for covering earthquake depend on the geographical zone the house falls in. Another option is to go for a household’s package policy (HPP) that adds more options to the basic fire insurance cover. So apart from dealing with natural perils, it would secure the house and its contents against burglary, damage and mechanical or electrical breakdowns. HPP also includes optional insurance covers such as public liability (compensates a third party for losses caused by you), personal accident (offers an income stream for the period you are unable to work due to a temporary or permanent disability caused by an accident) and workmen’s compensation.

Life Insurance

It takes a completely unexpected natural disaster such as an earthquake or floods to change the financial contours of a family. What if you are the only earning member of your family and you become a victim of such a calamity? A basic term life insurance cover ensures that your family remains financially secure even in your absence. This cover provides maximum cover for the lowest premium, but does not give any returns in case you survive the term of the policy.

- **Risk Identification:** It includes Hazard mapping, Risk modelling, social perception and Priority settings.
- **Risk Reduction:** It can be carried out through Territorial and sectorial planning, Building codes, Risk mitigation works, Infrastructure retrofitting and Education, creation of culture of prevention.
- **Financial Protection:** It is done through Reserve mechanism, Budget planning, Risk transfer insurance, insurance linked securities and Budget appropriation, Execution in emergency.
- **Preparedness:** It means Alert and early warning systems, Response planning, training, equipment, logistics, simulations and Response system management.
- **Post Disaster Reconstruction:** It includes Institutional planning, strengthening, Recovery planning reconstruction policies and Rehabilitation plans.

SOURCES OF FINANCING POST DISASTER

Governments generally have access to various sources of financing following a disaster. These sources can be categorized as ex-post and ex-ante financing instruments. Ex-post instruments are sources that do not require advance planning. This includes budget reallocation, domestic credit, external credit, tax increase, and donor assistance. Exante risk financing instruments require pro-active advance planning, include reserves or calamity funds, budget contingencies, contingent debt facility, and risk transfer.
mechanisms. Risk transfer instruments are instruments through which risk is ceded to a third party, such as traditional insurance and reinsurance, parametric insurance and Alternative Risk Transfer (ART) instruments such as catastrophe (CAT) bonds.

Financial Exposure and Funding Gap Analysis

A financial exposure and funding gap analysis aims to identify situations where needs would exceed available resources, in the case of disasters. A first step in such analysis consists of analyzing the likely funding needs resulting from natural disasters. These potential funding needs are then contrasted with available resources to identify potential gaps or inefficiencies.

Insurance for Disaster: Even though a house is the costliest asset for most Indians, very few people take home insurance in India. "Even though it is very cheap, less than 1% of the people who can afford home insurance actually buy this cover," This is surprising because India is a disaster prone country. As the map shows, 30% of the Indian landmass is prone to earthquakes of severe intensity. Another 27% is prone to moderate earthquakes and only 43% is in the safe zone of low intensity. The risk does not stop there. Nearly 12% of India is prone to floods and 76% of its 7,516 km coastline is prone to cyclones and tsunamis.

DIRECT AND INDIRECT FINANCIAL IMPACT OF NATURAL DISASTER

Government

It includes Emergency response and recovery expenditures, Reconstruction expenditures for uninsured or underinsured public infrastructure, public buildings, and often low-income housing, Cost for improvements of reconstructed infrastructure as well as for relocation of at-risk population, Decreased tax revenue due to economic disruption and declines in GDP Growth, Increased domestic/international borrowings cost AND Increased expenditures for social support programs.

Farmers

It relates to Restocking / replanting / rehabilitation of productive assets such as livestock or crops, Loss of income for farmers and other supply chain actors due to interruption of crop production, Loss of income for farmers and other supply chain actors due to economic decline or lack of access to markets and Increased risk aversion to new and innovative investments leading to adoption of low yield but safer seed varieties.

Homeowners and SMEs

It relates to Reconstruction costs due to damage of often uninsured or uninsured assets, Health and other financial costs associated with human fatalities, injuries and disabilities and Loss of income due to economic decline.

DISASTER RISK FINANCING AND INSURANCE POLICY AND THEIR BENEFITS

- Sovereign Disaster risk financing.
- Agricultural insurance.
- Property Catastrophe risk insurance.
- Disaster-Linked Social Protection.

Figure-1: Five Characteristics of Cost-Effective Financial Protection for Natural Disaster

Sources: Authors Compilation
Disaster Planning & Management

Government of India has taken several initiatives for strengthening disaster reduction strategies. Government of India constituted an Expert Group to examine the related issues and evolve recommendations for improving preparedness and prevention with respect to natural disasters caused by earthquakes, floods and cyclones.

Issues Addressed

Expert Group appointed by the Govt. examined the status of work being carried out. Identify various hazard prone areas, Vulnerability and Risk Assessment of Buildings, Disaster damage scenarios, Technical Guidelines for Hazard Resistant Construction of Buildings.

Economic Loss in Chennai Floods

The floods in Chennai last year caused an economic loss of $2.2 billion, out of India's total economic loss of $6.2 billion suffered due to disasters in 2015, says a study by reinsurance company Swiss Re. According to the study, uninsured losses from all catastrophes were 84 percent of total losses in 2015 down from 93 percent in 2014. Although the protection gap was smaller last year than in 2014, it was still high relative to global and regional standards. The Chennai industrial community has suffered a huge loss of over 500 crore due to floods.

The National Flood Insurance Program

The National Flood Insurance Act created the National Flood Insurance Program (NFIP), which was designed to stem the rising cost of taxpayer-funded relief for flood victims and the increasing amount of damage caused by floods. The NFIP has three components: to provide flood insurance, floodplain management and flood hazard mapping. Federal flood insurance is only available where local governments have adopted adequate floodplain management regulations for their floodplain areas as set out by NFIP. More than 20,000 communities across the country participate in the program. NFIP coverage is also available outside of the high-hazard areas.

Age vs. Financial Protection

Table 1

<table>
<thead>
<tr>
<th>Age</th>
<th>HS</th>
<th>Secured</th>
<th>napopn</th>
<th>unsec</th>
<th>hungry</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-30</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>10</td>
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<tr>
<td>31-40</td>
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<td>0</td>
<td>0</td>
<td>0</td>
<td>30</td>
</tr>
<tr>
<td>41-50</td>
<td>10</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>&gt;50</td>
<td>10</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>20</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>60</td>
</tr>
</tbody>
</table>

Chi-Square Tests

<table>
<thead>
<tr>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>1.000E+02</td>
<td>12</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>79.757</td>
<td>12</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>33.056</td>
<td>1</td>
</tr>
</tbody>
</table>

Age vs. Financial Protection

<table>
<thead>
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<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
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<td>12</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>33.056</td>
<td>1</td>
</tr>
</tbody>
</table>

2.19 cells (90.0%) have expected count less than 5. The minimum expected count is 16.

Symmetric Measures

<table>
<thead>
<tr>
<th>Value</th>
<th>Asymp. Std. Error</th>
<th>Asymp. T*</th>
<th>Approx. Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal by Interval Pearson's R</td>
<td>.93</td>
<td>.027</td>
<td>13.730</td>
</tr>
<tr>
<td>Ordinal by Ordinal Spearman Correlation</td>
<td>.925</td>
<td>.064</td>
<td>10.997</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>60</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

2615 | P a g e
FINDINGS

- 60% of respondents are aged between 41-50 years.
- 40% of the respondents have income from 10000-15000.
- 40% of respondents are self-employed and another 40% of respondents are salaried people.
- 70% of respondents are in nuclear family.
- 60% of respondents are unmarried.
- 50% of respondents had completed their degree qualification.
- 40% of respondents are said risk coverage is effective in financial risk planning.
- 40% of respondents are felt financial planning is secured and another 40% of respondents are felt that financial risk planning is highly secured.
- 60% of respondents are strongly agree the opinion about dilution of risk is possible with financial risk planning.
- 26% of respondents said no opinion about satisfaction of risk quantification return.
- 34% of respondents are agree that financial risk plan as an investment to satisfy savings need.
- 34% of respondents are unaware about financial risk planning for disaster.
- The correlation value 0.83, it infers high positive correlation. There is a high relationship between age and the respondent’s opinion about financial protection.

**Income vs. Financial Protection**

<table>
<thead>
<tr>
<th>Interval</th>
<th>Pearson's R2</th>
<th>Asymp. Sig.</th>
<th>Approx. T*</th>
<th>Approx. Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>0.83</td>
<td>.0027</td>
<td>13.730</td>
<td>.000*</td>
</tr>
<tr>
<td>Fisher's Exact Probability</td>
<td>50</td>
<td>.3074</td>
<td>10.697</td>
<td>.000*</td>
</tr>
</tbody>
</table>

**Table-2**

<table>
<thead>
<tr>
<th>Income</th>
<th>Secured</th>
<th>No Opinion</th>
<th>Unsecured</th>
<th>Unsecured</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>10000-15000</td>
<td>19</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>16000-20000</td>
<td>1</td>
<td>10</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>21000-25000</td>
<td>0</td>
<td>10</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>&gt;25000</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>20</td>
<td>20</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Chi-Square Tests</th>
<th>Value</th>
<th>df</th>
<th>Asymp. Sig. (2-sided)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pearson Chi-Square</td>
<td>0.83</td>
<td>12</td>
<td>.000</td>
</tr>
<tr>
<td>Likelihood Ratio</td>
<td>99.232</td>
<td>12</td>
<td>.000</td>
</tr>
<tr>
<td>Linear-by-Linear Association</td>
<td>39.789</td>
<td>1</td>
<td>.000</td>
</tr>
<tr>
<td>N of Valid Cases</td>
<td>50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Data Interpretation

The Chi square value is 88.037, and associated P value is 0.000, as the P value is less than 0.05, Null hypothesis can be rejected, so there is a significant relationship between amount of income earned by the respondents and their opinion about financial protection schemes.

**Marital Status vs. Risk Coverage**

<table>
<thead>
<tr>
<th>Rank</th>
<th>N</th>
<th>Mean Rank</th>
<th>Sum of Ranks</th>
</tr>
</thead>
<tbody>
<tr>
<td>risk coverage</td>
<td>married</td>
<td>20</td>
<td>12.00</td>
</tr>
<tr>
<td></td>
<td>unmarried</td>
<td>50</td>
<td>33.90</td>
</tr>
<tr>
<td>Total</td>
<td>50</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Test Statistics**

<table>
<thead>
<tr>
<th>Test Statistic</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>48.000</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>258.000</td>
</tr>
<tr>
<td>Z</td>
<td>-6.230</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Grouping Variable: marital status

**Sources:** Authors Compilation

**Mann Whitney’s U test**

From the Mann Whitney U test the value for U is 48 associated P value is 0.000, so the P value is less than 0.05. Reject Null hypothesis, there is significant difference between the marital status and how they perceive the risk coverage schemes.

**Safety and Security vs. Financial Protection**

**Table-4**

<table>
<thead>
<tr>
<th>Variables Entered/Removeda,b</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables Entered</td>
<td>Variables Removed</td>
</tr>
<tr>
<td>safety</td>
<td>security</td>
</tr>
</tbody>
</table>

a. All requested variables entered
b. Dependent Variable: financial protection

**Model Summary**

<table>
<thead>
<tr>
<th>Model</th>
<th>R</th>
<th>R Square</th>
<th>Adjusted R Square</th>
<th>Std. Error of the Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>.985</td>
<td>.970</td>
<td>.959</td>
<td>.186</td>
</tr>
</tbody>
</table>

a. Predictors: (Constant), safety-security

**ANOVA**

<table>
<thead>
<tr>
<th>Model</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
</table>
| 1 | Regression | 53.168 | 1 | 53.168 | 1.545E3 | .000*
| Residual | 1.653 | 48 | .034 |
| Total | 54.820 | 49 | |

**Sources:** Authors Compilation
In regression analysis, $r = 0.985$ the F value = 1.54, it can be inferred that, there is a strong relationship, influencing variable costing between safety and security and financial protection. The F value is 1.54. Not only safety and security plays the role in selection of risk planning investment and there may be a chance for other factors.

**SUGGESTIONS**

- The banking sector and insurance sector can take age factor as a dominant one for designing their schemes for the banking customers, and they have schemes of plans by focusing income too as a dominant factor.
- Perception of risk coverage plan is different between single and married. Banking and insurance sector can have exclusive schemes for about insurance.
- From the regression analysis, it is inferred that the influencing variables safety and security plays a dominant role in financial protection schemes. The respondent mind set focus mainly on safety and security.

**CONCLUSION**

The study is on financial risk planning with respect to natural disaster, which concludes that, People have no awareness about these financial schemes for natural disaster. The banking and insurance sectors can improve the knowledge of people about their schemes. This type of schemes provide safety and security to the assets of people so financial risk planning ensures prevention of loss from disasters.

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FINANCIAL IMPACT OF NATURAL DISASTERS

K. Murugan5 N. Parthiban6 P. Sivaraman7

ABSTRACT

Since the last decade, we have observed progressively destructively natural calamities in southeast Asia, Haiti, New Zealand, Japan and India. While much of the focus is agreeably on the immediate impact, this column declares that the long-term economic costs are frequently undervalued or even failed to notice. Crucial natural disasters can and do have severe negative short-run economic impacts. Disasters also seem to have unfavorable longer-term result for economic growth, development and poverty depletion. However, negative impacts are not unavoidable. Damages are transferring quickly, especially in terms of government funding and privately funded market tools. Natural hazard risk management should be integrated with technological advances in the region of electronic etc.

IMPLICATIONS

Natural Calamities, Disasters, Economic Transformation, Financing Reconstruction etc.

INTRODUCTION

In the Caribbean and Bangladesh there is a proof of both reducing sensitivity to tropical storms and floods and increased flexibility resulting from both economic change and public actions for disaster trimming. The largest attention of high-risk countries, are increasingly at risk to climatic hazards, as in Sub-Saharan Africa. Risks emerging from geophysical hazards need to be better identified in highly revealed urban areas across the world because their possible costs are rising integrally with economic development. Natural disasters cause remarkable budgetary pressures, with both hardly fiscal short-term impacts and wider long-term development implications. Reassigning is the major fiscal response to disaster. Disasters have lesser impact on drift in total aid flows.

PUBLIC POLICY IMPLICATIONS

A full inspection of the economic and financial impact of a major disaster should be made 18 to 24 months after the event that is then taken into account in studying the affected country’s short-term economic performance and support strategy. Governments need necessary risk management strategies for future disasters that include medium-term financial planning for 8 – 10 years. The basis of funding has to be widened, applying a combination of mechanisms at different layers of loss coverage to help overcome the difficulties to increased coverage of insurance and capital market tools. Natural hazard risk management should be integrated into longer-term national investment policies and development strategies and accordingly reflected in the distribution of financial resources. Quality, reliable scientific information is a mandatory condition for effective disaster risk management. Prime concern includes climatic changes, regional and national flood forecasting and geophysical hazards.

The need to develop feasible and appropriate possibility plans is particularly risky in the area of extremity financial management. Governments living in a cash and paper world have little probability of success in responding to the needs of their citizens and the suffering of victims in the corollary of a disaster. The implementation of technological advances in the region of electronic banking and financial management are now making governments to replace cash and paper with speed, clear, efficient, and directed ways to move money in a crisis. Regrettably, these tools require planning and cannot be initiated as calamity strikes. There are many examples of financial crisis management where pre-crisis work is difficult to reduce damage and human mortality as well as improving response effectiveness.

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Infrastructure: Pre-crisis investment in improving manual urban infrastructure can save numerous dollars in post-crisis reconstructing efforts, particularly in coastal urban areas with more populations and notable GDP concentrations. While fiscal stress and competing suppressed demand for new infrastructure projects present control on government, investment in infrastructure maintenance, land use management, and flexibility can make a huge difference.

Government Procurement: Natural disasters make worse this problem, as the dependence on cash and paper abolishes the ability to manifest and effectively place and compensate government vendors. Small and medium enterprises (SMEs), often at the forefront end of the emergency comeback supply chain (medicine, food, shelter, road repair, etc.), can only run for so long without being paid, and they frequently do not have the fluidity to direct through a multi-month crisis. Pre-issued and pre-positioned procurement cards, immediate issue emergency procurement cards, and essential cards are all variations on how card technology is increasing transparency and running best practices in ensuring governments’ capacity to procure in a crisis.

Emergency Relief Funds Distribution Process: The financial introducing plan is directly related to emergency funds transfer. If one were to draw a Venn diagram composing of three circles, one for poor families that require government financial assistance, one for the unbanked, and another for the hardest hit victims of natural disasters, the three circles would end up being essentially concentric. That is why the condition of the unbanked and the policy agenda around government benefit payments is fully straightened with successful post-crisis distribution of emergency relief funds. Presently, the prepaid benefit card is the result of choice in this area, replacing paper voucher systems; helicopters carrying emergency bags loaded with cash will soon become outdated.

Electronic banking tools and the use of cards have become progressively important in encouraging donors that the monies they provide not only arrive but also are having an impact. In fact, it is important to note that recent helping donors (governments, NGOs or corporate), are not only engaging less to countries where aid flows lack of transparency and control, but in many cases, they are actually refusing to accept for lack of comfort around the fund distribution processes. Going forward, as mobile financial proposals become more usual in developing countries, we will likely see the mobile phone overcome benefit cards as a crisis payment form.

Following a disaster, governments are often faced with financial struggles to fund recovery and reconstruct damaged areas. Having plans in place that allow liquidity during the immediate crisis is necessary. At a time when governments are locked in debt and deficits, finding innovative funding solutions is vital. One way to manage the financial risks of disasters is by issuing disastrous bonds, which pay out in the event of specified parametric entrance and take advantage of investor desire to take conflicting risk. There are countless partnership examples, including Coca-Cola and the Red Cross, Swiss-Re and USAID, Target and FEMA, FedEx and the U.S. Chamber of Commerce, as well as Citi and the World Food Program. These partnerships bring innovation to response efforts with a point on improving speed, efficiency, and impact. However, what really explains the success of these public-private efforts is their focus on pre-crisis planning and preparation.

MITIGATING MEASURES

Challenges: Introducing or modifying methods can be a long and sometimes winding process, not least because few development or humane organizations would now examine policy changes without extensive discussion with all the main stakeholders, especially their local partners. Appropriate time, effort and money may be spent on this. Senior managers are afraid to revise policies or methods unless they are convinced it is necessary, and only after seeing the result of those already in place. Large agencies have more time, money and eagerness for strategic planning, whereas smaller ones lack the resources for this. International agencies operating in many countries can find it tough to implement rational regional strategies where individual countries’ situation and importance may vary widely. Moreover, operational guidelines normally contain so many issues to consider that no development or emergency program can address them all sufficiently, and some are bound to be compressed out by those that look to be more important. Where an organization’s mechanisms for observing or assuring project quality are weak, the gap between theory and practice will extend. Even when issues are strongly established at strategic level and in planning guidelines, individual projects may continue to show little or no understanding of the subject. Organizational size is an apparent influence on the rate of change. Small organizations, especially grass roots ones and NGOs, often function as teams of individuals and can modify their outlooks and systems relatively quickly. Project documentation may be non-existent or difficult to find, and of poor quality. Overwork is another major barrier. Its significance cannot be overstated. Most people working in relief and development agencies are too busy, most of the time, to reveal about or absorb new ideas. In many agencies overwork, and pressures of work, have become structured weaknesses.

Opportunities: Disaster mitigation, preparedness, and vulnerability to natural hazards are rising up the policy agenda. Attitudes are changing, with the old view of disasters as one-off events being gradually substituted by awareness of the links between disasters and development processes. This change has taken place mainly as an outcome of the severe ‘natural’ disasters in the past few years – hurricanes Mitch and Georges in 1998, the Bangladesh floods of the same year, the Orissa cyclone in 1999, the Mozambique floods in 2000 and the Gujarat earthquake in 2001 – which obligated many agencies to rethink their approach.
Specialist technical advisers can be very influential in encouraging, advising and supporting project managers. They can operate across an organization, which may otherwise be compartmentalized in its structure and the focus of its work and thinking – a real problem for larger institutions. They have a mandate and, crucially, time to think. Their influence can come not just from their position and expertise, but also from their character and approach, and the duration of time they have worked in the organization. In larger organizations, the decentralization of authority from international headquarters to country offices, or from capital cities to districts is convention pace. This may make agencies more sensitive to hazards and vulnerability, at least at local level.

**ROLE OF NGOS IN DISASTER PREPAREDNESS**

NGOs play an important role and can be made responsible at various levels in developing capacity and ability for disaster preparedness. At state level, NGOs have been organized to take correlated action for disaster preparedness. Government officials in many states are active partners of such coordinated action and both stakeholders are known to benefit from this partnership. Areas of Involvement are: (a) Advocacy: NGOs are powerful advocacy institutions and would collaborate with the Government in reviewing various sectored policies to ensure that Disaster Preparedness concerns are addressed. (b) Assessment: NGOs may donate in implementing Participatory Assessment of Disaster Risk (PADR) processes at the community level to assess the risks to various hazards in their respective areas of function. The process may also recognize available resources and capacities within the community to overcome and address risks. Members of the PRI and the district level elected representatives would be involved in these processes. (c) Capacity building: NGOs may construct the capacities of the community and other government officials at district and state level to handle activities in various confined areas which will result in the combination of the same in the Disaster Management or other departmental plans and may also facilitate preparation of the plans by involving the local communities and the Panchayat Raj Institutions. (d) Knowledge Management: NGOs may play an important role in generating awareness and building capacity on Disaster Management at various levels.

**COMPREHENSIVE STUDY**

The Asian and Pacific region is vulnerable to many types of disasters, including floods, cyclones, earthquakes, drought, storm surges and tsunamis. During the past decade, on average, more than 200 million people were affected and more than 70,000 people were killed by natural disasters annually. Those figures represent 90% and 65% of the world totals, respectively. Economic damages were proportionately smaller during the same period, at 38% of the world total (based on damages in 2005 US dollars). However, even that proportion exceeds the world average in terms of the Asian and Pacific share of global production or GDP, which is currently about 29% in constant 2005 US dollars.

Asian and Pacific countries have a high vulnerability to the impacts of disasters. With increasing urbanization, migration patterns and population growth in general, people are occupying high-risk areas in greater numbers than ever, increasing their vulnerability to disaster impacts. Disasters do not respect borders or distinguish between income levels; however, the effect of disasters on human lives tends to be the lowest in high-income countries. In Asia-Pacific high income countries, about 1 person in every 1,000 people was affected by disasters and 1 in 1 million died during the 10 years from 2001 to 2010; in low-income countries nearly 30 in 1,000 people were affected and 52 in 1 million people killed. More people in the lower-middle income group were affected than people in the low-income countries, although the mortality ratio in the lower-middle group was lower.

**Graph-I: Affected People from Natural Disasters**

Sources: Authors Compilation
For purposes of national and international use, disaster damages are commonly presented in relation with GDP. The ratio of a stock indicator (assets accumulated over a long period and suddenly damaged in the affected region) to a flow indicator (goods and services produced in the whole country within a year) is calculated in order to relate the scale of different disasters among different countries rather than for its sound methodological connection.

Research findings regarding the long-term impact of disasters on GDP are mixed. In some cases, disasters initially dented the GDP but eventually brought benefits such as agricultural production, industrial output and capital formation picked up in greater scale and volume than before. Climatic disasters such as storms and droughts had, according to one study,1 moderate but negative, permanent impact on income growth (amounting to less than 1%) and on real GDP per capita; whereas geological disasters such as earthquakes did not have a statistically significant impact on output.

From 2001 to 2010, the proportion of those affected among the total population was highest in East and North-East Asia: 86 out of 1,000, compared with just 3 out of 1,000 in both North and Central Asia and in the Pacific. The number and severity of disasters caused by natural hazards varies from year to year, while the selection of period is an artefact that affects reporting. For example, in the Pacific sub region from 2001 to 2010, an average of 200,000 people were affected by disasters annually; however, a closer look at the annual data reveals that 500,000 were affected in 2010 while only 9,000 in 2006.

### Table-1

<table>
<thead>
<tr>
<th></th>
<th>Bangladesh - Cyclone Sidr, 2007</th>
<th>Myanmar - Cyclone Nargis, 2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tidal Wave</td>
<td>5-6 Meters</td>
<td>3-7 Meters</td>
</tr>
<tr>
<td>Wind Speed</td>
<td>240 Km / Hr.</td>
<td>255 Km / Hr.</td>
</tr>
<tr>
<td>Population Evacuated</td>
<td>3 Million</td>
<td>None</td>
</tr>
<tr>
<td>Death</td>
<td>3406</td>
<td>84537</td>
</tr>
<tr>
<td>Missing</td>
<td>1000</td>
<td>53836</td>
</tr>
<tr>
<td>Total Loss Damage</td>
<td>US $1670 Million</td>
<td>US $4130 Million</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

### CONCLUSION

Ensure that the areas in the district vulnerable to disasters are identified and measures for the prevention of disasters and the mitigation of its effects are undertaken by the departments of the Government at the district level as well as by the local authorities. Ensure that the guidelines for prevention of disaster, mitigation of its effect, preparedness and response measures as laid down by the National Authority and State Authority are followed by all the line departments at the district level, local authorities and other concerned authorities. There is a need to highlight the role that comprehensive environmental management can play in reducing the risk of disasters, and to mitigate the consequences if they should nevertheless occur - both on human lives and on the broader ecology.

We also need to explore the link between environmental systems and disasters, and the synergies between man-made and natural disasters. Apart from loss of human lives, natural disasters inflict severe damage to ecology and economy of a region. With installation of new technologies and by adopting space technology as INSAT and IRS series of satellites, India has developed an operational mechanism for disaster warning especially cyclone and drought, and their monitoring and mitigation. However, prediction of certain events like earthquake, volcanic eruption and flood is still at experimental level.
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THE EFFECTS OF DEMONETIZATION TO ATTAIN ECONOMIC SUSTAINABILITY AND ITS IMPACT ON OTHER INVESTMENT OPTIONS

S. Gomathiepriya

ABSTRACT

Country’s economic sustainability becomes more and more important in the contemporary economic world. This paper analyze the relationship between economic sustainability through demonetization as a process to curb shadow economy which eventually impacts the circulation of money and investment in major areas such as gold, real estate and capital market. Demonetization is being looked upon as a good move to institutionalize the real estate sector. In addition, gradually, more and more people are now trying to use digital channels and electronic channel.

The alternate white economy will progress towards a sustainable economy and will have a direct impact on the tax regulation or reduction of tax paid by common person. Due to elimination of a parallel economy, the managers of economy will be only Banks and they will be impacted if there is any major turmoil in global economic scenario. It should be ensured that the Banking sector remains well regulated, and that our RBI to infuse more regulations to banks for the smooth function and act in monopoly to lobby the government for financial sector changes.

KEYWORDS

Demonetization, Economic Sustainability, Shadow Economy, Bank Regulation, Financial Crisis etc.

INTRODUCTION

Demonetization is the act of stripping a currency unit of its status as legal tender. Demonetization is necessary whenever there is a change of national currency. The old unit of currency must be retired and replaced with a new currency unit. Demonetization is one way to curb black money and move the country towards sustainable economic growth.

In India, black money refers to funds earned on the black market, on which income and other taxes have not been paid. The total amount of black money deposited in foreign banks by Indians is unknown. Some reports claim a total of US$1.06 trillion is held illegally in Switzerland. Other reports, including those reported by the Swiss Bankers Association and the Government of Switzerland, claim these reports are false and fabricated, and the total amount held in all Swiss bank accounts by citizens of India is about US$2 billion.

In a televised address on 8 November 2016 by Indian Prime Minister Narendra Modi, it was announced that banknotes of ₹500 and ₹1000 would cease to be legal tender from midnight. Automatic teller machines at some places were closed on 9th and 10th November. Government organizations have brought out new notes. The Government of India had accepted the proposal of RBI in bringing out ₹2000 banknotes and a new version of the ₹500. The old notes are being removed from circulation.

OBJECTIVES

- To analyze the sources of black money.
- To study if demonetization will help to bring out black money.
- To find out the effect of demonetization on other investment options.

ANAYSE SOURCES OF BLACK MONEY

Black money is the money, which is in circulation in the economy on which taxes are not paid. Black money includes money from illegal sources like drugs, arms trade, terrorism, extortion, kidnapping ransom etc., as these incomes cannot be taxed right away without money laundering. Black money also includes income from legal sources like sale of gold or property in cash without any
trail to evade tax. Therefore, any income on which taxes are evaded and not paid as per the laws of the land can be technically called black money.

Wondering how Demonetization will help India, to analyze considering some deep economic impacts of the scheme. Primarily, let us understand the Indian Tax Statistics,

- Among 120 crore Indians, only about 4% (5.1 crore) filed Income Tax returns in 2015-16.
- Only Maharashtra (39.9%) and Delhi (13.1%) pay 53% of India's total income tax.
- There are over 10 lakh income tax assesses in India declaring income in excess of Rs 10 lakh a year.

Imagine a scenario where there is a huge family with 125 people, some are children; some are well earning women and men. Now, out of these members, let’s say 60% of them are into agriculture, i.e. 76 people, and because these 76 people are responsible for growing of food for the family, they don’t have to contribute to the grocery bill as they are actually the recipients of grocery bill and they are already contributing their fair share by growing food for family. Let us say we have 24 children in this family who need not take the burden of paying the grocery bill, hence all we are left with are 25 members to contribute to the grocery bill of the entire family. Now, in this family, there are few members let us say 15 members who are into a special industry called real estate, bribe/corruption and jewellery. Somehow, due to their shrewdness, these members are very smart in hiding their income so that they do not have to contribute and thereby give some part of income as a share of grocery bill to the family. Hence, out of 25 members, we are now left with only 10 people to pay for the grocery bill for the entire family of 125; this 10 people represent the salaried class, the service sector and the manufacturing sector. Now, these 15 members who are into a special industry, earn an income which is as same as about the 76 people in the agricultural sector combined, this creates income disparity where 15 people in real estate and jewellery are earning about same as 76 in agriculture, however even when they are earning much higher in the individual capacity, they are not giving proper share in the grocery bill because they are hiding their earnings and they are experts in doing so. Now, this scenario continues for 60 years and those few members of the family who are in those special industries flourish like anything in this given time period, they make big homes, farmhouses, bungalows, jets, yachts, BMW’s, Audi’s etc. Now until 60 years, those 10 innocent people kept on paying the entire grocery bill for all members and hence, took a huge burden of grocery bill, which made them shell out a huge portion of their income into paying of the grocery bill. Thus due to the shrewdness of 15 people of special industry, the remaining 110 people remained where they were or grew very little in terms of economic wealth. Those shrewd people were able to hide their income in the form of black money and spend the same. This created a parallel economy called shadow economy or black money economy, where in the funds hidden by those shrewd people were circulated in the economy. Now, because these funds were nearly equal to the entire agriculture income, hence this grew to be a huge fund circulating in the economy.

Suddenly, the PM got an idea and executed that all the big currency owned by any member of the family would be useless from tomorrow unless they bring the same to PM’s banks and take new notes in replacement. This idea resulted in a compulsory presentation of a substantial portion, which was hidden by those people, as not doing so would make the accumulated wealth useless for them. Therefore, all members one by one came and replaced their old notes, which were few, finally, these 15 members who hid their money, came and asked for replacement of their notes. Now PM has got a proof, that though these members did not contribute in the grocery bill for 60 years, they earned substantially and if they would have contributed, this would have contributed honestly, our country would have reached great heights by 2016, but that is spoiled milk, now what the PM does is he asks those 15 shrewd people to pay their fair share of contribution of past 60 years along with interest (i.e. penalty 200%) in our case. This leads to a reduction in the burden of existing honest contributors as now because there are 25 people contributing to the grocery bill; the burden of total bill on individual is divided to 25 members instead of the original 10 members.

**POSITIVE IMPACT OF DENOMINATED MONEY FROM CIRCULATION**

- It will bring out black money in the economy which can then be channelled into formal economy.
- Flush liquidity into banking sector which is suffering under burden of NPAs, lending will rise.
- Those who disclose unaccounted wealth can be scrutinised by the IT department.
- It will push citizens to use their accounts under the Jan Dhan Yojana, inclusiveness in practise.
- A punishment for those who did not disclose wealth under the schemes introduced by the government.
- Flush out fake currency from the economy.
- Squeeze out cash being used for political campaigning.
- Cripple criminal nexus of drug dealers, terrorists and trafficker who will be devoid of means of trade.
- It will disincentives future money laundering and tax evasion as information gathered during the exercise will increase transparency and equip the government to better monitor use of cash.
- An end to Hawala, even if this is only for the short run.
- Prices in real estate sector will come down. Even of metals like gold.
- Monetary policy will be more effective now.
LONG TERM IMPACTS OF DEMONETIZATION

- Reduction in the individual income tax rates borne by taxpayers.
- Reduction in the income disparity among individuals.
- Reduction in indirect tax (GST) on necessity goods and services.
- Increase in indirect tax (GST) on luxury goods and services.
- Exorbitant increase in government revenue due to forcing the real estate & jewellery sector to get into the tax net, leading to infusion of funds for infrastructure development, defense sector, irrigation and agriculture development. Once a sector is in the tax net or Radar of the tax infrastructure, it is very hard to get out of the same unless you break laws or close your business, or leave the country. The increase in govt. revenue will not be a onetime thing but for all the years to come. Although there are more benefits that issues, we should as well keep a watch on the issues that we may face due to a pure white economy.

LONG TERM PRECAUTIONS OR ISSUES DUE TO A WHITE ECONOMY

It was the Shadow Economy, which protected India at the time of the Global Financial Crisis in 2008. e.g., in the existence of a shadow economy, a flat worth 1 crore is sold at 40 lakhs in white (through cheque) and 60 lakh in black money. Now, the Indian banks can only provide loan up to 80% of white loan amount i.e. Rs. 32 lakh against a property whose market value is Rs. 1 crore. This provides a huge safety margin because of the property value under mortgage/secured to the banks as even if the borrower would default in repayment of the loan, the bank can sell the house and have a strong margin of 68 lakhs (100–32) over and above the principal amount lent of Rs. 32 lakh, i.e. margin of safety for the bank is more than double the amount lent. Under a pure white economy, the property value will fall to say 60 lakh instead of 1 crore and the entire 60 lakh is to be paid through cheque (white), hence bank could provide a loan of Rs. 48 lakh. Now, the margin of safety in the hands of the bank would only be of Rs. 12 lakh i.e. 25% of the amount lent. So in a pure white economy, if the property prices fall for more than 20% (property value 60 lakh*20%=12 lakh, 60–12=48 lakh = amount lent), and if the borrower defaults, the bank will have to book losses as they will not be able to recover the amount lent by the sale of the property.

When you eliminate an entire parallel economy (Black), then you give many monopolistic powers to the managers (Banks) of the economy (white economy) that you permit/allow to live/survive. Elimination of a parallel black economy will give tremendous powers in the hands of the banks of the country to give loans to various sectors, to lobby the government for financial sector changes, banking de-regulations etc. This was also one of the reasons of the 2008 global financial crisis. After deregulation in the banking sector in the USA, the banks became so powerful and misused their powers by making huge short term gains not realizing that it lead to an extremely risky long term scenario, involving and lending to sub-prime borrowers huge sums just to make short terms bond sales fee earnings. Our PM will have to ensure that the Banking sector remains well regulates, and that our RBI does not become a toothless tiger, on the contrary to de-regulation, our PM will have to infuse more regulations so as to ensure that we do not make the same mistakes that the USA made then. E.g. we cannot in any case, deregulate the derivatives industry, and any activity performed by any bank in India can be stopped/questioned by the RBI or the Finance Ministry.

Impact of Demonetization on Real Estates

The unorganized sector and secondary (resale) property market can be affected by the government’s decision to demonetize Rs. 500 and Rs. 1000 notes. The housing prices are expected to go down, fuelling demand for the sluggish sector. There is not going to much of an impact on the primary residential market because the buyers in this category usually make purchases in the form of loans mortgage or making cheques. The impact may be felt in the secondary market, which is known to deal in cash. While the demonetization will have little impact in large cities, transactions in Tier 2 and Tier 3 cities where cash components are higher, may witness a higher impact by sale of the property.

It said the size of the India’s black economy expanded rapidly over the 1970s and 1980s and remains bigger than the overall economic size of countries like Thailand and Argentina. The size of India’s black economy is about USD 460 billion (over Rs 30 lakh crore). In the year to June 2012, about $6 billion, or 30 percent of total transactions in the property sector, were executed using black money, according to Liases Foras, a consultancy. Real estate accounts for more than a 10th of India’s $1.85 trillion economy. So if we calculate that 30% comes from black money than it’s approximately equals to USD 400 Billion. So it’s proved that major chunk of BLACK Money goes to Real Estate sector in different form. Question is why 30% only because in India bank sponsor your 70% of fund. India holds somewhere 400 Billion worth of Black money in form of Real estate plus 10% YOY appreciation on prices, it is now worth of somewhere around USD 420 Billion (over Rs 25 lakh crore) today.

Indian Government has announced the Demonetization of currency of 500 and 1000. It means millions and millions of rupees will become useless and dumped in trash. So now there will be very few buyers left in primary and secondary market of real estate who have to do payment through bank means. As per supply and demand statistic, if buyers will be less in the market then the
prices will forced to come down and it will be a big opportunity for working middle class to buy their dream home. This impact leaves at least 20-30% correction where Power of Attorney works and 15-20% correction where Registry works in India Homes.

Demonetization is being looked upon as a good move to institutionalize the real estate sector. One can expect more opportunities for institutional capital, debt investments, and private equity and FDI players because of the increased transparency in the dealings. Banks can also start funding land and plot-based transactions, reducing land prices.

Impact in the Cash Economy

The currency denominations in the form of Rs. 500 and Rs. 1000 comprise 84 percent of the money in circulation. Cash transactions have an essential role to play in informal markets (like groceries and markets), real estate and construction-based business and gold. The role of cash in markets like real estate and gold is essentially questionable, but it is vital for informal and unorganized sectors. Small-time farmers need to off-load their produce in the local market for cash; declaring Rs. 500 and Rs. 1000 notes as invalid suddenly, can affect their livelihood albeit for a short time. It is expected that with fresh notes in circulation in the coming few months, the issue is going to ease out.

Effect of Demonetization of Rupee on the GDP of India

The sudden decline in the money supply and immediate increase in bank deposits is going to negatively affect consumption demand for the short term. The adverse impact on construction, real estate and informal sectors can lead to reduction of GDP. Curbing of money supply can cause deflation in the economy, leading to reduction of general level of prices in the economy. Tax collection to GDP ratio is 17 percent, it will be moved up by to 18 or 19 percent. It will not have a very drastic impact, normally, people have invested money, as they may have done in property, gold, inventory or receivables there may be a limited impact in circulation but they can be manageable in the end.

Effect of Demonetization in Debt (Bond) Markets

Increase in deposits can lead to demand for government bonds and other high rated bonds in a situation, leading to lowered bond yields. With an influx of deposits, the rates will reduce and the yields will be lowered.

Impact of Demonetization on Bank Deposit Rate

With large amount of cash being diverted into banks by way of deposits, it will reduce the bank’s dependence on high cost borrowings.

Effect of Demonetization on Vehicle Purchase

Sales of vehicles in the second-hand market can reduce, which can also have a cascading effect on OEM sales, because buyers will find it difficult to dispose their old vehicles easily.

Effects of Demonetization of Rupee on Gold and Jewellery Items

You can expect the prices of jewellery to fall in the next two or three quarters, the unorganized sector can be affected worse due to unaccounted inventor and high amount of cash sales. There is no going to be much of a negative impact to jewellery exporters as they are a part of an organized market and transactions are done, based on an invoice. While 70 percent of the jewellery and gems market is unorganized, 20 percent of the market contributes to 80 percent of the business. It is a very good decision in the long-term especially for the organized sector.

Reduction in Demand for Consumer Durables

For the short term, the purchases of consumer durables in cash can be impacted due to reduction in discretionary spending. High-end retail products to experience drop in prices. Luxury products and high-end fashion retail that have a discretionary demand may experience reduction in demand.

Impact of Demonetization on E-Wallets

It is believed that the demonetization of Rs. 500 and Rs. 1000 is going to give a major impetus to the recently launched UPI (United Payment Interface) and e-wallets like PayTM and Mobikwik. They have already stepped up the bandwagon with taglines
like Cash is so Yesterday and ATM Nahi, PayTM karo’. Vendors like Ola have also stepped up their notifications to their passengers to go ‘cashless and recharge with Ola Money.

Impact of Demonetization on Equity and Mutual Funds

With more money coming into the formalized system, the effect is expected to be quite positive. Since money is in white, equities will grow. People will be paying more taxes and would be willing to invest in ELSS schemes to save Rs. 1.5 lakh on taxes. More investments can lead to more wealth creation and better economic growth. Since more money paves into a formalized system, it will augment into healthy practices like investing in equity mutual funds for wealth creation, on a long-term.

CONCLUSION

The impact of the demonetization measures would certainly be slower economic growth. As most real-estate transactions entail an element of cash, this market is likely to come to a standstill with property prices likely to fall. This would imply a negative-wealth effect leading to a decline in consumption, and possibly business investment. Demonetization of high denomination currency has curbed shadowed economy and infused more money into banks. The authorities need to come up with a stimulatory fiscal spending programme, especially aimed at alleviating the pain in the informal sector, coupled with a weaker exchange rate to compensate for the sharp contraction in money supply. While meaningful structural reforms remain elusive to increase economic growth, the contractionary monetary policy unleashed without a compensating expansionary fiscal- or exchange-rate policy would have a negative impact.

The Reserve Bank of India (RBI), which needs to allow a stimulatory weaker exchange rate, has been doing just the opposite since the announcement of demonetization—it has been letting the rupee appreciate in real effective exchange-rate terms. More transparent and open electronic-bidding systems as well as allocation decisions and their basis need to be made public to help reduce this menace. Similarly, with lack of clarity and multiple tax rates, corrupt revenue officials will remain open to bribes. Demonetization as a cleaning exercise may produce several good things in the economy. At the same time, it creates unavoidable income and welfare losses to the poor sections of the society who gets income based on their daily work and those who does not have the digital transaction culture. Overall, economic activities will be dampened in the short term. However, the immeasurable benefits of having more transparency and reduced volume of black money activities can be pointed as long-term benefits.

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(Editor-In-Chief)
SHAPED FINANCIAL ECONOMY: OFFERS A LESSON FOR TODAY’S BLACK MONEY HOLDERS BUT AFFECTS THE MIDDLE INCOME PEOPLE: AN INTELLECTUAL IDEA FOR SUSTAINING FINANCE

Jeeva Hannah J.⁹ Jeeva Rupa J.¹⁰

ABSTRACT

This paper aims at identifying the effectiveness of the announcement made by our honorable Prime Minister Shri Narendra Modi in relation to demonetization of Indian currency. This paper also tries to study the service delivery system offered by the central government and to find out whether this announcement will eradicate black money and corruption. The research carried out under the topic, was based on secondary data. The study was a blend of conceptual research. After analyzing the data, it was found that this framework can provide a clearer picture about the shaped finance economy to the society and has been successful in maintaining excellent portfolio quality to the people of our country that will extremely rapid expansion in a few years. And from the study one can conclude that our country will be more benefited by eradicating corruption, black money and having reduced poverty and increased revenue and it also increase the status of them. The study has concluded with few suggestions like the investing in gold ETFs, sovereign gold bonds, investing in systematic investment plans (SIPs), tax-free bonds and in real estates. The limitations of withdrawal can be extended for middle income people so that they can maintain their standard of living. The complaints have to be rectified by the central government and it will improve the efficiency of the economy.

KEYWORDS

Demonetization of Currency, Eradicate Black Money, Gold ETF, SIP etc.

INTRODUCTION

Finance at its core, does just two simple things. It can act as an economic time machine, helping savers transport today’s surplus income into the future or giving borrowers’ access to future earnings now. It can also act as a safety net, insuring against floods, fires or illness. By providing these two kinds of service, a well-tuned financial system smoothens away life’s sharpest difficulties, making an uncertain world more predictable. As the impact of the present financial crisis, targeting the black money holders, it is worth asking if the right things are being done to support what is good about finance, and to remove what is poisonous.

The Prime Minister of India Sri Narendra Modi’s announcement on 8th November 2016 of demonetization of Rs. 500 & Rs. 1000 highlights a big trend in Indian financial evolution. Demonetization of currency means discounting of the said currency from circulation. It was an unscheduled live televised address to the nation at 20:15 IST. He said the government has been fighting the menace of black money and corruption ever since it assumed power two years ago.

LITERATURE REVIEW

Former Chief Election Commissioner S.Y. Quraishi said the move will definitely have a positive impact on the election system but more steps were needed to tackle the problem of black money in polls. "It will definitely have some impact on free flow of money in elections but I don't think it will curb the whole menace.

Jagdeep Chokkar, founder member of Association for Democratic Reforms (ADR), told IANS that the decision would bring about reduction in black money in the country. "If political parties have organized their money then it will have no impact on them but those who would not have organized, they may find themselves in trouble. Now they will not be able to organize their unaccounted money. This will obviously impact the elections but will take much more time to completely curb the menace," he added.

Sangeet Kumar Ragi, who teaches at Delhi University's Political Science department, said those who use money power in elections would be severely impacted. "Candidates who rely on wooing voters by using money will find the going difficult," Ragi said, adding that all political parties will be impacted in some way and those opposing it are doing so for petty politics.

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While Information and Broadcasting Minister M. Venkaiah Naidu said that the measure will lead to election expenses of candidates coming down and “sincere” politicians would be happy with it. Uttar Pradesh Chief Minister Akhilesh Yadav linked it to the upcoming assembly polls and said it was not a permanent solution.

OBJECTIVES

- To discuss the conceptual aspects of demonetization.
- To point out the advantages and disadvantages of demonetization.
- To highlight the measure that can be taken to sustain finance in this present financial disaster.

METHODOLOGY OF STUDY

Secondary research was conducted to review the present status of financial disaster. The data was collected through secondary sources like newspapers, report and websites.

BLACK MONEY

By the term parallel economy, we mean working of an unofficial or unsanctioned economy parallel to the parent economy of the country. Such unsanctioned or black economy run parallel, to that of the parent economy but in contradiction with the declared social objective. This type of economy is also known as ‘black economy’, ‘illegal economy’, ‘unaccounted economy’, ‘unreported economy’, ‘subterranean economy’, ‘unsanctioned economy’ etc. Black and white are also variously substituted by number two and number one, unaccounted and accounted, unreported and reported, unrecorded and recorded and so on.”

Multi-dimensional problems are experienced under parallel economy. This type of economy has political, commercial, legal, industrial, social and ethical aspects. There are wide confrontations between the objectives of the legitimate and illegitimate sectors under parallel economy. The basic objectives of economic planning in India, is establishment of socialistic pattern of society that are very much disturbed with the existence of parallel economy. This parallel or black economy started to operate during the Second World War when the country had experienced serious shortages in essential items and the Government resorted to system of controls and rationing of these items.

With the growth of the economy in the post-independence period the extent of the parallel or black economy has been magnified and now it is playing a dominant role in determining the trend of economic activities as well as to mould the national policies, to change the composition and structure of the output and also to promote a powerful class having huge black money. This increasing number of black money operators has been able to establish a parallel economy to suit their own interest, which is very much in contradiction with the national interest of the country.

Black Money tracking this move will help the government to track unaccounted black money or cash on which income tax has not been paid. Individuals who are sitting on a pile of cash usually do not deposit the amount in the bank or invest anywhere as they would be required to show income or submit PAN for any valid financial transactions. They would hide it somewhere and use it as and when necessary. Banning high-value currency will affect people who will have no option, but, to declare income and pay tax on the same or destroy the cash somehow.

DEMONETISATION

Demonetisation is an economic term which is used to mean the ‘scraping’ of old currency notes and stripping off their status of legal tender. There are two basic elements to this definition. One is ‘scraping of old currency notes’ and ‘status of legal tender’. Before we explain the same, what you need to understand that a currency note or paper currency is essentially a promissory note or a legal document that simply suggests that the payee has 'promised' to pay that amount to the payer. The same is printed on every currency note as well. This is validated by the heads of the Central Banks of the nation and in case of India, by the Governor of Reserve Bank of India. This “status” of legal tender can be scrapped for a currency note, which means that the instrument seizes to be a “legal” mode of monetary transactions and in effect loses the value associated with that instrument. In other words, until and unless the old currency is legally exchanged at the designated centres, they are equivalent to nothing more than scraps of paper.

DEMONETIZATION OF INDIAN RS 500 AND RS 1000 NOTES

In a surprise move, the Indian Prime Minister, Shri Narendra Modi in his address to the nation on November 8, 2016 declared the demonetization of the Indian Rs. 500 and Rs. 1000 currency notes with effect midnight of November 8. This move sent the entire nation in a dizzy. The Honourable Prime Minister stated the decision as a step to counter terrorism which was being funded by counterfeit money as well as a decisive strike against the black money being hoarded by the citizens of the country. The decision
scraped the legal tender status of the high value currency notes of INR 500 and 1000 with immediate effect and introduced new Rs. 500 and Rs. 2000 notes. After the address, the Economic Affairs Secretary, Mr. Shaktikanta Das further explained the method and means by which the old currency notes would be exchanged for new notes. It was further assessed that people should not worry about their money as demonetisation does not mean that their money has no value. All it means is that it must be exchanged for the new notes.

As per the notification, barring some public utilities like petrol pumps, hospitals, railways and airports as well as cremation and burial grounds, the use of old 500 and 1000 rupee note was discontinued. All the banks were shut for one day to effectively carry out the exchange of old currency and the ATMs across the nation were closed for two days. The government also imposed a limit of withdrawals from ATMs to Rs. 2000 per card and from banks to Rs. 10,000 per account per day up to Rs. 20,000 withdrawals per week. The limits were later revised to Rs. 2500 ATM withdrawals per day and Rs. 24,000 bank withdrawals per account per week. The use of old currency notes were also extended for use at Delhi Metro recharge counters as well as payment of property taxes and electricity bills. The government intends to exchange the old currency notes by December 30, 2016. After the date, the exchange of the old currency notes would only be possible at designated counters of RBI after submitting a declaration form to the same effect.

THE AFTERMATH OF DEMONETISATION OF INDIAN CURRENCY

The move of the Modi Government received both praises and severe criticisms from every section of the society. The immediate effect of the announcement saw countrymen lining up at the ATMs to withdraw 100-rupee notes to tide over the impending cash crunch. As per figures provided by the RBI, the banned currency constituted 86 percent of the currency in circulation in the country at the time. The entire magnitude of replacing the money in itself is a mammoth task and everyone felt the pinch in the immediate aftermath. The banks and ATMs opened to long queues of citizens lined up to exchange, withdraw and deposit the old currency notes. Reports were received from various part of the country about chaos regarding decline in essential services. The government has released further measures and actions and continues to do so in order to make this as convenient to the common man as possible. The Income Tax Department and the Ministry of Finance has further clarified that since it had given affair chance to all to declare their income by September 30 under the voluntary disclosure schemes, no further concessions would be given to people depositing large amounts in their accounts and all such large transactions would attract Tax scrutiny and penalty as per the law. As the drive to exchange the old currency notes continue, measures are being put in place to make the transition as smooth as possible. However, it can be judged that the sheer quantum of the money that needs to be exchanged (given the population and the amount of notes already in circulation) makes this a logistical juggernaut and would continue to cause discomfort. The Government and RBI are constantly working towards making this as comfortable as possible. Some of the measures include increasing the limits of withdrawals and scrapping Toll on National Highways until November 18, midnight.

ADVANTAGES AND DISADVANTAGES OF DEMONETIZATION

Reduction in Illegal Activity: Banning high-value currency will halt illegal activity as the cash provided for such activities has no value now. Black money is usually used to fund the illegal activity, terrorism, and money laundering. Fake currency circulation will come to a halt in a single shot. Corrupt officers, money launderers are under threat as Income tax department is taking all the measures to track such people.

Tax Payment: Most of the businessmen who have been hiding some income are ready to pay advance tax as current year's income. Tax payers who have been hiding some income can come forward to declare income and pay tax on the same. Individuals are required to submit PAN for any deposit above Rs 50,000 in cash, which will help tax department to track individuals with high denominations. Also, deposit up to Rs 2.5 lakh will not come under Income tax scrutiny.

Jan Dhan Yojana: Now individuals are depositing enough cash in their Jan Dhan accounts which they were reluctant to do so a few days back. The amount deposited can be used for the betterment of the country.

DISADVANTAGES OF CURRENCY DEMONETIZATION

It has caused inconvenience for initial few days for those who have to start running to the banks to exchange notes, deposit amount or withdraw the same. The situation can turn chaotic if there is a delay in the circulation of new currency.

Cost of Currency Destruction: After the news, we have seen that many individuals have burnt their cash and discarded the same, which is a loss to the economy. The government has to bear the cost of printing of new currency and its circulation. It makes sense when benefits of demonetization are higher.
SUGGESTIONS FOR MANAGING FINANCIAL CRISIS

Gold: Physical gold cannot be considered as a good investment after demonetization. The demand for gold will decrease due to cash availability. Gold will also take cues from international gold market and the dollar. Gold prices may come down if there is any reports of hike in interest rates by the Federal Reserve. Individuals who are still keen on buying gold can consider other ways to invest such as Gold ETFs, Sovereign gold Bonds.

Mutual Funds: Investment in mutual funds can be one of the best options to invest after demonetization. It is good to make sure to choose equities with strong fundamentals, which can give you better return in long run. An investor can also choose the option to invest through Systematic Investment Plan (SIPs), where they can invest in small amounts starting from Rs. 500.

Real Estate: Investing in real estate was a popular way to stash black money through cash transactions. After the recent demonetization move, it is difficult for black money hoarders to stash their money, which is expected to hit real estate sectors. Price in real estate is expected to drop by 20-30 per cent in next few quarters. This move will benefit individuals who are interested in buying a home, as housing will be affordable along with lower interest rates on the home loan.

Tax Free Bonds: Investment in tax-free bonds can provide return up to 6 percent. Interests earned on tax-free bonds are not taxed while interests earned on FDs are taxed.

CONCLUSION

This paper has presented a conceptual framework for analyzing the effectiveness of demonetization of Indian currency. This framework can provide a clearer picture about the shaped financial economy. From the study, one can conclude that there are only advantages of demonetization in the long term. The government is taking all the necessary steps and actions to meet the currency demand and ensure the smooth flow of new currency.

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DIGITIZATION IN FINANCIAL SECTOR: DISRUPTIONS, OPPORTUNITIES AND CHALLENGES

Dr. Prabhakar Pandey11 Dr. Pushkar Dubey12 Dr. Abhishek Kumar Pathak13

ABSTRACT
Digitization is changing the customer behaviour. The banks and non-banking financial corporate are making changes in the process and creating an integrated ecosystem. They are consumerising the entire technology and the process. It is giving the power in consumers hand and they are driving the change in process. The government of India has taken great initiative by announcement of various schemes such as Jan-dhan scheme, Mudra banks, payment banks etc. This scheme will bring more of the unbanked population in the banking circuit. It is both challenge and opportunity for financial service provider. It will be a challenge because they have to win the trust of more people and provide them efficient customer service. At the same time they can tap in to new markets, bring out the solutions that make banking transactions more efficient and in turn translating in to revenue. Thus, it will be win-win for both customers and financial service provider. This study is aimed to pin point the pace of opportunities and challenges of digitization on financial services.

KEYWORDS
Digitization, Digital Banking, Digital Disruption, Digital Wave etc.

INTRODUCTION
There are two areas payment and lending where most of the work is going on in the financial technology. Now the point of discussion is whether financial services companies are prepared for new technology. If the financial sectors are not prepared, very likely somebody will come and take some share of business away. On the other hand, if they are prepared enough, this will be more an evolution for them. There is a digital wave in the financial services. The prime minister's Jan Dhan scheme has led to 27% increase in accounts in a single year and up to 10th August 2016, under this scheme 23.62 crore internet access is growing at 34% per annum and has covered 20% of population. The number of people doing digital banking is growing at the rate of 20-25% per annum. The financial industry in India is attracting a lot of interest as 35% of digital banking customer also use mobile wallets from non-banks. Mobile wallet transaction are growing at 180% and have surpassed transaction through mobile banking. Digital banking customers could reach over 230 million by 2020 and if penetration can be advanced by 2 years, they could reach 300 million. With the launching of payment banks, branch based transactions have gone down by 7% and the number of transaction per ATM is slowing down. 86% of banking customers using internet but not doing online banking are using self-service kiosks.

OBJECTIVES OF STUDY
The objective of the study is to evaluate the pace of disruption, opportunities and challenges that digitization has put up before financial sector.

DISRUPTION
There are two areas payment and lending where most of the work is going on in the financial technology. If the financial companies are not prepared, very likely somebody will come and take some share of business away. On the other hand, if they are prepared enough this disruption will be more of an evolution for them. At present financial companies are not prepared enough to interface with many variant of payment using apps, using NFC tag, or using sound wave technologies. If a bank or financial company is not prepared enough to interface with those kinds of solutions then the customers are going to move to people who will offer those solutions. It is going to the age of convenience. Financial companies are using Apps to facilitate the payments but as a company, they are not fully prepared to take part in that ecosystem. Digitization in payments, the whole ecosystem and decision process that need a deeper engagement are moving slower. When internet came to power it built our future. However, today the internet is disrupting every possible physical industries.

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13 Assistant Professor, Department of Management, Dr. C. V. Raman University, Chhattisgarh, India, phatak2014@rediffmail.com
OCCUPPORTUNITIES

It is a great initiative by the government of India, which announced various schemes such as Jan Dhan Yojana, payment banks, small banks, mudra banks that will connect the unbanked population into the banking circuit. Financial service companies can tap into new market and plug in solutions that make banking transactions more efficient, in turn, this will translate into revenue. It is win-win for both the customers and financial service companies. Payments are small things for banks, but they have to run a huge platform, being agile to meet the needs of the business is a big part. Nearly 50% of population may have some access to make digital transaction. There is large untapped universe.

Nearly 6 crore bank account holders are using online banking. About 42% of account holders use internet but do not use online banking. According to FY back survey 2016 "Digital and beyond" 70% of SME's still do their transaction by cash or cheques. They are well versed with internet and its techniques, 97% of MSME's have their e-mail and 57% of them have their own websites yet they do not use online banking. It is an opportunity for banks to cover these customers by giving proper counseling to use online platform to get better services.

CHALLENGES

For financial service companies technology is not a challenge, the bigger challenge is managing the ecosystem and how it will be driven to common man, the big challenge would be to win the trust of new account holder and pull them into the banking system. The second challenge before financial institutions is how to convert the technology strategy into business strategy. At present, nearly 50% of the population have some access to make digital transactions and they have to bring a large untapped universe into digital circuit. The third challenge is to undergo the change in the network and transport channel- the CPU speed has to go through a change because there is so much data being churned from the system. The applications are getting virtualized and moving to cloud as well. Therefore, the transport backbone has to be able to handle that. The fourth challenge is in security and regulatory area, making things digital, online, and adding customers and servicing them is not much of challenge, but the great challenge is to provide them the security against hacking and frauds. Detecting attacks are very difficult in normal paradigm. Attacks have become more sophisticated today. Therefore, it is bigger challenge before financial companies to make banking transactions more secure than ever before.

CONCLUSION

The traditional route to security, which involves system that are segregated proprietary and cumbersome to operate. The banks should link to security solutions like video surveillance access control, incidence response and other security technologies into a single intelligent system across the network. It is possible for the banks to manage physical security, which can reduce cost, improve production and rationalize resources across dispersed branch locations. This will improve the effectiveness of indent detection and response using integrated solutions across the network that include those for intrusion prevention, network analysis tools, firewalls web and email security appliances, it is possible for the banks to cater to the various security needs and also offer better banking experience for customers.

The pace of change is really speeding up and it is important to align with the change and keep thinking about what is next. Clearly, technology is an enabler and will become an integral part of the business as we move forward. It would be important for every industry and business to adopt the technologies that help keep pace with the changes around.

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A CRITICAL ANALYSIS OF ASSET QUALITY OF PUBLIC SECTOR BANKS IN INDIA

Dr. Bimal Jaiswal14 Preksha Singh15

ABSTRACT

Indian Banks are the dominant players in the Indian financial system. Among the Indian Banks, public sector banks have played a very significant role in India. Today these public sector banks, which are categorized in nationalized banks, and non-nationalized banks signify different roles in the Indian economy. These public sector banks are one of the most trustworthy in terms of customer's perspectives. Under this paper, the researcher had examined cross-sectional asset quality of the selected public sector banks. To infer the outcomes, the researcher has calculated the financial ratios like ANOVA, Mean, Standard deviation and the coefficient of variation.

KEYWORDS

Gross NPA Ratio, Net NPA Ratio, Loan Loss Provision Ratio, Ratio Analysis, Public Sector Banks etc.

INTRODUCTION

Public sector Banks are crucial segment of the Indian financial system as it performs various role i.e. credit intermediation process, payment and settlement systems, and monetary policy transmission in the economy. The most important aspect of this sector is the trustworthiness, which has been in the minds of all the class of the customers. The main responsibility comes when its stability and viability negatively jerks and affects its performance. As there can be many reasons of the instability in the banking industry but the main reason nowadays known is its bad asset quality. According to the RBI's Financial Stability Report (December 2014), the gross non-performing advances (GNPA) of the scheduled commercial banks as a percentage of the total advances increased to 4.5 per cent in September 2014 from 4.1 per cent in March 2014. Stressed advances increased to 10.7 per cent of the total advances from 10.0 per cent between March and September 2014. Five sub sectors, viz. Infrastructure, Iron and steel, textiles, mining (including coal) and aviation, hold 54 per cent of total stressed advances of PSBs as on June 2014. Public sector banks stood 17.5 per cent of their advances in respect to infrastructure as on September 2014. It was significantly higher than that of private sector banks (9.6 per cent) and foreign banks (12.1 per cent).

REVIEW OF LITERATURE

According to the theme of the research work, the related previous work done is as under:

Mabwe Kumbirai and Robert Webb had conducted study on “A Financial ratio analysis of commercial bank performance in South Africa” (2010). The author investigated the performance of South Africa’s commercial banking sector for the period of 2005-09. The study used financial ratios analysis to assess profitability, liquidity and credit quality performance of five large South African based commercial banks. In analysis, it was found that overall bank performance increased considerably in the first two years. A significant change in trend was noticed at the onset of the global financial crisis in 2007, reaching its peak during 2008-09. This resulted in filling profitability, low liquidity and deteriorating credit utility in the South African banking sector.

Dr. K. Madhusudhana Rao had conducted study on the “An analysis on the performance of private and public sector banking systems” (2014). Under this research paper, the author had examined the financial performance of SBI and HDFC bank, public sector and private sector respectively from the period 2008-09. The research was descriptive and analytical in nature. The data used for the study was secondary in nature. This study was conducted to compare the financial performance of SBI and HDFC Bank based on ratios such as credit deposit, net profit margin etc. The outcome was that HDFC Bank was performing well and financially sound than SBI but in context of deposits and expenditure both SBI & HDFC bank had better managing efficiency.

Amit Kumar Singh had conducted study on the “An analysis of profitability position of private bank in India” (2015). In this research paper the author had objective of this study was overall profitability analysis of different private sector banks in India based on the performance of profitability ratio like interest spread, net profit margin, return on long term funds, return on net worth, return on assets & adjusted cash margin. The author had used tools like ANOVA, Mean, Standard deviation and the

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coefficient of variation. The author found in hypothesis that there is no significant relationship between the variables like Interest spread, Net profit margin, Adjusted cash margin and the private sector banks (Axis, ICICI, KVB & Yes) in India. Likewise the variables like Return on long-term fund, Return on net worth and Return on assets had a significant relationship between private sector banks (Axis, ICICI, KVB & Yes) in India.

Dr. Pratibha Garg and Surabhi Kumari had conducted study on the “An Empirical Analysis of Profitability Position of Selected Private Sector Banks in India” (2015).

In this research paper, the author had represented an empirical study, which examined the profitability from different perspectives of Private Banks in India with a data of 10 years from 2004 to 2014, and five major Private Banks have been considered as sample units. For this analytical study, the Ratio Technique had been used for analysis and to test the hypothesis Single Factor ANOVA (F-test) had been applied. It found that HDFC Bank remained an outperforming player over the last decade in the Banking Sector with leading in the profitability from the different perspectives.

**Period of the Study**

The study covers a period of 12 years from 2002-03 to 2013-14.

**OBJECTIVES OF STUDY**

- To analyze the asset quality of selected public sector banks like SBI, PNB, BOB, BOI and Union Bank of India.
- To highlight the asset quality of banks (i.e.) SBI, PNB, BOB, BOI and Union Bank of India.

**RESEARCH METHODOLOGY**

The researcher seeks to find out data from the financial statements and the annual reports of the public sector banks for the period 2002-03 to 2013-14. The data used in this study is secondary in nature which is obtained from the annual reports of the respective banks of the public sector banks from the Indian bank’s association. The research method used under this study is the Ratio analysis, which computed for individual banks. With the help of SPSS Software, the researcher has applied other statistical tools like Mean, Standard deviation and the Coefficient of variation.

\[
\text{MEAN} = \frac{\text{sum of variable}}{N} \\
\text{Standard deviation} = \sqrt{\frac{\sum X^2}{N} - \left(\frac{\sum X}{N}\right)^2} \\
\text{Coefficient of Variation} = \frac{SD}{MEAN \times 100}
\]

**ANALYSIS AND INTERPRETATION**

**A. Gross NPA Ratio**

Gross NPAs are the sum total of all loan assets that are classified as NPAs as per RBI guidelines as on Balance Sheet date. Gross NPA reflects the quality of the loans made by banks. It consists of all the nonstandard assets like sub-standard, doubtful, and loss assets.

Gross NPA is the amount outstanding in the borrowable account, in books of the bank other than the interest, which has been recorded and not debited, to the borrowable account.

Gross Advances equals to Standard Advances + Gross NPA (RBI, Index to RBI Circulars)

Gross NPAs Ratio = Gross NPA / Gross Advances *100.

**Table-1: Mean Standard Deviation and Coefficient of Variation**

<table>
<thead>
<tr>
<th>Year</th>
<th>SBI</th>
<th>PNB</th>
<th>BOB</th>
<th>BOI</th>
<th>Union bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002-03</td>
<td>9.09</td>
<td>12.37</td>
<td>11.79</td>
<td>8.92</td>
<td>9.35</td>
</tr>
<tr>
<td>2003-04</td>
<td>7.25</td>
<td>9.88</td>
<td>11.17</td>
<td>5.1</td>
<td>7.97</td>
</tr>
<tr>
<td>2004-05</td>
<td>5.47</td>
<td>6.19</td>
<td>7.65</td>
<td>5.68</td>
<td>5.13</td>
</tr>
<tr>
<td>2005-06</td>
<td>3.57</td>
<td>4.2</td>
<td>3.98</td>
<td>3.8</td>
<td>3.93</td>
</tr>
<tr>
<td>2006-07</td>
<td>2.62</td>
<td>3.51</td>
<td>2.5</td>
<td>2.46</td>
<td>3</td>
</tr>
<tr>
<td>2007-08</td>
<td>2.6</td>
<td>2.77</td>
<td>1.85</td>
<td>1.7</td>
<td>2.2</td>
</tr>
<tr>
<td>2008-09</td>
<td>2.49</td>
<td>1.62</td>
<td>1.28</td>
<td>1.72</td>
<td>1.99</td>
</tr>
<tr>
<td>2009-10</td>
<td>2.74</td>
<td>1.72</td>
<td>1.37</td>
<td>2.89</td>
<td>2.23</td>
</tr>
</tbody>
</table>
The above is the analysis of bank wise mean standard deviation and coefficient of variation of the Gross NPA ratio of selected banks. Punjab national bank has the highest mean value & Bank of India has the lowest mean value as compare to other banks. Standard deviation of Gross NPA ratio of Bank of Baroda has 3.90 with highest coefficient of variation of 92.43% and State Bank of India has 2.07 low standard deviation with low coefficient variation of 47.07% as compared to other remaining banks.

Hypothesis

H0: There is no significant relationship between Gross NPA ratios among selected public sector banks in India.

H1: There is significant relationship between Gross NPA ratios among selected public sector banks in India.

Table-2: Projects the Results of Anova (One Way) Test

<table>
<thead>
<tr>
<th>Groups</th>
<th>Count</th>
<th>Sum</th>
<th>Average</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBI</td>
<td>12</td>
<td>52.79</td>
<td>4.3991</td>
<td>4.288936</td>
</tr>
<tr>
<td>PNB</td>
<td>12</td>
<td>56.78</td>
<td>4.7317</td>
<td>11.24276</td>
</tr>
<tr>
<td>BOB</td>
<td>12</td>
<td>49.93</td>
<td>4.1608</td>
<td>14.7907</td>
</tr>
<tr>
<td>BOI</td>
<td>12</td>
<td>43.1</td>
<td>3.5917</td>
<td>4.338415</td>
</tr>
<tr>
<td>Union Bank of India</td>
<td>12</td>
<td>48.45</td>
<td>4.0375</td>
<td>5.59153</td>
</tr>
</tbody>
</table>

ANOVA

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>d.f.</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
<th>F critical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>8.629117</td>
<td>4</td>
<td>2.15729</td>
<td>0.267969</td>
<td>0.897327745</td>
<td>2.539689</td>
</tr>
<tr>
<td>Within Groups</td>
<td>442.7757</td>
<td>55</td>
<td>8.050468</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>451.4049</td>
<td>59</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

In above analysis the calculated value of ANOVA one-way test (0.267969) is less than the table value (2.539689) as shown in the above table, therefore null hypothesis is accepted. Hence, it is concluded that there is no significant relationship between the Gross NPA ratio and among different public sector banks in India.

B. Net NPA Ratio

Net NPAs are those type of NPAs in which the bank has deducted the provision regarding NPAs. Net NPA shows the actual burden of banks. Since in India, bank balance sheets contain a huge amount of NPAs and the process of recovery and write-off of loans is very time consuming, the provisions the banks have to make against the NPAs according to the central bank guidelines, are quite significant. That is why the difference between gross and net NPA is quite high.

Net NPA Ratio = Net NPA /Net Advances *100
Net Advances equal to the Gross advances-deductions

Note: Deductions are as under:

- Provisions held in the case of NPA Accounts as per asset classification (including additional Provisions for NPAs higher than prescribed rates).
- DICGC/ECGC claims received and held adjustments.
- Part payment received and kept pending adjustment.
• Balance in Sundries Account (Interest Capitalization- Restructured Accounts), in respect of NPA Accounts.
• Floating provisions.
• Provisions in lieu of diminution in the fair value of restructured accounts classified as NPAs.
• Provisions in lieu of diminution in the value of restructured accounts classified as Standard assets.

Table-3: Mean Standard Deviation and Coefficient of Variation

<table>
<thead>
<tr>
<th>Year</th>
<th>SBI</th>
<th>PNB</th>
<th>BOB</th>
<th>BOI</th>
<th>Union Bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002-03</td>
<td>9.23</td>
<td>9.64</td>
<td>10.5</td>
<td>11.24</td>
<td>10.77</td>
</tr>
<tr>
<td>2003-04</td>
<td>10.82</td>
<td>11.14</td>
<td>12.29</td>
<td>13.28</td>
<td>13.31</td>
</tr>
<tr>
<td>2004-05</td>
<td>10.6</td>
<td>13.91</td>
<td>8.73</td>
<td>4.73</td>
<td>12.53</td>
</tr>
<tr>
<td>2005-06</td>
<td>10.11</td>
<td>13.3</td>
<td>9.97</td>
<td>8.54</td>
<td>10.4</td>
</tr>
<tr>
<td>2006-07</td>
<td>10.45</td>
<td>11.87</td>
<td>9.98</td>
<td>10.69</td>
<td>10.47</td>
</tr>
<tr>
<td>2007-08</td>
<td>10.94</td>
<td>12.59</td>
<td>10.35</td>
<td>13.88</td>
<td>13.16</td>
</tr>
<tr>
<td>2008-09</td>
<td>11.3</td>
<td>13.92</td>
<td>12.47</td>
<td>15.5</td>
<td>12.91</td>
</tr>
<tr>
<td>2009-10</td>
<td>10.68</td>
<td>15.6</td>
<td>15.67</td>
<td>8.49</td>
<td>13.58</td>
</tr>
<tr>
<td>2010-11</td>
<td>9.19</td>
<td>14.48</td>
<td>17.17</td>
<td>10.2</td>
<td>11.25</td>
</tr>
<tr>
<td>2011-12</td>
<td>9.5</td>
<td>12.02</td>
<td>15.12</td>
<td>8.41</td>
<td>7.6</td>
</tr>
<tr>
<td>2012-13</td>
<td>9.69</td>
<td>10.29</td>
<td>11.54</td>
<td>7.7</td>
<td>20.91</td>
</tr>
<tr>
<td>2013-14</td>
<td>6.6</td>
<td>6.99</td>
<td>10.46</td>
<td>6.46</td>
<td>14.36</td>
</tr>
<tr>
<td>Mean</td>
<td>1.779</td>
<td>1.250</td>
<td>1.203</td>
<td>1.985</td>
<td>1.757</td>
</tr>
<tr>
<td>S.D</td>
<td>.86433</td>
<td>1.17586</td>
<td>1.10442</td>
<td>1.54271</td>
<td>1.30495</td>
</tr>
<tr>
<td>C.V</td>
<td>48.578</td>
<td>94.064</td>
<td>91.780</td>
<td>77.178</td>
<td>74.2475</td>
</tr>
</tbody>
</table>

Sources: Based on Calculations

The above is the analysis of bank wise mean standard deviation and coefficient of variation of Net NPA ratio of selected banks. Bank of India has the highest mean value & Bank of Baroda has lowest mean value as compared to other banks. Standard deviation of Net NPA ratio of Punjab national bank has 1.76 with highest coefficient of variation of 94% and State bank of India has 0.86 low standard deviation with low coefficient variation of 49%.

Hypothesis

H0: There is no significant relationship between Net NPA ratios among selected public sector banks in India.
H1: There is significant relationship between Net NPA ratios among selected public sector banks in India.

Table-4: Projects the Results of ANOVA (one way) Test

ANOVA: Single Factor

<table>
<thead>
<tr>
<th>SUMMARY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups</td>
</tr>
<tr>
<td>SBI</td>
</tr>
<tr>
<td>PNB</td>
</tr>
<tr>
<td>BOB</td>
</tr>
<tr>
<td>BOI</td>
</tr>
<tr>
<td>Union Bank of India</td>
</tr>
</tbody>
</table>

ANOVA

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>d.f.</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
<th>F critical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>5.818217</td>
<td>4</td>
<td>1.454554</td>
<td>0.978536</td>
<td>0.426844</td>
<td>2.539689</td>
</tr>
<tr>
<td>Within Groups</td>
<td>81.75528</td>
<td>55</td>
<td>1.48646</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>87.5735</td>
<td>59</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

According to table-4, it is found that calculated of ANOVA one way test (0.978536) is less than the table value (2.539689) so null hypothesis is accepted. Therefore, it is concluded that there is no significant relationship between Net NPA ratios among different public sector banks in India.
C. Loan Loss Provision Ratio

A loan loss provision is an expense that is reserved for defaulted loans or credits. It is an amount set aside in the event that the loan defaults.

\[
\text{Loan loss provision Ratio} = \frac{\text{Loan loss provision}}{\text{gross loans or advances}} \times 100
\]

Table-5: Mean, Standard Deviation and Coefficient of Variation

<table>
<thead>
<tr>
<th>Year</th>
<th>SBI</th>
<th>PNB</th>
<th>BOB</th>
<th>BOI</th>
<th>Union bank</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002-03</td>
<td>4.79</td>
<td>7.04</td>
<td>5.67</td>
<td>2.97</td>
<td>4.31</td>
</tr>
<tr>
<td>2003-04</td>
<td>3.76</td>
<td>7.73</td>
<td>5.09</td>
<td>3.11</td>
<td>4.98</td>
</tr>
<tr>
<td>2004-05</td>
<td>2.91</td>
<td>5.21</td>
<td>3.99</td>
<td>2.54</td>
<td>3.42</td>
</tr>
<tr>
<td>2005-06</td>
<td>1.7</td>
<td>3.39</td>
<td>2.21</td>
<td>2.04</td>
<td>2.34</td>
</tr>
<tr>
<td>2006-07</td>
<td>1.3</td>
<td>2.36</td>
<td>1.18</td>
<td>1.59</td>
<td>2.02</td>
</tr>
<tr>
<td>2007-08</td>
<td>1.14</td>
<td>1.85</td>
<td>0.83</td>
<td>1.28</td>
<td>2.03</td>
</tr>
<tr>
<td>2008-09</td>
<td>1.01</td>
<td>1.45</td>
<td>0.95</td>
<td>0.97</td>
<td>1.6</td>
</tr>
<tr>
<td>2009-10</td>
<td>1.23</td>
<td>1.16</td>
<td>1.05</td>
<td>1.3</td>
<td>1.37</td>
</tr>
<tr>
<td>2010-11</td>
<td>1.55</td>
<td>0.94</td>
<td>1.03</td>
<td>1.04</td>
<td>1.17</td>
</tr>
<tr>
<td>2011-12</td>
<td>2.41</td>
<td>1.42</td>
<td>1.01</td>
<td>0.59</td>
<td>1.32</td>
</tr>
<tr>
<td>2012-13</td>
<td>2.49</td>
<td>1.97</td>
<td>1.15</td>
<td>0.67</td>
<td>1.42</td>
</tr>
<tr>
<td>2013-14</td>
<td>2.4</td>
<td>2.5</td>
<td>1.47</td>
<td>0.96</td>
<td>1.84</td>
</tr>
<tr>
<td>Mean</td>
<td>2.2242</td>
<td>3.0850</td>
<td>2.1358</td>
<td>1.5883</td>
<td>2.3183</td>
</tr>
<tr>
<td>S.D</td>
<td>1.15876</td>
<td>2.32017</td>
<td>1.75215</td>
<td>0.87543</td>
<td>1.25060</td>
</tr>
<tr>
<td>C.V</td>
<td>52.0951</td>
<td>75.2058</td>
<td>82.0348</td>
<td>55.1174</td>
<td>53.944</td>
</tr>
</tbody>
</table>

Sources: Based on Calculations

In table-5, it shows the detail about bank wise mean, standard deviation & coefficient of variation of loan loss provision ratios of selected public sector banks. Punjab national bank has highest mean value & Bank of India bank has lowest mean value when compare to rest of selected banks. Standard deviation of loan loss provision ratio of Punjab national bank has highest 2.32 with the coefficient of variation of 75.20% and Bank of Baroda has 1.79 standard deviation & high coefficient of variation is 82.03% as compared to remaining public sector banks.

Hypothesis

H₀: There is no significant relationship between Loan loss provision ratios among selected public sector banks in India.
H₁: There is significant relationship between Loan loss provision ratios among selected public sector banks in India.

Table-6: Projects the Results of Anova (One-way) Test

ANOVA: Single Factor
SUMMARY

<table>
<thead>
<tr>
<th>Groups</th>
<th>Count</th>
<th>Sum</th>
<th>Average</th>
<th>Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBI</td>
<td>12</td>
<td>26.69</td>
<td>2.224167</td>
<td>1.342736</td>
</tr>
<tr>
<td>PNB</td>
<td>12</td>
<td>37.02</td>
<td>3.085</td>
<td>5.383191</td>
</tr>
<tr>
<td>BOB</td>
<td>12</td>
<td>25.63</td>
<td>2.135833</td>
<td>3.070045</td>
</tr>
<tr>
<td>BOI</td>
<td>12</td>
<td>19.06</td>
<td>1.588333</td>
<td>0.766379</td>
</tr>
<tr>
<td>Union Bank</td>
<td>12</td>
<td>27.82</td>
<td>2.318333</td>
<td>1.563997</td>
</tr>
</tbody>
</table>

ANOVA

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>d.f.</th>
<th>MS</th>
<th>F</th>
<th>P-value</th>
<th>F critical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>13.81598</td>
<td>4</td>
<td>3.453994</td>
<td>1.424169</td>
<td>0.23820128</td>
<td>2.539689</td>
</tr>
<tr>
<td>Within Groups</td>
<td>133.3898</td>
<td>55</td>
<td>2.425269</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>147.2058</td>
<td>59</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Authors Compilation
According to table-6 it is found that calculated of ANOVA one way test (1.424169) is less than the table value (2.539689) so null hypothesis is accepted. Therefore, it is concluded that there is no significant relationship between loan loss provision ratios among different public sector bank in India.

**FINDINGS**

- Gross NPA ratio shows that Punjab national bank has 12.37 percentages at the end of March 2002-03 and Bank of India has low percentage of 1.37 at the end of March 2009-10 & 2011.
- Net NPA ratio shows that Bank of Baroda has highest percentage of 17.17 at the end of March 2010-11 and Bank of India has low percentage of 4.73 at the end of March 2004-05.
- Loan loss provision ratio shows that PNB has 7.73 percentage at the end of March 2002-04 and also PNB has low percentage of .94 at the March 2010-11.

**LIMITATIONS**

- The study is related to a period of 12 years.
- As the data are only secondary, i.e. they are collected from the published annual reports.
- Only asset quality ratio is taken for the study.

**CONCLUSION**

Asset quality of public sector banks is one of paramount significant in the Indian banking Industry as well for the Indian economy. These banks are looked as the trustworthy banks in which common people can rely. In another words, it can be said that these banks are expectations of common people of their sources of funds. Eventually the study can be concluded that there is no difference among the mean value of Gross NPA ratios, Net NPA ratios and the loan loss provision ratios of public sector banks. However, for the betterment of the public sector banks it is suggested that public sector banks should take more curative and effective steps to improve the asset quality of the banks.

**DATA SETS**

- Indian Bank’s Association (2005-2006). Performance Highlights of Public Sector Banks (Data File). India
- Indian Bank’s Association (2007-2008). Performance Highlights of Public Sector Banks (Data File). India
- Indian Bank’s Association (2009-2010). Performance Highlights of Public Sector Banks (Data File). India
- Indian Bank’s Association (2011-2012). Performance Highlights of Public Sector Banks (Data File). India
- Indian Bank’s Association (2013-2014). Performance Highlights of Public Sector Banks (Data File). India
- Indian Bank’s Association (2003-2004). Performance Highlights of Private Sector Banks (Data File). India
- Indian Bank’s Association (2005-2006). Performance Highlights of Private Sector Banks (Data File). India
- Indian Bank’s Association (2007-2008). Performance Highlights of Private Sector Banks (Data File). India
- Indian Bank’s Association (2009-2010). Performance Highlights of Private Sector Banks (Data File). India
- Indian Bank’s Association (2011-2012). Performance Highlights of Private Sector Banks (Data File). India
- Indian Bank’s Association (2013-2014). Performance Highlights of Private Sector Banks (Data File). India

**REFERENCES**


CHALLENGES ON AGRARIAN CRISIS AND FARMERS SUICIDE IN INDIA:
AN EMPIRICAL STUDY

Dr. S. K. Baral

ABSTRACT
Poor returns to cultivation and absence of non-farm opportunities are indicative of the larger socio-economic malaise in rural India. This is accentuated by the multiple risks that the farmer faces — yield, price, input, technology and credit among others. The increasing incidence of farmers’ suicides is symptomatic of a larger crisis, which is much more widespread. Agriculture has always been the backbone of the Indian economy and despite concerted industrialization in the seven decades; agriculture still occupies a place of pride. About 67 per cent of the work-force work in agriculture and more than 75 per cent live on it in villages. After the liberalization the primary sector has been diminishing and it impact the people has transform to formal sectors.

KEYWORDS
Farmers, Agriculture, Dimensions, Crisis, Infrastructure etc.

INTRODUCTION

In recent years, one observes an increasing incidence of farmers’ suicides. Suicide being a multifaceted and complex phenomenon, the risks are identified either in the neurobiological or socio-economic domain. A relatively higher suicide among a particular sub-group is indicative of a larger socio-economic malaise. The larger agrarian crisis has two dimensions. On the one hand, a livelihood crisis threatens the very basis of survival for the vast majority of small and marginal farmers as also for agricultural laborers. On the other hand, an agricultural developmental crisis lies in the neglect of agriculture arising out of poor design of programmes and allocation of resources and having resulted in declining productivity and profitability. This twin dimensions could also be equated with the developmental discourse where the former is about displacement of people and the latter is about displacement of ideology. The outcome is that planning is not people centric.

Features of the Current Crisis

During the 1990s when the compound annual growth rate for the Gross Domestic Product (GDP) was, 5.9 percent, whereas agricultural GDP was significantly lower at 2.2 per cent. Compared to 1980s, agricultural Gross State Domestic Product was lower in most states in the 1990s and this deceleration was significant for the states of Arunachal Pradesh, Assam, undivided Bihar, Haryana, Kerala, Maharashtra, Meghalaya, Nagaland, Punjab, Sikkim and Tamil Nadu. There has been a decline in the trend growth rate in the production and productivity for almost all crops between the two periods the compound annual growth rate of decreased for food grains from 2.5 per cent to 0.7 per cent, for oilseeds from 6.6 per cent to -0.5 per cent, for sugarcane from 4.0 per cent to 0.1 per cent, for cotton from 4.9 per cent to 0.3 per cent. The worrying part is that the latter period growth rates are lower than 1.9 per cent per annum population growth from 1991 to 2001.

There is an excessive dependence of a large section of the population on agriculture. Between 1993-94 and 2004-05 share of agriculture and allied activities in GDP declined from 30 per cent to 20 per cent, but the share of employment declined from 64 per cent to 57 per cent only. Ratio of worker productivity in agriculture vis-à-vis non-agriculture has declined from nearly one-fourth in 1993-94 to one-fifth in 2004-05. In 2004-05, 64 per cent of the rural persons were from households whose household type (major activity status) was either self-employed in agriculture or agricultural labour. This also indicates that rural non-farm employment opportunities are limited. Increasing population pressure has led to average size-class of holdings declining from 1.84 hectares in 1980-81 to 1.33 hectares in 2000-01, the share of number of marginal holding increased from 56 per cent to 63 per cent and their share of area increased from 12 per cent to 19 per cent (Government of India 2009). This along with poor returns from cultivation suggests that income for farm households is very low. Per-capita per day returns to farmer households from cultivation in 2002-03.

The much talked about green revolution had a greater focus on rice and wheat under irrigated condition by passing crops and regions under rainfed or dry land conditions (which is three-fifths of the 141 million hectares of net sown area in the country during 2003-04). There has been a failure to capitalize on the vast network of institutes to provide and regulate new technology (including the usage of biotechnology), and a virtual absence of extension service.

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Neglect of agriculture in plan resource allocation has led to a decline of public investments in irrigation and other related infrastructure. Gross Fixed Capital Formation (GFCF) in agriculture as a per cent of Agricultural GDP declined from 5.3 per cent in sixth plan (1980-81 to 1984-85) to 2.1 per cent in the ninth plan (1997-98 to 2001-02) and then has increased to 3.0 per cent in the tenth plan (2002-03 to 2006-07). Despite revival in recent years, the inadequate public investment in infrastructure like canals led to private investments in bore wells and along with it a tragedy of the commons.

During the 1990s, there have been important changes in the banking structure. The number of rural branches declined from 32,981 in March 1996 to 31,967 in March 2005. The number of agricultural borrowable accounts declined from 277.4 lakh in March 1992 to 198.4 lakh in March 2001. Agricultural credit as percentage of net bank credit declined from 18 per cent at the end of the 1980s to 11 percent in 2004. Between 1981-82 to 2002-03, the ratio of share of credit disbursed to share of area operated decreased for marginal holdings from 1.02 to 0.41 whereas that of semi-medium and higher holdings increased from 1.08 to 1.40. This means that when the share of area under marginal holdings is increasing, its share of credit disbursed has been decreasing.

The supply of credit from formal sources to the agricultural sector is in adequate leading to greater reliance on informal sources at a greater interest burden (Government of India 2007, Shetty 2009).

In monsoon India, abundance or paucity of water has always been considered as a major source of agricultural uncertainty. With changing technology and market conditions, the farmer is increasingly being exposed to the uncertainties of the product as well as factor markets. Thus, spurious inputs or inappropriate use of technology could have adverse implications on production and productivity. Increasing costs, price volatility, non-availability of credit from formal sources and other risks further compound it. Social responsibility of education, healthcare and marriage instead of being normal activities add to the burden. All these would even put the semi-medium farmer under a state of transient poverty. In sum, the various issues classified into demand and supply can be shown in Table 1.

### Table 1: Matrix of Issues

<table>
<thead>
<tr>
<th>Issues</th>
<th>Demand</th>
<th>Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output, Price, Income.</td>
<td>Yield risk: weather, power, pests,</td>
<td>Increased price volatility; subsidies in US/EU;</td>
</tr>
<tr>
<td></td>
<td>spurious inputs; Not profitable; Poor</td>
<td>low tariff; MSP not always functional; Futures</td>
</tr>
<tr>
<td></td>
<td>returns.</td>
<td>virtual.</td>
</tr>
<tr>
<td>Input</td>
<td>Supplier-induce-demand; Deskilling;</td>
<td>Poor link - research and extension; unregulated</td>
</tr>
<tr>
<td></td>
<td>increasing costs – tragedy of commons.</td>
<td>private suppliers; Inadequate pub investment.</td>
</tr>
<tr>
<td>Credit</td>
<td>Formal sources – not timely; repossession</td>
<td>Decline in branches; decline in agricultural/net bank</td>
</tr>
<tr>
<td></td>
<td>difficult yield/price shocks; System</td>
<td>credit (direct); Increasing reliance on informal sources at</td>
</tr>
<tr>
<td></td>
<td>draws farmers into credit; Consumerism.</td>
<td>higher interest burden.</td>
</tr>
<tr>
<td>Other</td>
<td>Dominance of lender / input dealer;</td>
<td>Interlinked markets; Non-farm option is limited; pub</td>
</tr>
<tr>
<td></td>
<td>higher family size; lack of social support.</td>
<td>health response (farmers); Pesticide availability.</td>
</tr>
</tbody>
</table>

**Sources:** Reserve Bank of India (2006), Mishra (2008)

**RISKS AND FARMERS’ SUICIDES**

An extreme manifestation of the agrarian (livelihood) and agricultural (developmental) crisis has been the increasing incidence of farmers’ suicides. Suicide, a complex and multifaceted phenomenon, would depend on multiple interrelated factors that are a combination of neurobiological or socio-economic. The former are predisposing in nature whereas the latter are the precipitating factors (Figure-1). A question that comes to mind is its increasing incidence among farmers. This in itself is pointing to the fact that something is wrong in agriculture. Suicides’, like indebtedness, is symptomatic of a larger crisis. Alternatively, rather, is a manifestation of the crisis. It indicates that for every farmer committing suicide there are hundred thousands more in crisis. Further, the larger malaise or the agrarian crisis is not just limited to regions reporting higher suicides. It is much more widespread.

**Figure 1: Neurobiological and Socio-economic Risk Factors**

**Sources:** Mishra (2006)
Between 1995 and 2007, more than 200,000 farmers have committed suicides, 83 per cent of these being males. The suicide mortality rate (SMR, suicide death for 100,000 persons) for male farmers increased from 10.5 in 1995 to 18.2 in 2007 and that for male non-farmers increased from 12.4 to 14.1 (Figure 2). An average for 2005-07 shows that the major states with male farmers’ SMR higher than the national average of 18 are Kerala (275), Maharashtra (60), Chhattisgarh (54), Andhra Pradesh (38), Karnataka (34), West Bengal (22) and Tamil Nadu (21), see Figure 3. It is to be reiterated that suicide is a symptom of the larger crisis, and its absence does not in any way indicate the absence of a crisis (Mishra 2009).

**RISK MITIGATION THROUGH CHOICE OF TECHNIQUES**

Barring extreme years, production and productivity of most crops seem to be increasing over the years. However, they also seem to add to the risks (Mishra 2008). Hence, various alternatives should be scrutinized through the alternative of techniques, Amartya Sen (1960). A technique, $T_i$, is one where inputs $X_i$ lead to output $Y_i$; where $i=0, 1, 2$ indicates three alternatives. We would consider $T_1$ as an improvement over $T_0$ if either $X_1 < X_0$ or $Y_1 > Y_0$. A method would be preferred over another if either it is input-saving (uses less inputs for giving the same output) or output enhancing (uses same inputs to give more output). The innovations in agriculture has largely followed a pattern where $Y_1 > Y_0$ but at the same time $X_1 > X_0$. There has been more production, but the techniques use more inputs to give more output. It so happens that the net returns are higher ($Y_1 - X_1 > Y_0 - X_0$) but the rate of increase in output is lower than the rate of increase in input ($Y_1 / Y_0 < X_1 / X_0$) and this can make risk mitigation much more difficult.

An illustration is given in Table 2. Under traditional technology, the per annum value of input is 1 unit and output is 3 units giving a net return of 2 units and from this consumption is of 1.3 units and savings is 0.7 unit. The cumulative savings at the end of three years would be good enough to compensate for input costs and provide for consumption at slightly reduced level in case of crop failure in the fourth year.
Table-2: Comparing Traditional, Input-intensive and Sustainable Technology: An Illustration

<table>
<thead>
<tr>
<th>Technology</th>
<th>Year</th>
<th>Input</th>
<th>Output</th>
<th>Net Return</th>
<th>Consumption</th>
<th>Cumulative Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Traditional, T₀</td>
<td>1</td>
<td>1.0</td>
<td>3.0</td>
<td>2.0</td>
<td>1.3</td>
<td>0.7</td>
</tr>
<tr>
<td></td>
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<td>2.1</td>
</tr>
<tr>
<td></td>
<td>4</td>
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<td>-1.0</td>
<td>1.1</td>
<td>0.0</td>
</tr>
<tr>
<td>Input Intensive, T₁</td>
<td>1</td>
<td>3.0</td>
<td>6.0</td>
<td>3.0</td>
<td>1.8</td>
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</tr>
<tr>
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<td>6.0</td>
<td>3.0</td>
<td>1.8</td>
<td>2.4</td>
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<tr>
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<td>6.0</td>
<td>3.0</td>
<td>1.8</td>
<td>3.6</td>
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<td></td>
<td>4</td>
<td>3.0</td>
<td>0.0</td>
<td>-3.0</td>
<td>0.6</td>
<td>0.0</td>
</tr>
<tr>
<td>Sustainable, T₂</td>
<td>1</td>
<td>0.5</td>
<td>2.7</td>
<td>2.2</td>
<td>1.4</td>
<td>0.8</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0.5</td>
<td>2.7</td>
<td>2.2</td>
<td>1.4</td>
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<tr>
<td></td>
<td>3</td>
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<td>2.7</td>
<td>2.2</td>
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<td>2.4</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>0.5</td>
<td>0.0</td>
<td>-0.5</td>
<td>1.4</td>
<td>0.5</td>
</tr>
</tbody>
</table>

Sources: Mishra (2008)

In the input-intensive technology, the per annum value of input is 3 units and the output is 6 units giving a net return of 3 units. Because of enhanced returns, if consumption increases to 1.8 units then there is a savings of 1.2 units. Note that there is a decrease in the marginal propensity to consume, as it is only 50 per cent of the incremental increase in net returns compared to 65 per cent earlier, indicating that the individual is willing to save more in the spirit of the enterprise that in the first place led the farmer to adopt the new technology. However, in the new scenario, the cumulative savings at the end of the third year can compensate for input costs and consumption at a much lower level – lower than what would have been the case under the traditional technology. Thus, what seems to be giving a relatively higher net return in a normal year lowers the capacity to smooth consumption in a bad year.

Under sustainable technology, the per annum value of input is lower at 0.5 units and the output is 2.7 units giving a net return of 2.2 units (in actual practice, the output need not fall, and hence, net returns would be much higher). The returns are higher than the traditional technology, but lower than the input-intensive technology. Because of enhanced returns, if consumption increases to 1.4 units then there is a savings of 0.8 units. Here also we assume that there is a decrease in the marginal propensity to consume, it is also at 50 per cent of the incremental increase in net returns, and the savings is somewhere in between the earlier two scenarios discussed. The cumulative savings at the end of the third year can compensate for input costs and consumption at the level and still be left with some savings. Such technologies will help smoother consumption in bad years that need to be encouraged.

PUBLIC POLICY INTERVENTIONS

There are two interventions of recent years that we will discuss. The increase in Minimum Support Price (MSPs) of 16 major crops in Kharif 2008. In fact, the absolute increase would be almost equal to increments in the entire decade (Table 3). Though welcome, this vindicates the established fact that returns to agriculture had turned out to be abysmally low. I may also reiterate that the recent increase in food prices in India as also elsewhere have more to do with other factors.

Table-3: Increase in Minimum Support Price (MSP) of Selected Crops in India, 1997-98 to 2008

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Paddy Common</td>
<td>415</td>
<td>645</td>
<td>850</td>
<td>230</td>
<td>55</td>
<td>32</td>
</tr>
<tr>
<td>Coarse Cereals</td>
<td>360</td>
<td>690</td>
<td>840</td>
<td>240</td>
<td>67</td>
<td>40</td>
</tr>
<tr>
<td>Maize</td>
<td>360</td>
<td>620</td>
<td>840</td>
<td>260</td>
<td>72</td>
<td>35</td>
</tr>
<tr>
<td>Arhar (Tur)</td>
<td>900</td>
<td>1550</td>
<td>2000</td>
<td>650</td>
<td>72</td>
<td>29</td>
</tr>
<tr>
<td>Groundnut-in-shell</td>
<td>980</td>
<td>1550</td>
<td>2100</td>
<td>570</td>
<td>58</td>
<td>35</td>
</tr>
<tr>
<td>Sunflower Seed</td>
<td>1000</td>
<td>1510</td>
<td>2215</td>
<td>510</td>
<td>51</td>
<td>47</td>
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<tr>
<td>Soyabean Black</td>
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<td>910</td>
<td>1350</td>
<td>240</td>
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<td>Nigerseed</td>
<td>800</td>
<td>1240</td>
<td>2405</td>
<td>440</td>
<td>55</td>
<td>94</td>
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<tr>
<td>Cotton (F-414/Med Staple)</td>
<td>1330</td>
<td>1800</td>
<td>2500</td>
<td>470</td>
<td>35</td>
<td>39</td>
</tr>
<tr>
<td>Wheat (Rabi crop)</td>
<td>510</td>
<td>750</td>
<td>1000</td>
<td>240</td>
<td>47</td>
<td>33</td>
</tr>
</tbody>
</table>

Sources: Directorate of Economics and Statistics, Department of Agriculture and Cooperation, Ministry of Agriculture, Government of India, Various Years (for recent years, http://dacnet.nic.in/eands/MSP.htm)
Another recent public policy intervention has been the Rs.70,000 crore-debt waiver package. This is just a book keeping exercise and at best will reduce the burden from formal sources. This does not address the indebtedness from informal sector where interest burdens are much higher. More importantly, this is not going to spruce up returns. It does not necessarily lead to an increase in investment for agricultural production. In fact, an important reason for defaulting on a loan is that returns are poor. Besides, the loan waiver fails raises questions of equity. The states/regions where indebtedness from formal sources would be much lower like Bihar and Orissa will benefit less whereas greater benefits will be there for the states of Andhra Pradesh, Maharashtra and Punjab. The restriction of the waiver to small and marginal farmers indicates that in rain fed regions with slightly higher size-class of holding may not benefit whereas a small farmer with access to irrigation will benefit. Such one-time measures also tend to ignore the need for a credit guarantee or some such scheme for non-willful default.

**CHALLENGES AND STRATEGIES**

There is a widespread perception that unbearable burden of debt and increased competition from imports is symptomatic of a crisis in Indian agriculture. Both these phenomena are real: inability to bear debt has led to farmers' suicides on an unprecedented scale. However, suicides are concentrated mostly in low rainfall, poorly irrigated regions and among a rather small fraction of the population. Import liberalization has had a strong dampening effect on the prices of several crops, especially plantation crops. This has caused considerable distress in regions where they are prominent in the farm economy. Without minimizing the importance of these aspects, they cannot be interpreted as indicative of, or causing, a widespread systemic crisis.

Nor should the suicides be interpreted to mean that the Indian peasantry, in general and everywhere, is suffering from an unbearable burden of debt. In 2002, less than 30 per cent of rural households in the country had outstanding debt and this constituted barely 2-3 per cent of the total value of assets held by them. The incidence of indebtedness in the States where suicides are high (Maharashtra and Andhra Pradesh) or have been affected by import liberalization (Kerala) though higher than average is still no more than a fifth. Dependence on high-cost, non-institutional sources is everywhere declining progressively. Much, of course, remains to be done to extend the reach and improve functioning of the institutional credit system, especially cooperatives. The state has also the duty to give relief to surviving members of suicide-affected families. However, there is no warrant for the clamor for generalized debt relief by way of postponement of recoveries or waivers of interest, and even principal. The burden of debt is neither crushing nor of crisis-making proportions.

Nevertheless, there are two reasons to be concerned that Indian agriculture may indeed be facing a wider, deeper crisis: (1) The long term growth trend in production and productivity of agriculture, considerably less than required to sustain the projected high overall growth rates in the coming decade, may actually be slowing down; and (2) the growing economic and social disparities between agriculture and the rest of the economy and between rural and urban sectors.

During the last five decades, agricultural production has increased at an average annual rate of 2.5-3 per cent. Rigorous statistical testing does not provide strong corroboration of any sustained deceleration over this period taken as a whole. However, there are some indications that the growth rates during the 1980s and the 1990s are lower than in the earlier decades, with that since 1991 being somewhat lower than in the 1980s. However, cause for concern is the marked slowing down of growth in States that are highly irrigated, have shown the greatest dynamism in adopting new technology, and have been a significant factor in sustaining the national growth rate.

Another concern is widening economic disparities between agricultural and non-agricultural sectors and between rural and urban areas. In the early 1950s, GDP per worker in non-agricultural sectors was twice that in agriculture; currently the ratio is over 4:1. Rural-urban disparities in terms of per capita consumption expenditure, though much narrower, have also increased. Based on National Sample Survey estimates, the ratio of urban to rural per capita consumption expenditure has risen progressively from about 1.28:1 in the mid-1970s to 1.47:1 by 1999-00. There is reason to believe the NSS underestimates the extent of rural-urban inequality in consumption as also the extent of its deterioration.

Rural-urban disparities in basic social amenities have also increased in quality though not in quantity. All these have led to resentment among the rural population that the benefits of development have gone to the urban areas. That the response is to offer assorted, but ill-thought-out, sops without addressing the deeper more basic issues of agricultural growth, rural employment, and governance is the basis for a sense of crisis.

An influential segment of opinion in and outside the government believes the solution is to accelerate the pace of GDP growth. The Planning Commission's approach to the 11th Plan is firmly rooted in this belief. It postulates a target growth rate of 8-9 per cent per annum for overall GDP. This is considered feasible, indeed could even be surpassed, provided the process of privatization, globalisation, and better fiscal management is accelerated. The sustainability of the projected overall growth rate depends on accelerating the growth of agriculture to 4 per cent per annum. Neither privatization nor globalization can work this miracle.
The slowing down of agricultural growth is widely attributed to the slowing down of investment, especially public investment. The Planning Commission seems to share this perception and sees increased investments in irrigation and watershed development as the means to achieve the projected growth. However, what is relevant is not the magnitude of investment but its contribution to increasing production capacity. For a variety of reasons peculiar to agriculture, production capacity has not increased in proportion to the quantum of investment.

Thus outlay on surface irrigation, which accounts for the bulk of public investment in agriculture, is concentrated on projects that have taken an unacceptably long time to complete. Costs have risen and outlays have not resulted in any significant additions to irrigated area. The efficacy of public investments in soil and water conservation is in serious doubt. They are marked by huge waste and corruption; and there are hardly any mechanisms at the local level to manage the works and ensure the potential for expansion is properly exploited. They have had hardly any impact on raising product potential or productivity of rainfed lands.

Private investment has been concentrated on groundwater exploitation deepening wells and installing more powerful pumps and mechanization. In the context of falling water tables a sure sign of overexploitation of groundwater, these investments do not increase the volume of groundwater available for irrigation and therefore production capacity. The impact of mechanization is primarily to replace human and animal labour with tractors, harvesters, and threshers. Their contribution to increasing productive capacity is, if at all, of a secondary importance.

It is, therefore, important to focus on deeper, more basic, reasons for the slowdown of agricultural growth. For this, it is useful to distinguish between three broad phases of agricultural growth in the post-Independence period. During the first phase, lasting from the early 1950s through the mid-1960s, the major part of growth came from expansion of area. Expansion of surface irrigation and fertilizer use brought about modest yield improvement. During the second phase, from the mid-1960s through the 1980s, the scope for extending area was more or less exhausted. However, this was more than compensated by an unprecedented increase in the rate of yield improvement due to massive investment in irrigation and the advent of new seed-fertilizer technology. The pace of expansion in surface irrigation slowed down during the latter part of the period despite continuing large-scale investments. The flow of technology improvements was fitful. Progress was particularly disappointing in rain-fed agriculture.

This was also a period marked by imprudence in the use of land, water, fertilizers, and other key inputs due to failures of governance, poor management of public systems catering to agriculture and pricing, and subsidy policies inimical to the prudent use of resources and effective exploitation of the potential of available technology. With the scope for expanding area being exhausted and the scope for further expansion of irrigation being diminished, the institutional barrier comprising governance, the quality of public systems, and economic policies has become the most serious impediment to agricultural growth.

Six Steps of Overcoming this Barrier Calls for a Major Reorientation on the Following Lines

- Shifting public investment towards modernization of surface irrigation works (to facilitate higher yield per unit of water used) and for watershed development.
- Prioritizing incomplete irrigation projects after strict cost-benefit analysis and monitor implementation.
- Limiting government’s role to laying down the broad principles and institutional framework. Entrust direct management of land, water, and common service facilities to autonomous organizations functioning within well-specified rules.
- Enforcing better preventive and punitive measures to contain gross violations of rules governing access to and use of resources.
- Conducting a critical review of the research system in public institutions to make it more effective.
- Changing policies relating to pricing of yield and input to avoid waste.
- These may be obvious and some elements even figure in official rhetoric. That they pose tough challenges is also obvious. However, the challenges have to be confronted to overcome the institutional constraints and disincentives that are now the critical bottlenecks in realizing the potential for increasing production. Without it, the target of 4 per cent sustained growth in agriculture will remain a dream.

CONCLUSION

Risk management in agriculture should address yield, price, credit, income or weather related uncertainties among others. Improving water availability will facilitate diversification of cropping pattern, but this should go hand in hand with policies that increase non-farm employment. Improving agricultural extension that addresses deskillng because of technological changes and facilitates appropriate technical expertise for alternative forms of cultivation such as organic farming will be of help. Availability of affordable credit requires revitalization of the rural credit market. There is also a strong case for regulating private credit and input markets. A challenge for the technological and financial gurus is to provide innovative products that reduce costs while increasing returns. Organizing farmers through a federation of self-help groups (SHGs) with government, banks and other stakeholders playing a pro-active role would be welcome. Besides, public institutions, there is need for a greater involvement from the civil society. Risk mitigation has to go beyond suicides and debt. It should address yield, price, credit, income, weather and...
other uncertainties. What is more important is to spruce up public investments that will increase returns to cultivation. Skill enhancement and linking of opportunities to local resources are required to spruce up non-farm income. Success of the credit and input markets require effective regulation. Interventions, whether technological or financial, even if they enhance production, end of adding to the risk/cost. There is a case for encouraging technological and financial products that would reduce costs while increasing returns. Institutions that can organize farmers are required.

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DEMONETIZATION: IMPACT AND IMPLICATION

Dr. Rajshree R.17 Shivalaxmi18 T. Sushma Sadanand19

ABSTRACT

The Government has launched an ambitious demonetization drive under the leadership of our Prime Minister Shri Narendra Modi who has declared that Rs 500 and Rs 1000 notes are no longer accepted as legal tender money since 8th November 2016. There has been panic and chaos ever since and the dust looks far from settled. People are rushing to banks to exchange old demonization or to withdraw stipulated amount of cash. This has led to a lot of inconvenience. Many feel it is a part of their sacrifice for the greater good of the nation while some choose to condemn the initiative of the Government. In this scenario, it is imperative to separate the wheat from the chaff and this paper intends to highlight the need for demonetization, its implications, and to understand the perception of the people towards demonetization.

KEYWORDS

Demonetization, Initiative, Implications, Perception etc.

INTRODUCTION

Demonetization- is a word, which invokes mixed reactions, in the minds of people worldwide. Be it any nation, the citizens are uprooted from their current comfortable state of existence to a state of chaos and discomfort. But in the larger interest of the nation and its economy it is necessary to demonetize the currency. Demonetization is the act of stripping a currency unit of its status as legal tender. Demonetization is necessary whenever there is a change of national currency. The old units of currency must be retired and replaced into new currency units.

A nation’s central banks or monetary authority issues the currency or legal tender. The RBI is the authority in our country. Shree Narendra Modi might have shocked the nation on November 8th announcing high demonetization notes as invalid, but this is not the first time demonetization has taken place in our country. It has occurred twice before. In January 1946, before independence Rs 1000, Rs 500 and Rs 10000 notes were demonetized. In the year 1977 the then Janata party leader Shri Morarji Desai came in to power and a year later in 1978 he had taken Rs 1000, Rs 500 and Rs 10000 notes out of circulation. There has always been a debate on the issue of demonetization, whether it is good for the economy or will it cripple the government.

The overall objectives or the need has always been to eradicate black money and crack down on counterfeits. The millions dollar question has always been if it will hit the right targets. There are skeptics who opine that there are major hoarders who do not hoard cash in their country but they do so in undisclosed accounts in foreign banks. So is this an effective exercise at all? Although demonetization had taken place earlier in 1946 and 1977. There is a difference between those years and year 2016. Today people have access to ATM, Debit and credit cards that facilitate cashless transactions. People are excited; some are in panic mode and are scrambling for exchange. The government is making effort to minimize the chaos and streamline the entire process. Though it is early to judge whether this third time demonetization will be fruitful or not this bold and revolutionary masterstroke, by the government to tackle the epidemic of counterfeit currency, parallel economy and terror financing is highly commendable. Many economists argue that the economy stands to benefit in many ways but this move is not devoid of its repercussions.

IMPLICATIONS

In the wake of demonetization, country is Rife with rumors, but the probable implications would be:

- Disruption in the current liquidity situation. The money crunch will affect many families and the limited exchange term laid by the government is suffocating.

- People who do not have a bank account are clueless.

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• Hospitals, petrol bunk, educational institution etc., have not followed the directive of the government to accept old currency until 24th November.

• Large parts of the rural economy use cash for 80% of their transactions.

• Due to uncertainty, stock markets initially witnessed a plunge, but hopefully will recover shortly. Black money also exists in real estate, political funding etc.; real estate may witness a plunge. The nifty reality index closed at 175.2, down 11.6010.

• Commodities and agricultural sector is expected to have a setback. Many will have to resort to online purchasing which may affect the retail sector.

• The move has its effect on other markets such as gold and silver. Initially investors rushed to buy them, which resulted in soaring of prices. People will trust jewellery than currency notes. However S. Subramaniam, CFO of Titan Company opined that the Indian jewellery market would be worst hit with demonetization, as many shoppers prefer to pay amounts to 2 lacs in cash.

• Tourism will be hit as many black money sponsored trips are in cash form.

• Luxury goods, entertainment, beauty parlors are a safe haven for people to spend their undisclosed income. These sectors will suffer a setback. Education, pharma, hospitals, energy, telecommunications etc., may not be affected by this demonetization drive. Although it is very soon to declare, what sectors will be or will not be affected-Time will tell if this move by the Government will steer the nation to greater and cleaner heights.

On a positive front, the economy is steering itself towards a Cash less one.

• Online retail, e-market place will be in.

• Unaccountable cash in the economy will make its way to the banks and thereby boosting deposits and savings. The demonetization of high denomination currency notes will hit black money hard. Banks and Post offices are the biggest beneficiaries. Insurance, asset/wealth management companies are the next as they are likely to have huge financial savings.

• This move will affect the way our Government policies will be perceived in international forums. There will be short, medium and long term microeconomic and macroeconomic impact.

• The paramount advantage however is that this helps in eliminating fake currency, which has been used by terror, groups to fund terrorism in India.

• There will be awareness among the citizens of India and they will become conscious citizens. They will open bank accounts and have identity cards.

• All stalwarts of the banking sector like Deepak Parekh, Chandra Kocher opine that this move will have positive outcome, as it will help curb black money in the economy.

• However, on the realistic front one cannot deny the presence of opposition parties who will vehemently counter or oppose this move by the Government in their winter session of Parliament which has begun.

OBJECTIVES OF STUDY

• To understand the need for demonetization.

• To understand how people perceive demonetization.

RESEARCH METHODOLOGY

The research is based on data collected from the following sources.

Primary Source: The data is collected from a properly designed questionnaire.
Secondary Source: Literature is collected from journals, magazines, and newspapers and relevant website.

Scope of Study: The data is collected within the city of Secunderabad in the State of Telangana. The sample size is 100.

Tools for Analysis: Simple statistical tools were used to analyze the data.

DATA ANALYSIS

Table 1

<table>
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<tr>
<th>S. No.</th>
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<tr>
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<td>2</td>
<td>Age Group</td>
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<td></td>
<td>60 and above</td>
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<td>Rs. 20,000/- to Rs. 60,000/-</td>
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<td>Rs. 60,000 &amp; above</td>
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<td>4</td>
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<td>Do you go to bank / post office?</td>
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<td>8</td>
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<td>Is post office catering to your need?</td>
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<tr>
<td>10</td>
<td>Will situation stabilize soon?</td>
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<tr>
<td>11</td>
<td>Will citizens be more careful now?</td>
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<td>12</td>
<td>Can Demonetization remove Black Money?</td>
<td>70</td>
</tr>
<tr>
<td>13</td>
<td>Can Demonetization counter terrorism?</td>
<td>70</td>
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<td>14</td>
<td>Do you know the implications of Demonetization?</td>
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<td>15</td>
<td>Are corrupt Punished?</td>
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<td>16</td>
<td>Will this move lead to honesty taxpayers?</td>
<td>70</td>
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</table>

Sources: Authors Compilation

FINDINGS

- Most of the respondents are aware of the concept of demonetization.
- 80% of the respondents feel the banks and post offices are doing their best to cater to their needs.
- 70% of the respondents are not sure when the situation stabilizes.
- Majority opinion that citizens will be more careful from now.
- Majority of the respondents are of the view that this initiative will help curb black money and counter terrorism.
- Although many are not aware of all the implications of this reform measure, they feel that this may end certain corrupt practices and pave the way for more honest and conscious taxpayers.

SUGGESTIONS

Especially many small and middle-income groups of people have received this demonetization drive with optimism. They are facing hardships; nevertheless, they all suggest that the Government can do better by streamlining processes at the banks and post offices. Additional infrastructure like more terminals, separate arrangements for cash, exchange and dispensation may be implemented for the smooth conduct of this mega operation. Awareness programmes should be aired on media to explain and
highlight benefits of this drive to the uneducated and ignorant class of citizens and to ward off unnecessary rumors, which spread panic among the masses.

**CONCLUSION**

Although the idea and intent of demonetization may seem very good, there are challenges in its execution. Majority of the citizens simply follow the old *Vegan Fallacy* “that if something tastes terrible it must be good for you. The citizens are ready to undergo this turmoil for a better India. However, India is too big and complex for such a drastic reform, the Government has shown courage in this endeavor. It has attained significance on a global platform spreading the message that INDIA is for a change in its regime towards a healthy economy. Mr. Narayana Murthy, founder of Infosys said that “the dishonest will have to suffer; absolutely that is the right thing.”

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A COMPARATIVE STUDY OF NON-PERFORMING ASSETS OF PUBLIC SECTOR BANKS AND FOREIGN BANKS IN INDIA

Dr. Chirag P. Surti

ABSTRACT

Public Sector Banks by their nature are Government owned Banks and therefore their banking obligations have to be focused on the Government economic program. However, Foreign Banks in India are remote from the National Development Programs of the country. Management of NPA’s has been considered as one of the major criteria in Public Sector Banks in India when compared with Foreign Banks in India. For this purpose T test has been used to compare the trends of percentage of Gross NPA’s and Net NPA’s of Public Sector Banks with Foreign Banks in India.

Non-performing assets is a central matter in this study because it have not only affected the productivity and the profitability of Banks, but also ruined the image of the Indian banking and the outlet on the very value system of the society. The study is limited to the period of five years, i.e. From 2011 to 2015. The study is based on secondary data collected from RBI reports on trends and progress of banking in India. The objective of the study is to compare the quality of assets in terms of Gross NPA’s and Net NPA’s of Public Sector Banks with Foreign Banks in India.

KEYWORDS

Total Advances, % of Gross Non-Performing Assets, % of Net Non-Performing Assets etc.

PUBLIC SECTOR BANKS IN INDIA

It was in 1969 under a vibrant leadership of late Smt. Indira Gandhi, 14 most important banks were nationalized by the inductive outline of main shareholding of Government of India. In this political result, the honesty of Government to reroute capital flow into untouched rural and semi urban economy bubble. By way of the Government presumptuous control of the management of these 14 nationalized banks, the action map for rural economic development had been quickly joined up under a flag of 20-point economic agenda to be employed by all nationalized banks.

FOREIGN BANKS IN INDIA

The Foreign Banks are the Banks, whose branch offices in India, but they are integrated outside India. Foreign Banks in India are determined in urban centres, certain state capitals and other important cities and thus they are remote from the National Development Programs. These Banks are largely concerned with huge commercial accounts and offer a whole package of services such as assessing the feasibility of the joint ventures of Indian firms and companies abroad, information on local levy and rights issues and the structuring of project costs. They are also engaged in the financing of export and imports. Normally, these Foreign Banks do not support mass Banking and rather provide to the selected of the society since the cost of their services is comparatively high. The Reserve Bank of India and the Government of India have introduced a number of liberalization measures, which have enlarged the role of Foreign Banks. New Foreign Banks have been allowed to come and existing one permission to open a new branch. Their relaxation is in line with the entry norms under the General Agreements on Tariffs and Trade (GATT).

LITERATURE REVIEW

RBI issued descriptive circulars and guideline. Most of daily, weekly, fortnightly and monthly publication carried an article in bold form giving special importance in above issues. Therefore, IBA bulletins, RBI guideline, PSB’s handbook and extract from various seminars on the subject to literature review. There are many research performed on the subject of Management of Non-Performing Assets in Public Sector Banks and Foreign Banks in India, following are the review of few literatures about the NPA management conducted for Banks in India.

Gourav Vallabh, Anoop Bhatia and Saurabh Mishra (2007), In their article titled " Non- Performing Assets of Indian Public, Private and Foreign Sector Banks: An Empirical Assessment " focus that Non-Performing Assets which are nothing but loan assets of a Bank that have non-functional as the respective borrowers have defaulted on their liabilities of a Bank have become critical in defining the financial health of the Bank. Here, it is immaterial whether a borrower defaulted on his repayment obligation by virtue of his not being able to realize the anticipatory cash flows from the business either due to his managerial

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incompetence, financial inadequacy, product failure, market competition, technological obsolescence etc., or due to changes in Government policies, macro-economic fundamentals, natural calamities, labour problems etc., or because of the fact that the lending Bank failed to respond to the borrower's capital needs emanating from the altered market reflections well in time. Thus, it has become a critical for a Bank to anticipate the possibilities of an account turning into NPA and initiate a suitable arresting mechanism at its very initial stages, for that is the only way for it to remain healthy. The study throws open a new field of research for testing the impact of other important macroeconomic fundamentals, such as inflation rate, interest rate and exchange rate and their variation on the accretion or otherwise of NPA's. Similarly, Bank - specific parameters, such as Bank’s sensitivity to time the debt restructuring rightly or providing adequate capital in time vis-à-vis the demand.

Vasant Desai (2007), in his book chapter, "Non-Performing Assets" had concluded that the accumulation of huge Non-Performing Assets in Banks and financial institution has assumed great importance. The depth of the problem of bad debts was first realized only in early 1990s. The magnitude of NPAs in Banks and financial institution is over Rs. 150000 crores. While the gross NPA reflects the quality of loans made by Banks, net NPA shows the actual burden of Banks. Now it is increasingly evident that the major defaulters are big borrowers coming from non-priority sector. The Banks and financial institution have to take the initiative to reduce NPA in a time bound strategic approach. The Government has empowered the Banks to take over the management of the business of a borrower merely by publishing a notice in a newspaper. In India, it is observed that the probability of success of such a strategy in much higher compared with the policy of debt transfer to AMCs. Therefore, it is suggested that India should opt for the decentralized creditor-led strategy and adopt policies to create an amicable environment for the success of such a strategy. However, in some Bank-specific cases, a time bound AMC can be conceived after meeting all the pre-conditions of AMC - based restructuring, if the need arises.

Jyoti Sharma (2010), in her article titled "NPA Management - a Major Challenge for Banks" conclude that a variety of avenues is available to Banks and financial institutions in India to recover funds blocked in NPA and to use them for productive purposes. However, practically it is observed that they face many hurdles in this task consequent to borrowers taking benefit of loopholes in the existing statutes. Therefore, there is a need to remove such hurdles faced by the Banks and financial institutions by bringing in appropriate changes in the existing legal framework.

Geetika Gupta (2010), in her article titled "BASEL III Indian Banking Perspective" conclude that the new rules provide a clear timeline on when and how these changes should be implemented. The process will be quite gradual and not in full effect until 2019. But implementation will be undertaken in a very smart way, providing benchmarks within the process to ensure that Banks are on their way to full compliance, with some preliminary standards needing to meet starting 2013. It is likely that the market will push Banks to implement new standards faster than as required under Basel III.

Rajput, N. Arora, A. P. Kaur, B. (2012), in this paper, study has been made on management of NPA in public sector banks in India under strict guideline prescribed by RBI relating to prudential norms for income recognition, provisioning and assets classification. NPA is an important indicator to show performance and position of banks in India. Higher the provision for doubtful assets decreasing the margin of profit. Reduction of non-performing assets shows the reliability of banks.

**OBJECTIVES OF STUDY**

- To evaluate the Public and Foreign Sector Banks with respect to their credit competence.
- To analyze the impact of growth in Gross NPA’s and Net NPA’s, over the asset quality in credit portfolio of Banks.
- To compare percentage growth in both Gross NPA’s and Net NPA’s in Public and Foreign Sector Banks in India.

**RESEARCH HYPOTHESIS**

To achieve the above objectives, following hypothesis is formulated and tested based on “T” test.

- H₀: Percentage of Gross non-performing assets to total advances of Public Sector Banks is parallel to Foreign Sector Banks in India.
- H₁: Percentage of Gross non-performing assets to total advances of Public Sector Banks is more than the Foreign Sector Banks in India.
- H₀a: Percentage of Net non-performing assets to total advances of Public Sector Banks is parallel to Foreign Sector Banks in India.
- H₁b: Percentage of Net non-performing assets to total advances of Public Sector Banks is more than the Foreign Sector Banks in India.
RESEARCH METHODOLOGY

The study considered primary data collected through specially arrange visits with the director of Centre for Monitoring Indian Economy (CMIE), Ahmedabad. Secondary data collected from the annual report and website of Reserve Bank of India and from the literature review.

PERIOD OF STUDY

For the purpose of comparison of Non-Performing Assets of Public Sector and Foreign Banks in India, data for the year 2011 to 2015 has been used.

CONCEPT OF NON-PERFORMING ASSETS

This income recognition norms and assets classification with provisioning norms made balance sheet structure of PSB's so transparent and clear at par with international practices, that global financial organization got attracted towards Indian Banks in particular and emerging market in general. The Public Sector Banks represent the backbone of the Indian financial system and have admirably managed where key financial indicators compete with the global benchmark standard and hence such status being a fresh with growth in the Indian economy, provide a very interesting challenges to go into the changing scenario of efficient assets management on one hand fulfilment of capital adequacy on the other hand.

PRUDENTIAL NORMS

- Income recognition.
- Assets Classification.
- Provisioning norms for bad debts.

Performing Asset: Performing assets are advances, which generates income to the Bank by way of interest and other charges.

Non-performing Asset: Non-performing Asset is that deployment of the Bank's funds which is not earning any income / return for Bank and funds deployed also become illiquid.

Income Recognition: A Bank's advances are to be classified into performing and non-performing assets (NPA). The international practice is not to consider the interest income from NPA on accrual basis but to consider such income as and when it is actually received. The RBI issued a detailed guideline to Banks regarding classification of advances between performing and non-performing assets, which have been revised from time to time. The latest guideline for determining the status of credit facilities are discussed below:

- Interest and or instalment of principal remains overdue for a period of more than 90 days in respect of the term loan,
- The account remains out of order for a period of more than 90 days, in respect of an overdraft / cash credits (OD/CC),
- The bills remain overdue for a period of more than 90 days in the case of bills purchased and discounted,

In case of direct agricultural advances, the following guidelines are applicable for classifying an account as an NPA.

- A loan granted for the short duration crop will be treated as NPA, if the instalment of principal or interest thereon remains overdue for two crop seasons.
- A loan granted for long duration crop will be treated as NPA, if the instalment of principal or interest thereon remains overdue for one crop season.
- Any amount to be received that remains overdue for a period of more than 90 days in respect of any other account will lead to classifying that account as NPA.

As a facilitating measure for smooth transition to 90 days norm, Banks have been advised to move over to charging a rate of interest at monthly rates, by April 1, 2002. However, the date of classification of an advance as NPA should not be changed because of charging of interest at monthly rests. Banks should , therefore continued to classify an account as NPA only if the interest charged during any quarter is not serviced fully within 180 days from the end of the quarter with effect from April 1, 2002 and 90 days from the end of the quarter with effect from March 31, 2004.

Out of Order: An account should be treated as ‘Out of Order’ if the outstanding balance remain continuously in excess of the sanctioned limit/ drawing limit. In cases where the outstanding balances in the principal operating account are less than the sanctioned limit/ drawing limit , but there are no credits continuously for 90 days as on the date of balance sheet or credits are not enough to cover interest debiting during the same period, these accounts should be treated as 'out of order'.
Overdue: Any amount due to Bank under any credit facility is 'overdue' if it is not paid on the due date fixed by the Bank.

Assets Classification: As per the present guideline of RBI the assets classification and the requisite provisions for doubtful debts is as under. Banks require classifying the loan assets (advances) into four categories.

- **Standard Assets:** Standard assets are which does not disclose any problem and which does not carry more than normal risk attached to the business. Such assets are considered as performing assets.

- **Sub-standard Assets:** With effect from 31st March 2005, a Sub- standard asset would be one, which has remained NPA for a period less than or equal to 12 months. In such a case, the current net worth of the borrower / guarantor or the current market value of the security charged is not enough to ensure recovery of the dues to the Banks in full. In other words, such an assets will have well defined credit weaknesses that jeopardize the liquidation of the debt and are characterized by the distinct possibility that the Banks will sustain some loss, if deficiencies are not corrected.

- **Doubtful Assets:** With effect from 31st March 2005 an assets would be classified as doubtful if it has remained in the substandard category for a period of 12 months. A loan classified as doubtful has all the weaknesses inherent in assets that were classified as sub-standard, with the added characteristic that the weaknesses make collection or liquidation in full based on currently known facts, conditions and values- highly questionable and improbable.

- **Loss Assets:** A loss asset is one, which has been identified by the Bank or internal or external auditors or the RBI inspection, but the amount has not been written off wholly. In other words, such an asset is considered uncollectible and of such little value that its continuance as a bankable asset is not warranted although there may be some salvage or recovery value.

Provisions for Doubtful Debts: Strict provisioning norms have been specified in the case of various categories of NPA, via sub-standard assets, doubtful assets and loss assets. In addition to nominal value 0.25% for direct advances to agricultural and SME sector and all other loans and advances at 0.40%. Further, a conservative policy was put in place in respect of loans, which have been either rescheduled or renegotiated. The provision has been extended from credit risk to market risk as well.

The primary responsibility for making adequate provisions for any diminution in the value of loan assets, investment or other assets is that of the Bank management and statutory auditors. The assessment made by the inspecting officer of the RBI is furnished to the Bank to assist the Bank management and statutory auditors in taking a decision about making adequate and necessary provisions in terms of prudential guidelines.

In conformity with the prudential norms, provisions should be made on the Non-performing assets based on classifications of assets into prescribed categories mentioned above. Taking into account the time lag between an accounts becoming doubtful of recovery, its recognition as such, the realization of the security and the erosion over time in the value of security charged to the Bank, the Banks should make provision against different categories of the assets as under.

- **Loss Assets:** The entire amount should be written off or full provision should be made for the amount outstanding.

- **Doubtful Assets:** (I) Full provision to the extent of the unsecured portion should be made. In doing so, the realizable value of the security available to the Bank should be determined on a realistic basis. Deposit Insurance and Credit Guarantee Corporation / Export Credit Guarantee Corporation of India (DICGC/ECGC) cover is also taken into account. In case of the advance covered by Credit Guarantee Fund Trust for Small Industries (CGTSI) guarantee becomes non-performing, no provision need be made towards the guaranteed portion. The amount outstanding in excess of the guaranteed portion should be provided for as per the extent guidelines on provisioning for NPA. (II) Additionally, 20% - 100% of the secured portion should be provided for depending upon the period for which the advances have been considered as doubtful assets, as follow-up to one year 20% provision but one year to three years 30% provision and more than three years 100% provision should be made.

- **Sub-standard Assets:** A general provision of 10% on total outstanding should be made without making any allowances for DICGC/ECGC cover and securities available. An additional provision of 10% (i.e. total 20% of the total outstanding) is required to be made on 'unsecured exposure' of loan. Generally, such a situation may arise in case of personal and education loans etc. Unsecured exposure is defined as an exposure where the realizable value of the security is not more than 10% of the outstanding exposure. Security should not include guarantees, comfort letters etc.

- **Standard Assets:** With effect from 15th November 2008, the provisioning norms for standard assets amended. It has been clarified that the provision should be made on the global portfolio basis and not on domestic advances alone. So direct advances to agricultural and SME sector at 0.25% and all other loans and advances at 0.40%.
REASONS FOR MOUNTING NPA's

The various causes that make an asset NPA can be classified into two categories like internal causes and external causes.

- **External Causes**
  - Natural calamity leading to destruction of assets
  - Recession in the industry
  - Closure of factory due to strikes, court orders
  - Adverse Government policy guideline affecting the production, marketing sales of the product (Ex Import duties)
  - Adverse change in the projected demand due to factors like environmental regulation, change of fashion, change in consumer needs etc.

- **Internal Causes**
  
  **Management**
  - Fraudulence of partners, directors, proprietor etc.
  - Will full default,
  - Lack of proper organizational set up and control,
  - Dispute among partners and directors.

  **Marketing**
  - Scarce product base,
  - Lack of distribution channels,
  - Irregular delivery,
  - Unsuitable pricing.

  **Financing**
  - Lack of resources,
  - Costly outside borrowing,
  - Diversion of funds for unproductive expenditure,
  - Faulty costing and pricing,
  - Increased cost of production.

  **Production**
  - Inappropriate technology,
  - Poor labour productivity,
  - Poor quality control,
  - Lack of production planning and control,
  - Inferior quality of finished goods,
  - Frequent machine breakdowns.

  **Other Causes**
  - Liberalization of the economy like competition, removed restriction etc.
  - Poor monitoring of credit and stoppage to identify before time caution indication by standard assets.
  - Unexpected rolling of capital markets and stoppage to increase sufficient finance.
  - Granting of credit for various segments based on Government orders rather than commercial requirements.
  - Obligation of unruly defaults sense that the lawful resource existing to gather amount outstanding is very near to the ground.
GROSS NPA’S AND NET NPA’S OF PUBLIC SECTOR BANKS IN INDIA

Table-1

<table>
<thead>
<tr>
<th>Year (As On 31st March)</th>
<th>Total Advances (Amount in Rs. Crore)</th>
<th>Gross NPA’s (Amount in Rs. Crore)</th>
<th>% Of GNPA’s to Total Advances</th>
<th>Net NPA’s (Amount in Rs. Crore)</th>
<th>% of NNPA’s to Total Advances</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>3305632</td>
<td>74600</td>
<td>2.26</td>
<td>36000</td>
<td>1.09</td>
</tr>
<tr>
<td>2012</td>
<td>3877307</td>
<td>117262</td>
<td>3.02</td>
<td>59162</td>
<td>1.52</td>
</tr>
<tr>
<td>2013</td>
<td>4472845</td>
<td>164462</td>
<td>3.67</td>
<td>89950</td>
<td>2.01</td>
</tr>
<tr>
<td>2014</td>
<td>5101054</td>
<td>227264</td>
<td>4.45</td>
<td>130360</td>
<td>2.55</td>
</tr>
<tr>
<td>2015</td>
<td>5476250</td>
<td>278877</td>
<td>5.09</td>
<td>159973</td>
<td>2.92</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>3.698</td>
<td></td>
<td>2.018</td>
<td></td>
</tr>
</tbody>
</table>

Sources: RBI Report on Trends and Progress of Banking in India, Various Issues

It is noticed from the above table and diagram, in absolute terms the amount of gross NPA’s of Public Sector Banks continued to increase for the period under study. On march 31st 2011, the total amount of gross NPA’s increased from Rs.74600 crore that is 2.26% of total advances to Rs. 278877 crore in the year 2015 which is 5.09% of total advances. The amount of gross NPA is increased by nearly four times from 2011 to 2015.

The above table also shows the trend in the ratio of gross NPA has and net NPA’s. Constantly growing in the ratio indicates that mounting the quality of bad assets in the public sector banks. The ratio of gross NPA has to total advances placed at 2.26% in the year 2011 to 5.09% in the year 2015, which shows an increasing trend. A same trend was observed in case of a net NPA ratio, which increase from 1.09% in the year 2011 to 2.92% in the year 2015.

GROSS NPA’S AND NET NPA’S OF FOREIGN BANKS IN INDIA

Table-2

<table>
<thead>
<tr>
<th>Year (As on 31st March)</th>
<th>Total Advances (Amount in Rs. Crore)</th>
<th>Gross NPA’s (Amount in Rs. Crore)</th>
<th>% Of GNPA’s to Total Advances</th>
<th>Net NPA’s (Amount in Rs. Crore)</th>
<th>% of NNPA’s to Total Advances</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>1955318</td>
<td>5071</td>
<td>2.59</td>
<td>1283</td>
<td>0.65</td>
</tr>
<tr>
<td>2012</td>
<td>229849</td>
<td>6297</td>
<td>2.73</td>
<td>1411</td>
<td>0.61</td>
</tr>
<tr>
<td>2013</td>
<td>283580</td>
<td>7977</td>
<td>3.02</td>
<td>2661</td>
<td>1.00</td>
</tr>
<tr>
<td>2014</td>
<td>321142</td>
<td>11565</td>
<td>3.97</td>
<td>2160</td>
<td>1.08</td>
</tr>
<tr>
<td>2015</td>
<td>327615</td>
<td>10815</td>
<td>3.30</td>
<td>1761</td>
<td>0.53</td>
</tr>
<tr>
<td>Average</td>
<td></td>
<td>3.122</td>
<td></td>
<td>0.774</td>
<td></td>
</tr>
</tbody>
</table>

Sources: RBI Report on Trends and Progress of Banking in India, Various Issues

It is noticed from the above table, in absolute terms the amount of gross NPA’s of Foreign Banks in India continued to fluctuate for the period under study. On March 31st 2011, the total amount of gross NPA’s increased from Rs.5071 crore that is 2.59% of total advances to Rs. 10815 crore in the year 2015, which is 3.30% of total advances.

The above table also shows the trend in the ratio of gross NPA’s and net NPA’s. Increasing in the ratio indicates that increasing the quality of bad assets of the Foreign Banks in India. The ratio of gross NPA’s to total advances placed at 2.59% in the year 2011 to 3.30% in the year 2015, which shows an increasing trend. Reverse trend was observed in case of a net NPA ratio, which decrease from 0.65% in the year 2011 to 0.53% in the year 2015.

Graph-1

Sources: Authors Compilation
ANALYSIS OF DATA AND INTERPRETATION BY ‘T’ TEST

‘T’ test for comparison of % of Gross NPA’s to Total Advances of Public Sector Banks and Foreign Banks in India

Table-3: t-Test: Two-Sample Assuming Equal Variances

<table>
<thead>
<tr>
<th>Variable 1</th>
<th>Variable 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>3.698</td>
</tr>
<tr>
<td>Variance</td>
<td>1.25787</td>
</tr>
<tr>
<td>Observations</td>
<td>5</td>
</tr>
<tr>
<td>Pooled Variance</td>
<td>0.77867</td>
</tr>
<tr>
<td>Hypothesized Mean Difference</td>
<td>0</td>
</tr>
<tr>
<td>Degree of Freedom</td>
<td>8</td>
</tr>
<tr>
<td>t Stat</td>
<td>1.032085713</td>
</tr>
<tr>
<td>P(T&lt;=t) one-tail</td>
<td>0.166110665</td>
</tr>
<tr>
<td>t Critical one-tail</td>
<td>1.859548033</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

Here the critical value of T is 1.85 while calculated value of T i.e. 1.03. It means accepted H0 hypothesis and rejected alternative H1 hypothesis. Percentage of Gross NPA’s to Total Advances of Public Sector Banks are parallel to Foreign Banks in India.

‘T’ test for comparison of % of Net NPA’s to Total Advances of Public Sector Banks and Foreign Banks in India

Table-4: t-Test: Two-Sample Assuming Equal Variances

<table>
<thead>
<tr>
<th>Variable 1</th>
<th>Variable 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean</td>
<td>2.018</td>
</tr>
<tr>
<td>Variance</td>
<td>0.55147</td>
</tr>
<tr>
<td>Observations</td>
<td>5</td>
</tr>
<tr>
<td>Pooled Variance</td>
<td>0.30655</td>
</tr>
<tr>
<td>Hypothesized Mean Difference</td>
<td>0</td>
</tr>
<tr>
<td>Degree of Freedom</td>
<td>8</td>
</tr>
<tr>
<td>t Stat</td>
<td>3.552546118</td>
</tr>
<tr>
<td>P(T&lt;=t) one-tail</td>
<td>0.003740799</td>
</tr>
<tr>
<td>t Critical one-tail</td>
<td>1.859548033</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

Here the critical value of T is 1.85 while the calculated value of T i.e. 3.55. It means rejected H0a hypothesis and accepted alternative H1b hypothesis. Percentage of Net NPA’s to Total Advances of Public Sector Banks is more than Foreign Banks in India.

FINDINGS

From the table 1 and 2, it is observed that the average percentage of Gross Non-Performing Assets to Total Advances of Public Sector Banks and Foreign Banks in India is almost same.
While the average percentage of Net Non-Performing Assets to Total Advances of Public Sector Banks is greater than Foreign Banks in India.

NPA’s of Foreign Banks in India in terms of the percentage decrease because of some credit policy adopted by them.

**SUGGESTIONS**

- Importance on uninterrupted practice of assessing performance of deployed money in form of all type of assets and not only take a myopia view to assess performance of only that money which is deployed by way of credit that is loans and advances.
- PSB’s are accepted to capture various steps including procedural changes, different types of bookkeeping, transparent system in which clear cut accountability can be fixed.
- The Bank must expand a system established that funds raised by way of loans and advances are utilized for the purpose creating assets stated in the approved proposal and the same have been confirmed by Banks in charge officials instantly on formation of such assets.
- Above referred assets verification report will established endues of funds has also the age of assets and economic life of assets will help the Bank in deciding the course of action to be taken or monitoring performance of these assets vis-à-vis. carry out of borrower account and monetary operation in the account.
- Irrespective of good or bad conduct of the borrower account, whether or not such account remains performing or non-performing, the Bank must evolve a table of year wise provision to be made on such account.
- Assets other than loans and advances, the Bank must evolve a systematic procedure to make judgement on the performance of money deployed by the Bank and wherever performance of deployed money is not attaining the benchmark levels then Banks must take appropriate action to provide for non-performance of other assets.

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A STUDY ON IMPACT OF DIVIDEND POLICY ON THE SHARE PRICE VOLATILITY

S. Manju Bharathi

ABSTRACT

Owning corporate stock is one conventional investment activity. All types of investors, either large institutions or individuals can observe the indices for the report on the movements of the stock prices. Share prices are the most important indicators used by investors whether to invest or not to invest in a particular share. According to efficient market hypothesis, when new information either good or bad news is available to the public they will affect and change the company’s share price. Share prices with higher volatility results in greater risk that the shares may not perform as expected. Based on this, five companies in the IT sector, namely, Tata Consultancy Services (TCS), Infosys, Hexaware Technologies, Tech Mahindra and Wipro have been chosen for analysis by desk research techniques of the effect of announcement of dividends. The ‘before’ and ‘after’ historic data had been retrieved for analysis. Dividend policy decision is a key area in the field of corporate financial management. Firms view dividend policy very important because it determines that what funds flow to investors and what funds the firm for reinvestment retains.

KEYWORDS

Dividend Policy, Share Price Volatility etc.

INTRODUCTION

Share prices are the most important indicators used by investors to invest or not to invest on a particular share. Their main objective of investing in the stock market is to maximize the expected return at low level of risk. There are psychological factors contributed to price changes or volatility. Among them are investors over reaction to earnings, dividends or other new, waves of social optimism or pessimism, fashions or fads. According to efficient market hypothesis, when new information either good or bad news are available to the public. They will effect and change the company’s share price.

Share prices with higher volatility results in greater risk that the shares may not perform as expected. The share price volatility is a benchmark for measuring risk, which indicate the changing pace in stock price over a determined period. The price of the stock would consider over time and it is very difficult to predict the future price of this stock.

Dividend policy decision is a key area in the field of corporate financial management. Firms view dividend policy very important because it determines that what funds flow to investors and what funds the firm for reinvestment retains. Dividends are major return to the shareholders.

It provides a signal to the investors that the company is complying with good corporate governance practices. It is important for the company to ensure that it implies with good capital market to raise funds. By distributing dividend, it is able to attract investors and indirectly increase the company share price.

OBJECTIVES OF STUDY

The following are the objectives of the study:

- To analyse the trend of share price movement on and before the announcement of the dividend among the five private companies for the year 2011-2015.
- To estimate the risk volatility based on the share price movement among the five private companies.
- To determine the stability and prosperity of dividend policy to the shareholders among the five private companies.

RESEARCH HYPOTHESIS

H₀: There is no relationship between share price and dividend policy among the five private companies.  
H₁: There is a relationship between share price and dividend policy among the five private companies.

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SIGNIFICANCE OF STUDY

This study contemplates and elaborates the relationship between share price and dividend payment. This study is helpful to know how the dividend announcement made by the company affects the stock prices. The study further defines the nature of volatility of share price and describes the impact of dividend payment.

METHODOLOGY OF RESEARCH

Duration of Study: This study covers a period of five years from 2011 to 2015.

Purpose of Study: The decision taken regarding dividend payment to the shareholders has great impact on before after the announcement of dividend. The study is conducted to determine the relationship between dividend policy and share price volatility for companies. It is very helpful for the individual investors to know the behaviour of stock market and how to reduce risk which affects the stock prices.

Research Design: A sample size of five major Information Technology companies is selected based on their volume of business. They are Tata Consultancy Services (TCS), Infosys, Hexaware Technologies, Tech Mahindra and Wipro.

Data Collection: The study is based on the secondary data collected from the database maintained by Bombay Stock Exchange. The daily closing share price over a period of five years from 2011 to 2015 was collected. The details regarding the dividend announcement was collected from money control website.

Tools Used For Analysing Data

The tools used for analysing the data are:

- Descriptive Statistics,
- Correlogram.

If the mode, median, and mean are around the same number, the dataset has no skew. If the mode is less than the median and the median is less than the mean, then; the dataset has a positive skew. If the mode is greater than the median and the median is greater than the mean, the dataset has a negative skew. A number called kurtosis measures the height and sharpness of the peak relative to the rest of the data. Higher values indicate a higher, sharper peak; lower values indicate a lower, less distinct peak. The mean and standard deviation have the same units as the original data, and the variance has the square of those units. However, the kurtosis has no units: it’s a pure number, like a z-score. Correlogram test is administered to know whether the time series has white noise or grey noise.

REVIEW OF LITERATURE

Hashemijoo and Ardekani (2012) states that the share price volatility is a benchmark for measuring risk. It indicate changing pace in the stock’s price over a determined period. The more the considerable volatility implies that the possibility of gain or loss is higher in short term. Therefore, the price of the volatile stock would differ considerably over time and it is very difficult to predict the future price of stock.

Bohart (2006) argues that investors are drawn to the stock market to make money, which is done by selling stock at a price higher than what it was originally bought for. He further suggests that since stock prices are largely connected to investor’s moneymaking goals, which helps to understand their inner workings. He therefore concludes that share prices are established in the marketplace but what causes their volatility is inflation and share prices, economic strength of market and psychological issues on stock price, supply and demand and uncertainty.

Gittman (2004) divided stock into two types, such as common stock and preferred stock. He also showed that dividends are the outcome of investment. Therefore, common stocks are an ownership claim against primarily real or productive asset (Higgins, 1995), but he also said that if the company prospers, stockholders are the chief beneficiaries, if it falters, they are the chief losers.

Scozo (2003) advocates two different approaches to estimating implied volatility value. The first is when historical data of the underlying asset is used for the estimation. The other approach is to use the stock pricing formula backward, calculating the implied volatility of the pricing formula belonging to a certain option price level observed on the market.

Nel and Krugler (2001) Share Price Volatility refers to the degree, to which share price vary over a certain length of time.
Allen and Rachim (1996) suggest that the relationship between dividend policy and share price volatility after the inclusion of growth as a control variable would be suggestive of arbitrage or information effect debt, dividend and ownership structure significantly affects the firm value.

DATA ANALYSIS AND INTERPRETATION

Table-1

<table>
<thead>
<tr>
<th>Year</th>
<th>Mean Value Before</th>
<th>Mean Value After</th>
<th>Std. Deviation Before</th>
<th>Std. Deviation After</th>
<th>Kurtosis Before</th>
<th>Kurtosis After</th>
<th>Skewness Before</th>
<th>Skewness After</th>
<th>Beta Before</th>
<th>Beta After</th>
<th>R² Before</th>
<th>R² After</th>
</tr>
</thead>
<tbody>
<tr>
<td>TCS</td>
<td>2015</td>
<td>2612.84</td>
<td>2521.17</td>
<td>62.04</td>
<td>56.69</td>
<td>0.49</td>
<td>-0.77</td>
<td>0.68</td>
<td>0.33</td>
<td>3.0763</td>
<td>5.7213</td>
<td>0.1905</td>
</tr>
<tr>
<td></td>
<td>2014</td>
<td>2648.23</td>
<td>2569.27</td>
<td>71.98</td>
<td>75.55</td>
<td>-1.10</td>
<td>-0.68</td>
<td>-0.03</td>
<td>-0.66</td>
<td>-6.740</td>
<td>-7.8506</td>
<td>0.6798</td>
</tr>
<tr>
<td></td>
<td>2013</td>
<td>2002.20</td>
<td>2057.74</td>
<td>69.48</td>
<td>43.09</td>
<td>1.50</td>
<td>-1.18</td>
<td>-1.17</td>
<td>-0.33</td>
<td>-3.214</td>
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<td>0.1638</td>
</tr>
<tr>
<td></td>
<td>2012</td>
<td>1325.76</td>
<td>1306.78</td>
<td>45.78</td>
<td>18.91</td>
<td>-0.81</td>
<td>-0.39</td>
<td>0.85</td>
<td>-0.56</td>
<td>4.0036</td>
<td>1.0509</td>
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<td></td>
<td>2011</td>
<td>1037.14</td>
<td>1095.70</td>
<td>30.82</td>
<td>31.03</td>
<td>2.36</td>
<td>0.40</td>
<td>0.95</td>
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<td>-2.211</td>
<td>-1.5625</td>
<td>0.3987</td>
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<tr>
<td>Wipro</td>
<td>2015</td>
<td>631.88</td>
<td>545.65</td>
<td>22.66</td>
<td>11.36</td>
<td>0.03</td>
<td>-0.87</td>
<td>-0.57</td>
<td>0.25</td>
<td>-0.1166</td>
<td>0.9189</td>
<td>0.0182</td>
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<tr>
<td></td>
<td>2014</td>
<td>562.02</td>
<td>510.62</td>
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<td>15.66</td>
<td>-0.30</td>
<td>-0.46</td>
<td>0.62</td>
<td>0.03</td>
<td>-0.0461</td>
<td>0.2731</td>
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<tr>
<td></td>
<td>2013</td>
<td>427.47</td>
<td>343.16</td>
<td>23.12</td>
<td>8.6</td>
<td>0.19</td>
<td>-0.68</td>
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<td>-0.19</td>
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<td></td>
<td>2012</td>
<td>430.89</td>
<td>401.04</td>
<td>9.19</td>
<td>9.01</td>
<td>-1.24</td>
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<tr>
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<td>440.93</td>
<td>457.38</td>
<td>4.65</td>
<td>14.01</td>
<td>-0.69</td>
<td>-1.00</td>
<td>0.07</td>
<td>-0.06</td>
<td>-1.5057</td>
<td>0.5718</td>
<td>0.4201</td>
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<tr>
<td>Hexaware</td>
<td>2015</td>
<td>303.93</td>
<td>271.56</td>
<td>21.24</td>
<td>11.32</td>
<td>-1.24</td>
<td>-0.10</td>
<td>-0.54</td>
<td>-0.92</td>
<td>-1.8642</td>
<td>0.5634</td>
<td>0.6364</td>
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<tr>
<td></td>
<td>2014</td>
<td>157.62</td>
<td>145.55</td>
<td>9.82</td>
<td>5.27</td>
<td>-1.48</td>
<td>0.21</td>
<td>0.20</td>
<td>0.41</td>
<td>-0.1769</td>
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<td>0.0252</td>
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<tr>
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<td>2013</td>
<td>86.76</td>
<td>80.25</td>
<td>3.93</td>
<td>2.36</td>
<td>-0.95</td>
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<td>0.47</td>
<td>0.3401</td>
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<tr>
<td></td>
<td>2012</td>
<td>122.34</td>
<td>121.80</td>
<td>6.62</td>
<td>3.54</td>
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<td>-0.64</td>
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<td>0.7735</td>
</tr>
<tr>
<td>Tech Mahindra</td>
<td>2011 &amp; 2012</td>
<td>66.39 &amp; 70.25</td>
<td>4.69 &amp; 6.99</td>
<td>3.14 &amp; 2.69</td>
<td>2.14 &amp; 1.22</td>
<td>-0.12 &amp; -0.03</td>
<td>0.54 &amp; 0.47</td>
<td>1.03 &amp; 0.70</td>
<td>3.8369 &amp; 2.1194</td>
<td>0.8694 &amp; 0.7056</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Infosys</td>
<td>2015</td>
<td>2556.86</td>
<td>2551.41</td>
<td>66.60</td>
<td>50.52</td>
<td>-0.23</td>
<td>-1.31</td>
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<td>2014</td>
<td>2471.31</td>
<td>2624.61</td>
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<td>68.65</td>
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<td>-0.123</td>
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<tr>
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<td>2013</td>
<td>1541.96</td>
<td>1458.18</td>
<td>29.93</td>
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<td>-0.64</td>
<td>0.21</td>
<td>-0.60</td>
<td>-0.97</td>
<td>0.4359</td>
<td>2.8265</td>
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<tr>
<td></td>
<td>2012</td>
<td>1331.47</td>
<td>1305.46</td>
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<td>16.10</td>
<td>-1.01</td>
<td>-0.74</td>
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<td>-0.10</td>
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<td>0.46</td>
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<td>997.85</td>
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<td>35.40</td>
<td>-0.79</td>
<td>-1.01</td>
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<td>0.01</td>
<td>-2.7431</td>
<td>-3.0281</td>
<td>0.49</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

Descriptive Analysis

Mean

The mean values for TCS shows that for the year 2015, 2014 and 2012, the mean value is greater before the announcement of the dividend comparatively to mean value after the dividend announcement, which implies that the shareholders have sensed the information regarding dividend policy. For the year 2013 and 2011, the mean value is greater only after the announcement of dividend, which implies the hidden announcement regarding dividend.

Table-1 states that in 2012-2015, the mean values are higher before the dividend is announced which states that the shareholders have sensed the information regarding the announcement of dividend leading to rise in the share price in Wipro. In the year 2011, there is no indication of dividend announcement and hence mean value is less before the dividend is announced.

The Mean values of Hexaware shows that for the year 2012-2015, the mean value is greater before the announcement of the dividend comparatively to mean value after the dividend announcement, which implies that the shareholders have received the information regarding dividend payment. For the year 2011, the mean value is greater only after the dividend announcement, which implies the silent announcement regarding dividend.

The Mean values of Tech Mahindra show that, in the year 2015 the mean value is greater before announcement of the dividend; which implies that the shareholders sensed the information regarding dividend payment. During the year 2011-2014, the mean value is greater after the announcement of the dividend because of the hidden announcement regarding dividend.

Table-1 validates that for the year 2015, 2013 and 2012, the mean value is greater before the announcement of the dividend comparatively to the mean value after the dividend announcement in Infosys, which implies that the shareholders have sensed the information regarding dividend policy. For the year 2014 and 2011, the mean value is greater only after the announcement of dividend, which implies the hidden announcement regarding dividend.

Standard Deviation

The table-1 states that for the years 2015, 2013 and 2012 the risk is high only before the announcement of dividend and the risk has reduced after the dividend is paid in TCS. For the year 2014 and 2011, the risk is high after the announcement of the dividend. In the year 2015 and 2013, the risk is high before the dividend is announced and in 2014, 2012 and 2011, the risk is less before the dividend is announced in Wipro.

Table-1 shows that during the year 2011-2015 for Hexaware, the risk is high only before the announcement of the dividend and the risk has reduced after the dividend is paid.

The Standard Deviation of Tech Mahindra shows that in the year 2015 and 2014, the risk is high after the announcement of dividend. In the year, 2013, 2012 and 2011 the risk is high before the announcement of the dividend.

The Standard Deviation of Infosys for the year 2015, 2012 and 2011, the risk is high only before the announcement of dividend and risk is reduced after the dividend is paid. For the year 2014 and 2013, the risk is high after the announcement of the dividend.

Kurtosis

The table-1 further show that during the period 2011-2015, before and after the dividend is announced the kurtosis values of all the stock markets are less than 3 for TCS. Therefore, the distribution is platykurtic, pressuring to be less risky asset.

Table-1 further states that during the period 2011-2015, before and after the dividend is announced for Wipro, the kurtosis values of all the stock markets are less than 3. Therefore, the distribution is platykurtic, and it less risky.

Table-1 depicts for Hexaware that during the period 2011-2015, before and after the dividend is announced the kurtosis values of all the stock markets are less than 3. Therefore, the distribution is platykurtic pressuring the market to be less risky asset.

The Kurtosis values of Tech Mahindra show that during the period 2011-2015, before and after the dividend is announced the kurtosis values of all the stock markets are less than 3. Therefore, the distribution is platykurtic pressuring to less risky asset.

The Kurtosis of Infosys show that during the period 2011-2015, before and after the dividend is announced the kurtosis values of all the stock markets are less than 3. Therefore, the distribution is platykurtic, pressuring to be less risky asset.

Skewness

During the year 2014 before the dividend is announced for TCS, the skewness values is less than zero and the distribution is negatively skewed and the remaining years are greater than zero and the distribution is positively skewed. In the year 2015 and 2011 after the dividend announced by TCS the skewness is greater than zero and hence the distribution is positively skewed. In addition, the remaining year the skewness value is less than zero and the distribution is negatively skewed.

Table-1 affirms for Wipro that during the year 2015 and 2013 before the dividend is announced, the skewness value is less than zero, the distribution is negatively skewed, the remaining years are greater than zero, and the distribution is positively skewed. In the year 2015 and 2014 after the dividend announced the skewness is greater than zero and hence the distribution is positively skewed. In addition, the remaining year the skewness value is less than zero and the distribution is negatively skewed.

Table-1 portrays that during the year 2015 and 2012, before and after the announcement of the dividend the skewed value is less than zero and the distribution is negatively skewed for Hexaware. During the year 2014 and 2013, before and after the announcement of the dividend the skewed value is greater than zero and the distribution is positively skewed. In the year 2011, before the announcement of dividend, it is negatively skewed and after the announcement, it is positively skewed.

The Skewness of Tech Mahindra in the year 2011, before and after the announcement of the dividend the skewed value is greater than zero and the distribution is positively skewed.

Table-1 ascertains that Infosys; in the year 2015, 2013 and 2011 before the dividend is announced the skewness value is less than zero and the distribution is negatively skewed and the remaining year are greater than zero. In the year 2011, after the dividend is announced the skewness is greater than zero and hence the distribution is positively skewed. In addition, the remaining year the skewness value is less than zero and the distribution is negatively skewed.
Beta Value

Table-1 show that in the years 2015 and 2012 the beta value is positive both after and before the announcement of dividend in TCS. It shows that during this period, the share price goes with the index and most cases the share price is defensive in nature.

The Beta value for Wipro shows that during the year 2014 and 2011 the beta values are positive and greater once after the dividend is announced and the risk is less. It shows that during this period, the share price goes with the index and most cases the share price is defensive in nature.

Hexaware’s Beta values in Table-1 show that in the 2013, the beta value is positive both after and before the announcement of the dividend were risk is less. It shows that the share price goes with the index and in most cases; the share price is defensive in nature.

Table-1 illustrates that Tech Mahindra in the year 2013, both before after the dividend is announced the beta value is negative which explains that the risk is high. In the year 2015, both before after the dividend is announced the beta value is positive this explains that the risk is less.

The beta value of Infosys is positive only in the year 2015 and 2013 before the dividend is announced. It shows that during this period, the share price goes with the index and most cases the share price is defensive in nature.

R²

Table-1 shows that the R² value before and after the dividend is announced, is less than 85% in TCS, which shows that it is less explained in all the years.

The R² value of Wipro before and after the dividend is announced is less than 85%, which shows that it is less explained in all the years.

The R² value of Hexaware before and after the dividend is announced is less than 85%, which shows that it is less explained in all the years.

Table-1 show that Tech Mahindra in the year 2013, the R² value before and after the dividend is announced is more than 85%, which shows that it is more explained.

The R² value of Infosys before and after the dividend is announced is less than 85%, which shows that it is less explained in all the years.

Correlogram Analysis

Autocorrelation is called serial correlation or cross-autocorrelation. It is the cross-correlation of a signal with itself at different points in time. Informally, it is the similarity between observations as a function of the time lag between them. It is a mathematical tool for finding repeating patterns, such as the presence of a periodic signal obscured by noise, or identifying the missing fundamental frequency in a signal implied by its harmonic frequencies. Many time series data sets exhibit time interdependency among their values. This is important to detect and will eventually factor in to improve the forecast quality of the model.

Table-2: Correlogram of TCS for the Year 2015

<table>
<thead>
<tr>
<th>Sample</th>
<th>30</th>
<th>Included observations: 29</th>
</tr>
</thead>
<tbody>
<tr>
<td>Autocorrelation</td>
<td>Partial Correlation</td>
<td>AC</td>
</tr>
<tr>
<td>1</td>
<td>0.112</td>
<td>0.112</td>
</tr>
<tr>
<td>2</td>
<td>-0.061</td>
<td>-0.074</td>
</tr>
<tr>
<td>3</td>
<td>-0.172</td>
<td>-0.160</td>
</tr>
<tr>
<td>4</td>
<td>-0.046</td>
<td>-0.014</td>
</tr>
<tr>
<td>5</td>
<td>-0.037</td>
<td>-0.052</td>
</tr>
<tr>
<td>6</td>
<td>0.043</td>
<td>0.022</td>
</tr>
<tr>
<td>7</td>
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<td>0.024</td>
</tr>
<tr>
<td>8</td>
<td>0.156</td>
<td>0.133</td>
</tr>
<tr>
<td>9</td>
<td>0.042</td>
<td>0.055</td>
</tr>
<tr>
<td>10</td>
<td>0.123</td>
<td>0.256</td>
</tr>
<tr>
<td>11</td>
<td>0.246</td>
<td>0.268</td>
</tr>
<tr>
<td>12</td>
<td>0.176</td>
<td>0.056</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation
The correlograms above depict that there is white noise indicating stationary fluctuation of share prices before the announcement of dividend and that there is grey noise indicating non-stationary fluctuation of share prices after the dividend is announced.

**FINDINGS**

The mean value of all the companies chosen explain whether the shareholders have received the information regarding announcement of dividend or not.

The share price movement fluctuates depending upon the announcement of dividend. The purchase of share increases when the shareholder receives information regarding the dividend payment. In certain cases when the dividend announcement is kept hidden, the shareholder shows interest in purchasing the shares after the dividend announcement.

The risk of the company may be high before the dividend is announced and the risk reduces once after the dividend is paid. In TCS, for the years 2015, 2013 and 2012 the risk is high only before the announcement of dividend and the risk has reduced after the dividend is paid. In HTL, during the year 2011-2015, the risk is high only before the announcement of the dividend. In Wipro in the year 2015 and 2013, the risk is high before the dividend is announced. In Tech Mahindra in the year 2015 and 2014, the risk is high after the announcement of dividend.

For all the companies; TCS, HTL, Wipro, Tech Mahindra and Infosys the kurtosis value is less than 3 and hence it is platykurtic. The positive beta value proves that the share price goes with the index and in most case share price is defensive in nature. The $R^2$ value before and after the dividend is announced, is less than 85%, which shows that it is less explained in all the years and vice versa.

The correlogram depicts a white noise/stationary performance depending upon the fluctuation of share price. In TCS, correlogram depicts a white noise in all the years except in the year 2015 where there is grey noise. In Wipro, the correlogram depicts a white noise / stationary performance depending upon the fluctuation of share price in all the years. In HTL, correlogram depicts a white noise in all the years except in the year 2013 where there is grey noise that depicts fluctuating share prices. In Infosys, correlogram depicts a white noise in all the years except in the year 2015 and 2012 where there is grey noise. In Tech Mahindra, correlogram depicts a white noise in all the years except in the year 2011, 2012 and 2013 where there is grey noise that depicts fluctuating share prices.

**SUGGESTIONS**

The final dividends of the company are issued at various dates depending upon the company. The dividend policy also differs from company to company. The dividend policies have great impact on the share price fluctuations. The shareholders mainly aim for the dividend in order to get good return on their investment.

In certain cases, the news regarding the announcement of dividend spreads through word mouth by either the brokers or other persons. In that case, the price of shares tends to increase. In certain cases were the dividend is kept hidden by the companies, after the announcement of dividend is made the company share price may rise. This because of the dividend paid and the performance of the company for a period and expecting the same to be in future.

There are also chances of rumors to spread false news about the dividend announcement, which also have effect on the share price. Investors should look at companies that have consistently delivered earnings growth and good corporate governance. Never invest in a firm without understanding the dynamics of the business.
A return on investment in shares does not depend on the number of shares, but on the performance of the company. An investor should review his portfolio at regular intervals. If the outlook of a company improves, or at least remains stable, one should buy or hold the stock. The company’s consistent past financial performance provides investors with confidence in their future performance. The investor should also be to access the future risk. The announcement is also one of the reasons for share price fluctuations.

**CONCLUSION**

The objective of the study shows the impact of dividend policy on the share price volatility for the companies TCS, Wipro, HTL, Tech Mahindra and Infosys. The findings suggest that the larger the size of the company, the greater the company needs to face with the volatility of shares. The announcement of dividend policy is not only the reason for share price volatility. There also other economic factors like company policy, economic policy, political policies etc. The dividend policy should also be in the way that satisfies the shareholders so that the shares are bought and sold in the market.

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A STUDY AND APPLICATION OF ARIMA FOR PREMIUM CURRENCIES TRADED IN INDIA

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ABSTRACT

Foreign exchange market is largest market in the world in terms of trade volume. This trade and investments need tools to assess the future events i.e. fundamental and technical analysis, which are based on historic prices. Contrary to these methods, Random Walk Hypothesis was derived from weak form of efficiency. To test this hypothesis, the study undertakes exchange rate of four currencies namely, INR/USD, INR/EURO, INR/GBP and INR/YEN from 1987 to 2016 (up to march). To test the hypothesis and forecast the future exchange rates ARIMA model is applied along with correlogram and Augmented-Dickey Fuller (ADF) test. To analyze the impact of country’s interest rate and inflation rate on exchange rate respective country rates were considered for same time and regression analysis was made to deduce the results. The result showed that the exchange rate could be predicted using ARIMA model, which can be used by traders and investors for decision with respect to foreign trade and investment. The regression results establish the proof that inflation and interest rates influence the exchange rate fluctuations and hence, its movement can be assessed.

KEYWORDS

Random Walk Theory, ARIMA, ADF Test, Correlogram etc.

OBJECTIVES

- To test the Random walk hypothesis using ARIMA model in foreign exchange market with respect to four currencies INR / USD, INR / EURO, INR / GBP and INR / YEN.
- To assess the relationship of respective country’s interest and inflation rate on exchange rate of the four currencies considered using Simple and Multiple Regression.
- To predict and forecast the future values of the exchange rate of four currencies mentioned above.

REVIEW OF LITERATURE

Young H. Kim (2015), the authors of this paper have analyzed the behaviour of weekly stock prices of 473 Fortune 500 firms and 594 S&P small cap 600 firms over forty years. The paper uses Box-Jenkins ARIMA model for time series analysis and forecasting using ForecastPro® XE software to analyze the random walk theory. Each companies are individually analyzed and it was found that 146 Fortune 500 companies (30.87%) and 229 (38.55%) S&P 600 firms do not follow random walk. It was observed in the paper that Fortune 500 firms and S&P 600 firms significantly differ with respect to the proportions of random walk, MA pattern and mixed ARMA pattern. The author uses ARMA model efficiently for evidence of random walk hypothesis and returns to a conclusion that random walk hypothesis should be rejected.

Tafadzwa T. Chitenderu (2014), this paper tests the monthly time series of All Share Index (ALSI) in Johannesburg Stock Exchange (JSE) for random walk hypothesis. Unit root tests and autocorrelation test was employed with further ARIMA (1, 1, 1) model was fitted. The result showed that JSE price index followed random walk process. It was found by the authors that ALSI follows random walk hypothesis with strong evidence of a wide variance between forecasted and actual values. To further validate the findings, variance test ratio was used that resulted in non-rejection of random walk hypothesis. This concluded that JSE is on weak form level of efficiency.

Radha S., the paper tried to forecast short-term interest rates using ARCH, ARMA-GARCH and ARMA-EGARCH models. In order to forecast the daily data of overnight MIBOR and weighted average call money, fortnight data of commercial paper return from January 1999 to June 2004 and weekly data of implicit yield of 91 Day Treasury bill from Jan 1993 to Jun 2004 was used. It was noted in the result that short-term interest rates have volatility clustering effect captured by ARCH? EGARCH model. AIMA and random walk model were not good fit and it was identified that ARIMA - GARCH model is appropriate model for forecasting implicit yield of 91 Day Treasury bill, call money and overnight MIBOR. An appropriate model for commercial paper is ARIMA-EGARCH. This model is suggested to be used by traders and investors.

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Andrew W. Lo (1988), the author in this article has used size-based portfolios in order to determine random walk theory evidence. Volatility based specification test has been used on weekly data from American stock exchange. The study tries to determine the proper stochastic model fit to study the random walk hypothesis model. The study after performing tests has rejected the model. The rejection of the model was mostly due to small stocks and Black Scholes model for asset pricing affects the mean-reverting model in rejecting random walk theory. The sample was taken from 1962-1985, for which the model was entirely rejected. This confirms the idea of non-existence random walk concept.

Barine Michael (2014), the authors in this study have taken All Price Index (API) data of shares of listed forms on Nigerian Stock Exchange from Jan 2000 to Dec 2012. Augmented Dickey Fuller Test (ADF) is used to determine absence of randomness in the data using ADF statistic and Durbin-Watson value. It was concluded that Nigerian Stock Exchange does not follow random walk. Further findings suggested that price trend of equities was determined in advance using fundamentals and these market inefficiencies worsen the absence of random walk movements in share prices. Hence, availability of less information may affect investor decision as assumed in the paper.

Amelie Charles (2013), the paper examines the random walk hypothesis in Shanghai and Shenzhen stocks using data from 1992-2007. The hypothesis was tested using new multiple variance test ratio- Whang-Kim subsampling, Kim’s wild bootstrap tests, and multiple Chow-Denning tests. The study examined the weak form of efficiency of Chinese Stock market and changes in relationship between the stock market and banks. The shares were divided into Class A and Class B, where Class A shares are more efficient and Class B depict weak form of efficiency. In addition, Class B did not follow random walk hypothesis and is significantly inefficient. It is noted in this study that variance test ratio provides reasonable evidence for absence of random walk hypothesis.

Christopher Bellgard, the paper discusses on foreign exchange rate of Australian-US dollar data forecasting in terms of Random Walk Hypothesis (RWH). The study uses techniques such as Random Walk, Exponential Smoothing, Auto Regressive Integrated Moving Average and Artificial Neural Networks. The paper also adds to an increasing body of evidence against random walk through evidences such as FX differences are leptokurtic, ANNs and hybrid ANNs can yield higher profits than linear models and technical analysis is widely used by many investors. The result directed towards the conflicts with Random Walk Hypothesis and Weak form of efficiency indicating that exchange rate is not independent of past changes.

Ankita Mishra (2014), the paper tries to investigate the random walk hypothesis for Indian Stock market using 19 years of monthly data on six indices from the National Stock Exchange (NSE) and Bombay Stock Exchange (BSE) namely, NSE Nifty, NSE Nifty Junior, NSE Defty, NSE CNX, BSE SENSEX and BSE CNX from January 1995-December 2013. It was found from the study that it is important to use structural breaks and to accommodate heteroscedasticity when testing for random walk with high frequency financial data. The Indian Stock indices were identified as mean reverting. In the LM test, Narayan, and Popp unit root test with two breaks there was strong evidence of a random walk and trends failed to reject the unit root null for any of the indices.

D. Mbulelu (2013), this paper studies the random walk hypothesis in Zambian foreign exchange market utilizing daily nominal United States dollar/ Zambian kwacha (USD/ZMK) exchange rate returns from August 2003 to December 2012. The Author has used conventional variance ratio test and Wright’s non-parametric ranks and signs based variance test for analysis. The result rejected the random walk hypothesis-suggesting traders and investors can use fundamental and technical analysis to earn higher than average returns.

Aktham Maghyereh (2003), the article by this researcher is titled “the random walk hypothesis and evidence from the Amman (Jordan) Stock Exchange” which investigates random walk model using ARCH and GARCH model by studying the dependence and identity distributed. The ARCH and GARCH model are good models to study the non-linearity in the daily stock price data to determine the random walk approach. The study gives evidence that non-linear dependence in stock prices is caused by non-stationary data. This research shows that fluctuations are stock prices are not linear and cannot be easily predicted and hence, analysis such as fundamental and technical are useful for investing.

RESEARCH GAP

It was observed in the above research papers, that the authors study on random walk hypothesis was limited mostly to stock market. The authors have also applied other tests except ARIMA to evaluate random walk hypothesis and forecasts of the variables has not been made in the study. Indian foreign exchange market has not been studied in any of the above articles. Hence, this gives a scope to examine the existence of random walk theory in Indian foreign exchange market using ARIMA model using four currencies traded in India namely, US Dollar, Japanese Yen, Euro and Great Britain Pound.
**RESEARCH PROBLEM**

This study intends to study the existence of Random Walk Theory in Foreign Exchange Market with reference to four currencies namely, US Dollar, Japanese Yen, Euro and Great Britain Pound. The problem is examined based on the concept of “beat the market” i.e. where investments outperform the benchmark expected return. The research aims to inspect the utility of ARIMA model to forecast the exchange rates and determine the relationship with respective country’s interest rate and inflation rate on exchange rate to undertake buy / sell decisions and reach to a conclusion based on the concept of “beat the market” and the above mentioned analysis to accede or expostulate Random Walk Theory in Indian Foreign Exchange Market.

**RESEARCH METHODOLOGY**

Univariate time series is a sequence of measurements of the same variable collected over time of which the measurements are made at regular time intervals. One of the characteristic of time series is a list of observations where ordering matters as there is dependency and changing the order can change the meaning of the data. Stationary process is an underlying assumption for many statistical procedures used in time series; non-stationary data is converted to become stationary. A stationary time series is one whose statistical properties such as mean, variance, autocorrelation, etc. are all constant over time. Non-stationary data is converted to stationary using differencing technique. Transformation such as logarithms can help to stabilize the variance of stationary data is converted to become stationary. A stationary time series is one whose statistical properties such as mean, variance, autocorrelation, etc. are all constant over time. Non-stationary data is converted to stationary using differencing technique. Transformation such as logarithms can help to stabilize the variance of

Predicted value of $Y = a$ constant and/or a weighted sum of one or more recent values of $Y$ and/or a weighted sum of one or more recent values of the errors. The general forecasting equation is:

$$\hat{y}_t = \mu + \phi_1 y_{t-1} + \ldots + \phi_p y_{t-p} - \theta_1 e_{t-1} - \ldots - \theta_q e_{t-q}$$

In the undertaken study, gretl software is used to apply the ARIMA model and stationarity tests. This is an open source statistical package, mainly for econometrics. The name is an acronym for Gnu Regression, Econometrics and Time series Library. The data used for the study include four foreign currencies Euro, Great Britain Pound, Japanese Yen and US Dollar from the year 1987-2016. The forecast of the value is from year 2017-2020. Multicollinearity (also collinearity) is a phenomenon in which two or more predictor variables in a multiple regression model are highly correlated, meaning that one can be linearly predicted from the others with a substantial degree of accuracy.

**ARIMA MODEL**

Euro Currency

**Figure-1.1: Arima Model (2,2,1) for Euro**

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Std. Error</th>
<th>z</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Const.</td>
<td>0.0136438</td>
<td>0.0701724</td>
<td>0.1944</td>
</tr>
<tr>
<td>$\phi_1$</td>
<td>-0.234756</td>
<td>0.180985</td>
<td>-1.2971</td>
</tr>
<tr>
<td>$\phi_2$</td>
<td>-0.364732</td>
<td>0.180678</td>
<td>-2.0187</td>
</tr>
<tr>
<td>$\theta_1$</td>
<td>-1</td>
<td>0.112022</td>
<td>-8.9268</td>
</tr>
</tbody>
</table>

Mean Dependent Var. = -0.149283, S.D. Dependent Var. = 8.017921
Mean of Innovations = 0.401521, S.D. of Innovations = 4.728132
Log-Likelihood = -85.51899, Akaike Criterion = 181.0380
Schwarz Criterion = 187.6990, Hannan-Quinn = 183.0743

**Table-1.1: Various Arima Model Orders (p,d,q) for Euro**

<table>
<thead>
<tr>
<th>ARIMA (p, d, q)</th>
<th>Akaike Criterion</th>
<th>Schwarz Criterion</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARIMA (1,2,1)</td>
<td>182.6569</td>
<td>187.9857</td>
<td>0.101449</td>
</tr>
<tr>
<td>ARIMA (1,2,2)</td>
<td>184.6374</td>
<td>191.2984</td>
<td>0.119176</td>
</tr>
<tr>
<td>ARIMA (2,2,1)</td>
<td>181.0380</td>
<td>187.6990</td>
<td>0.0701724</td>
</tr>
<tr>
<td>ARIMA (2,2,2)</td>
<td>184.6600</td>
<td>192.6532</td>
<td>0.0914878</td>
</tr>
</tbody>
</table>

**Sources: Authors Compilation**
From Figure-1.1 gives the ARIMA model test result for Euro data from 1987-2016. The ARIMA - p,d,q values are taken as 2,2,1 respectively which represents the auto regression and moving averages order best suited for the concerned ARIMA model of EURO data. Table-1.1 shows the varied combination of Auto Regression (AR) order and Moving Averages order with integration i.e. differencing which is denoted by p,q and d respectively. Four combinations are used to verify the best-suited model. To verify the model two important criteria are used namely, Akaike criterion and Schwarz criterion that determine the quality of the various model applied. The best model is determined by the former and latter’s lowest value. In the table, Arima model (2,2,1) shows the lowest values of both the criteria. Hence, it is taken as best ARIMA model. Hence, in this model p=2, d=2 and q=1. Figure 5, gives the ARIMA model (2,2,1) results. It can be observed that the p-value 0.0435 and less than 0.001 are less than 0.05, which shows the significance of the model. It was also observed that in comparison to other models, standard error was relatively low for ARIMA (2,2,1) model at 0.071. Therefore, the above data can be used for forecasting.

Forecast of Euro from 2017-2020
For 95% confidence intervals, $z(0.025) = 1.96$

**Graph-1.1: Forecast of Euro from 2017-2020**

![Graph 1.1: Forecast of Euro from 2017-2020](image)

It can be observed from above data, the future forecast of Euro from 2017-2020 after application of ARIMA model. The forecast returns four yearly values along with error. The 95% interval is taken during the forecast. Graph 1.1 shows the forecasted value along with the Euro data. This proves that the forecast obtained by this test can be used to predict the movement of exchange rate of EURO and hence leading, lagging decision and trading decision can be undertaken. This disproves the existence of random walk in exchange rate movements.

**US DOLLAR**

**Figure-2.1: Arima Model (1, 1, 1) for USD**

Model 1: ARIMA, using observations 1988-2016 (T = 29)
Dependent variable: (1-L) USD
Standard errors based on Hessian

<table>
<thead>
<tr>
<th>Coefficient</th>
<th>Std. Error</th>
<th>z</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Const.</td>
<td>1.90211</td>
<td>0.574003</td>
<td>3.3138</td>
</tr>
<tr>
<td>phi_1</td>
<td>-0.279281</td>
<td>0.928801</td>
<td>-0.3007</td>
</tr>
<tr>
<td>theta_1</td>
<td>0.416964</td>
<td>0.878871</td>
<td>0.4744</td>
</tr>
</tbody>
</table>

Mean Dependent Var. | 1.887095 | S.D. Dependent Var. | 2.872580 |
Mean of Innovations | 0.004267 | S.D. of Innovations | 2.795866 |
Log-Likelihood     | -70.97763 | Akaike Criterion   | 149.9553  |
Schwarz Criterion  | 155.4244  | Hannan-Quinn       | 151.6681  |

**Sources:** Authors Compilation
Table-2.1: Arima Model (p,d,q) based Criteria

<table>
<thead>
<tr>
<th>ARIMA (p, d, q)</th>
<th>Akaike Criterion</th>
<th>Schwarz Criterion</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARIMA (1,1,1)</td>
<td>149.9553</td>
<td>155.4244</td>
<td>0.574003</td>
</tr>
<tr>
<td>ARIMA (2,1,1)</td>
<td>151.9548</td>
<td>158.7913</td>
<td>0.575907</td>
</tr>
<tr>
<td>ARIMA (1,1,2)</td>
<td>151.9551</td>
<td>158.7916</td>
<td>0.574816</td>
</tr>
<tr>
<td>ARIMA (2,1,2)</td>
<td>153.6020</td>
<td>161.8057</td>
<td>0.654474</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

It can be observed in the table 2.1 that ARIMA (1,1,1) is the best model for USD data, as the Akaike and Schwarz Criteria are lowest for this model along with standard error being the least comparatively. In ARIMA (1,1,1) it can be observed that the p-value is lower than 0.05. Hence, it can be interpreted that the above data can be used for further forecasting.

Forecasting of USD Exchange Rate Data from 2017 to 2020

For 95% confidence intervals, $z(0.025) = 1.96$

Graph-2.1: Forecasted Value of USD from 2017-2020

Sources: Authors Compilation

It can be observed from the above data that using ARIMA model the future forecasts of USD exchange rates can be made. The above data shows the predicted values and forecasted values of USD from 2017-2020. The graph 2.1 shows the graphical representation of the data with 95% interval. This proves the contrast to random walk theory where the forecasted value of currency can be further used for making trading, leading and lagging decisions by investors and traders in USA. This provides a strong evidence towards opposition of the random walk theory.

JAPANESE YEN

Model 4: ARIMA, using observations 1989-2016 (T = 28)
Dependent variable: (1-L)^2 YEN
Standard errors based on Hessian

Figure-3.1: Arima (2,2,2) Model Yen Data
It can be observed in figure 3.1 the results of ARIMA (2,2,2) model. The values in the model are less than the level of significance indicating the data can be used for forecasting. The best ARIMA model to be used is determined by three criteria Akaike Criterion, Schwarz Criterion and standard error. The model with lowest values of the three criteria is selected as the best model. Hence, ARIMA (2,2,2) is used for the research though Akaike and Schwarz Criteria is slightly higher when compared to the ARIMA (1,2,1) model, the standard error for the former model is lower.

Forecast Values of Yen from 2017-2020 after Arima Model

For 95% confidence intervals, \( z(0.025) = 1.96 \)

The above data shows the forecasted values of Yen data from 2017-2020. After the ARIMA model application, the forecasted value is generated. Graph 3.6 shows the graphical representation of the forecasted value. The users can use these values generated for investing, trading, leading and lagging decisions. This is in conflict to the random walk theory.

Great Britain Pound

Model 9: ARIMA, using observations 1989-2016 (\( T = 28 \))

Dependent variable: \((1-L)^2\) GBP

Standard errors based on Hessian
Figure 4.1: Arima (3,2,2) Model of GBP Data after Differencing

<table>
<thead>
<tr>
<th></th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>z</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Const.</td>
<td>−0.172553</td>
<td>0.031421</td>
<td>−5.4916</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>phi_1</td>
<td>0.850458</td>
<td>0.187119</td>
<td>4.5450</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>phi_2</td>
<td>−0.181954</td>
<td>0.229465</td>
<td>−0.7929</td>
<td>0.4278</td>
</tr>
<tr>
<td>phi_3</td>
<td>−0.346551</td>
<td>0.204028</td>
<td>−1.6985</td>
<td>0.0894</td>
</tr>
<tr>
<td>theta_1</td>
<td>−1.98704</td>
<td>0.207609</td>
<td>−9.5710</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>theta_2</td>
<td>0.999998</td>
<td>0.207601</td>
<td>4.8169</td>
<td>&lt;0.0001</td>
</tr>
</tbody>
</table>

Mean Dependent Var. −0.174057  S.D. Dependent Var. 5.936970
Mean of Innovations −0.022330  S.D. of Innovations 3.566444
Log-Likelihood −80.17949  Akaike Criterion 174.3590
Schwarz Criterion 183.6844  Hannan-Quinn 177.2099

Sources: Authors Compilation

Table 4.1: Arima Model (p,d,q) based Criteria

<table>
<thead>
<tr>
<th>ARIMA (p, d, q)</th>
<th>Akaike Criterion</th>
<th>Schwarz Criterion</th>
<th>Standard Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>ARIMA (1,2,1)</td>
<td>174.8741</td>
<td>180.2029</td>
<td>0.126027</td>
</tr>
<tr>
<td>ARIMA (2,2,1)</td>
<td>176.5950</td>
<td>183.2560</td>
<td>0.115622</td>
</tr>
<tr>
<td>ARIMA (1,2,2)</td>
<td>176.7974</td>
<td>183.4584</td>
<td>0.123902</td>
</tr>
<tr>
<td>ARIMA (3,2,2)</td>
<td>174.3590</td>
<td>183.6844</td>
<td>0.0314210</td>
</tr>
<tr>
<td>ARIMA (2,2,3)</td>
<td>178.7322</td>
<td>188.0576</td>
<td>0.112262</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

It can be observed in the ARIMA (3,2,2) model in figure 4.1 shows p-value is significant and hence the data can be used for forecasting. To arrive at the best ARIMA (p,d,q) model, Akaike and Schwarz criteria along with standard error is used. In ARIMA (3,2,2) model shows the lowest values of the criteria along with lowest standard error. Hence, the data best model is selected.

Forecast of Arima (3,2,2) Model for GBP from 2017-2020

For 95% confidence intervals, z(0.025) = 1.96

Graph 4.1: Forecasted Value Graph of GBP from 2017-2020

Sources: Authors Compilation
The above data shows the forecasted values of GBP from 2017-2020 after the application of ARIMA (3,2,2) model. It can be seen that the forecasted values can be used for many investment decisions, which could be predicted from this time series application. This negates the existence of random walk in currency trading. Graph 4.1 shows the forecasted values in graphical representation.

**CONCLUSION**

In the paper, random walk hypothesis is tested in Indian foreign exchange market using four exchange rates namely, INR/USD, INR/EUR, INR/JPY and INR/GBP from 1987-2016. The study also identifies the dependency of exchange rate on two macroeconomic factors i.e. Interest rate and Inflation rate of their respective countries. The study uses Correlogram to identify the stationarity of the data used by considering the ACF, PACF and Q-stat variables and Augmented Dickey-Fuller test is used to test whether data is stationary or non-stationary using p-value and first order of autocorrelation. In the above study, all the four exchange rates from 1987-2016 is non-stationary and were observed to be random without constant mean and variance. Differencing method was used to make the data non-random. ARIMA models were used to study the significant model for forecasting; various ARIMA (p,d,q) model were tested based on Akaike, Schwarz and standard error criteria. The best model is used to study the significance of the data used for the analysis. It was found that for each set of data using the criteria was helpful to determine the best model. The best model was used to forecast the data. The forecasted values acts as an evidence for rejecting random walk hypothesis, as the these values can be used by foreign exchange traders and investors for taking decisions. Therefore, it is clear from the above study the random walk hypothesis can be basis for taking decisions by investors and traders such as leading, lagging, borrowing and lending. Fundamental and technical analyses are beneficial tools, which are used to determine the movement of exchange rates based on historic values and no existence of efficient market. The results can be concluded that by using above-mentioned tools of analysis it is possible to beat the market.

**SCOPE FOR FUTURE RESEARCH**

The study focuses only on the major four currencies considered in the above research namely, US Dollar, Japanese Yen, Euro and Great Britain Pound. The study can be further continued to other currencies and other global foreign exchange market. The research can also be used carried out using other statistical models to test the random walk hypothesis. The factors included for regression can be increased and the relation with exchange rates can be determined more efficiently.

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A STUDY ON RELATIONSHIP BETWEEN DIVIDEND POLICY AND THE VALUE OF THE FIRM

Pushpa BV. 24 Dr. Hemanth Kumar S. 25

ABSTRACT

One of the main objective of a business enterprise is to maximize shareholders’ wealth. Maximization of wealth happens when the returns of the shareholders is maximized. Shareholders’ wealth is represented in the market price of the company’s common stock, which, in turn, is the function of the company’s investment, financing and dividend decision. The optimal dividend policy is the one that maximizes the company’s stock price, which leads to maximization of shareholders’ wealth, thereby ensures more rapid economic growth, and enhances firm’s value. Lintner’s ‘study about relevance of dividends shows that the firms set long-term target dividend payout ratios. Establishing relevance or irrelevance of dividend is a subject of debate. Some economists propounded relevance of dividends (Gordon and Walter) and some irrelevance of dividends (Modigliani and Miller). However, the impact of a firm’s dividend policy on its shareholders’ wealth is still unresolved. The present study is intended to study how far the dividend payout has impact on shareholders' wealth in general; and in particular to study the relationship between the shareholders' wealth and the dividend payout and to analyze whether the level of dividend payout affects the value of the firm by taking into consideration companies selected from 5 different sectors listed on Bombay Stock exchange (BSE). From the study we can infer that there is no significant relation between Dividend payout ratio and shareholders wealth and thereby value of the firm.

KEYWORDS

Dividend Policy, Relevance of Dividends, Shareholder’s Wealth Maximization, Dividend Payout etc.

THEORETICAL BACKGROUND OF STUDY

Dividend decisions occupy a dominant role in the financial decisions taken by a finance manager in the companies. Dividend decision is nothing but deciding on the dividend payout ratio. Out of the profits earned by a company, a part of it will be transferred to the shareholders in the form of dividends. The portion of profits to be distributed to shareholders will be decided in the resolution passed in the meeting of BOD. This may be paid as a percentage determined on the share capital contributed by them or at a predetermined amount per share. Dividend payout ratio is a very important part of dividend decision of a company. The payout ratio will act as a very important indicator affecting shareholders decisions. Companies always try to make a balance between dividends to be paid and retained earnings. Payment of dividend is desirable because it affects the goodwill of the firm in the market on the one hand, and on the other, it acts as an incentive to shareholders and motivate them to retain their investments in the company and earn reasonable returns in the future. Companies prefer to go for more of a retained earnings or ploughing back of profits as an important source of internal financing. They would definitely try to use these funds for future financing requirements at a lower cost of capital than go for higher dividend payout ratio and depend on external borrowing to finance future requirements. Although both-expansion and payment of dividend-are desirable, these two are in conflicts. The objective of any dividend policy should be to increase the shareholder’s return. Shareholder’s return has two components; dividends and capital gains. There are many reasons for paying dividends and many reasons for not paying dividends.

Hence, ‘dividend policy’ is controversial. A higher pay out of dividend means lower retained earnings, which may affect the growth of the firm and perhaps a lower market price per share. The decision becomes more critical especially when there exists a market opportunity which the firm can use it for its advantage of growth and reaping profits. If the profits earned is distributed to investors then the retained earnings to that extent will be reduced which will result in increasing debt to finance the investment opportunity. On the other hand, the investor’s requirement also must be satisfied by providing the optimum dividend. All these factors, which go through the minds of the shareholders, will be reflected in the market price of the shares. Thus, the dividend decision is very vital to any organization.

There are various theories with respect to relevance or irrelevance of dividend on profits or shareholders response to dividends declared and paid by the firm. Among them the bird in the hand theory, dividend relevance theory by Gordon and Walter, Lintner’s theory, Tax preference theory, and Modigliani and Miller’s dividend irrelevance theory are prominent. The dividend irrelevance hypothesis, review, with no expenses or liquidation costs, accepts that an organization's profit arrangement is immaterial.

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The profit unimportance hypothesis demonstrates that there is no impact from profits on an organization's capital structure or stock cost. MM's dividend-irrelevance theory accept that speculators can influence their arrival on a stock paying little respect to the stock's profit. Overall, the profit is immaterial to a financial specialist, which means speculators think minimal about an organization's profit strategy when settling on their buying choice since they can recreate their own profit approach.

Review that the MM's profit immateriality hypothesis says that financial specialists can influence their arrival on a stock paying little heed to the stock's profit. Thus, a stockholder can develop his or her own particular profit arrangement. Suppose, from a speculator's point of view, that an organization's profit is too huge then financial specialist could then purchase more stock with the profit that is over the speculator's desires. Likewise, if, from a speculator's point of view, an organization's profit is too little, a financial specialist can offer a portion of the organization's stock to imitate the income the financial specialist anticipated. Thus, the dividend- irrelevance is insignificant to a financial specialist, which means speculators think minimal about an organization's profit arrangement since they can reenact their own.

LITERATURE REVIEW

Paul Asquith, David W. Mullins and Jr. (1983) the study takes into consideration 168 firms who had participated in payment of dividends to investigate the impact of dividends on stockholders' wealth. The result shows that shareholders wealth is not always impacted by events such as announcements of earnings and the excess return is positively related to the size of the initial payment. The results also indicates that other studies may have underestimated the effect of dividend increases. The findings for both initial and sub sequent dividends are consistent with the view that dividends convey unique, valuable information to investors.

H. Kent Baker, Gail E. Farrelly and Richard B. Edelman (1985) Whether industry regulation influences dividend policy is a potentially rich issue, since it is quite conceivable that regulation creates incentives for management to adopt a different payout policy than non-regulated firms. A brief mention of Lintner's behavioral model of corporate dividend policy is done and efforts are made to understand whether management's perception of dividend policy is in agreement with Lintner's findings and to examine management's perception of signaling and clientele effects; and to determine whether managers in different industries share similar views about the determinants of dividend policy.

R. Azhagaiah & Sabari Priya ,N.(2008) The present paper considered various chemical Companies in India during 1996 – 1997 to 2005-2006 with an aim to analyze the impact of dividend policy on wealth of the shareholders. To measure the impact of dividend policy on shareholders’ wealth multiple regression method and stepwise regression models are used by taking DPS, RE, Price Earnings Ratio and Market Price as independent variables, and Market Price per Share as dependent variables. The study proves that the wealth of the shareholders is greatly influenced by variables such as growth in sales, profit percentage or margin, capital structure and investment decisions and also by companies’ decision on factors such as dividend on equity, interest on debt etc. the results of the study proves that dividend policy impacts shareholders wealth in organic companies and not is not influenced by dividend pay-out as far as inorganic Chemical Companies are concerned.

Johannes de Wet, & Mvita Mpinda, (2013) the study takes into consideration a sample of 46 companies listed on the Johannesburg Securities Exchange (JSE) between 1995 to 2010. To describe the short-run and long run dynamics or the adjustment of the co-integrated variables toward their equilibrium values VECM model was used. Results indicate that in the end, dividend yield is positively related to market price per share, while earnings per share do not have a significant impact on the market price per share.

Agnes Ong Shi Kai, Ow Yong Pui Yee & Tan Lai Lily (2014) The objective of the research paper is to determine the impact of dividend policy on shareholders’ wealth in Malaysia’s food producer sector. The observation of 295 companies is taking into account in the research started from the period of year 2008 to year 2012. The variables used in this research are dividend payout ratio, earning volatility, long-term debt ratio, and growth in assets, liquidity and profitability (ROE). Secondary data was used in this research and panel data was used to carry out the regression model. From the regression result, it found out that significant relationship exists between earnings volatility and profitability and there exist no significant relationship between dividend payout ratio and long-term debt ratio with EPS. On other hand, growth in assets and liquidity are not positively correlated with earnings per share.

Asma Tahir, Nain Tara Sarfarz Raja (2014) the present paper considered data from oil and gas exploration companies at Pakistan for the years 1999 to 2006. The data was analyzed using regression and correlation methods to find out the impact of dividend policy shareholders wealth. Dividend payout ratio, P/E ratio and BV/MV equity ratio were considered as independent variables and dependent variable being the holding period yield. To determine the proportion of explained variation in dependent variable, the coefficient of determination has been tested with the help of F test. The result indicates based on historical data and statistical analysis that correlation between independent variables and depended variable is very low for all companies showing insignificant relationship between them. Keyword: Dividend payout ratio, holding period yield, oil and gas, Price to earnings ratio, shareholder wealth.
Ansar, Butt & Shah (2015), the purpose of the study is to examine the relationship between shareholders wealth and dividend policy. Sample of 30 companies from Karachi stock exchange including companies from textile, cement and chemical sector were selected for the study. Shareholders wealth is measured with the market price of shares. Dividend per share, retained earnings, lagged price and return on equity was used as independent variables. The study used multiple regression model and shows that there is strong relationship between shareholders wealth and dividend policy. The shareholders wealth is increase by dividend policy in case of Pakistan.

**RESEARCH DESIGN**

Type of research is Descriptive research, which is quantitative in nature.

**STATEMENT OF PROBLEM**

There exist conflicting views with regard to the impact of dividend decisions on the value of the firm. Some are of the opinion that dividends do affect the market price of the shares while others argue it does not. Thus, there exists a knowledge gap. The research problem under consideration is as follows. “To what extent does the dividend decision affect the value of the different sector companies”. How share prices differ from each other? To what extent financial decisions of the management have a bearing on the shareholder’s wealth? These are some of the several questions that arise in the minds of the investors and other stakeholders of the firm. No matter what type of industry, growth perspective, capital structure etc. of a firm, the ultimate objective is maximizing shareholders’ wealth. Shareholders’ wealth or the total value of the firm being the final goal, all the decisions of the management is directed towards it. The next question arises is how to value these decisions. It is always believed that the market value of shares reflects the emotions and reactions of the investors to each decision the management takes. The major decision of financial management is the dividend decision, in the sense that the firm has to choose between distributing the profits to the shareholders and ploughing back the profits in to the business. The choice would obviously hinge on the effect of the decision on the maximization of shareholders wealth. A firm will be well advised to distribute the net profits as dividend if such a distribution results in maximizing the shareholders wealth; if not it would be better to plough back the profits into the business for future investment and growth.

**OBJECTIVES OF STUDY**

- To describe the samples selected in terms of the financial ratios.
- To explain the dividend distribution / retention and the debt equity patterns of the samples.
- To understand the relationship between the dividend policies of the company and the value of the firm.
- To study the effect of capital structure decision on the value of the firm.

**Hypothesis**

H\(_0\): Dividend Policies does not affect the value of the firm.
H\(_1\): Dividend Policies does affect the value of the firm.

**Population**: In this study, the population includes all widely held companies whose shares are publically traded through a stock exchange.

**Sampling Design**

- **Sampling Unit**: Companies listed on Bombay Stock exchange (BSE).
- **Sampling Size**: In these study 75 companies has been selected from 5 different sectors, which are listed in Bombay stock exchange.

**Data Collection**

- **Secondary Data**: Financial statements of companies under study, Key ratios, and Historical stock prices.

**STATISTICAL ANALYSIS**

Descriptive Statistics is used to describe the pattern of dividend payout, Debt equity and the return on shares. Statistical model used: The model used here is multiple - regression model.
The regression equation for the study is as under. \(Y = a + b1 \times X1 + b2 \times X2\)
\(Y = \) Actual Return on Equity
\(X1 = \) Debt-Equity Ratio
X2 = Dividend Pay-out Ratio

**DATA ANALYSIS**

To draw inference on analysis, the statistical tools like correlation matrix have been used in order to check co-linearity exist between independent variables and multiple regression is used.

**Pharmaceutical Sector**

<table>
<thead>
<tr>
<th>Table-1: Showing Regression Statistics</th>
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</thead>
<tbody>
<tr>
<td><strong>Regression Statistics</strong></td>
</tr>
<tr>
<td>Multiple R</td>
</tr>
<tr>
<td>R Square</td>
</tr>
<tr>
<td>Adjusted R Square</td>
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<td>Standard Error</td>
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<tr>
<td>Intercept</td>
</tr>
<tr>
<td>Long term debt</td>
</tr>
<tr>
<td>Dividend Payout Ratio</td>
</tr>
<tr>
<td>Observations</td>
</tr>
</tbody>
</table>

**Sources:** Authors Compilation

**Analysis**

- The value of R-square indicates that significant factors combined together explain only 5% in 2015 and 49.6% in 2011 of the dividend payout pattern of Indian Pharmaceutical sector. From the above analysis, one can infer that Dividend payout ratio were completely independent on Actual return on equity.
- In the year 2015, 2013, 2012 and 2011 results show that long-term debt with coefficient (-0.244) was sharing inverse relationship with actual return on equity. However, dividend payout ratio has a positive coefficient (0.157) meaning that they are sharing direct relationship with dividends. However, in the year 2014, results show that long-term debt with coefficient (0.658) was sharing a positive relationship with actual return on equity. However, dividend payout ratio (-0.013) had an inverse relationship with Long-term debt.
- From the descriptive analysis, it was evident that the Average mean ranges from 0.254 in 2011 and 1.175 in 2015 and the Standard Deviation was 0.084 in 2015 and 0.345 in 2011.
- Results from 5 years show that p-value in the case of long-term debt and dividend payout ratio were greater than 5% level of significance. Therefore, we cannot reject the Null hypothesis. Therefore, it is inferred that there is no significant relation between Dividend payout ratio and shareholders wealth.

**Cements Sector**

<table>
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<th>Table-2: Showing Regression Statistics</th>
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<td><strong>Regression Statistics</strong></td>
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<td>R Square</td>
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<td>Standard Error</td>
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<tr>
<td>Intercept</td>
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<tr>
<td>Long term debt</td>
</tr>
<tr>
<td>Dividend Payout Ratio</td>
</tr>
<tr>
<td>Observations</td>
</tr>
</tbody>
</table>

**Sources:** Authors Compilation

**Analysis**

- The value of R-square indicates that significant factors combined together explain only 17.9% in 2015 and 34.5% in 2011 of the dividend payout pattern of Indian Cements Sector.
- In the years 2015, 2014 and 2013, long-term debt with coefficient (-0.0792) and dividend payout ratio (-0.2461) was sharing inverse relationship with actual return on equity. In the years 2012 and 2011, long-term debt with coefficient (-
0.0764) was sharing inverse relationship with actual return on equity. However, dividend payout ratio has a positive coefficient (0.3885) meaning that they are sharing direct relationship with actual return on equity. 

- Descriptive analysis shows that the Average mean ranges from 1.289 in 2015 and 1.290 in 2011 and that the Standard Deviation was 0.337 in 2015 and 0.353 in 2011.
- Therefore, it is inferred that there is no significant relation between Dividend payout ratio and shareholders wealth.

**Infrastructure Sector**

Table-3: Showing Regression Statistics

<table>
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<td>Intercept</td>
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**Computer Software Sector**

Table-4: Showing Regression Statistics

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**Analysis**

- The value of R-square is 0.2778 in 2015 and 0.2532 in 2011, which is not encouraging in 2011 and 2015. This indicates that significant factors combined together explain only 27.7% in 2015 and 25.3% in 2011 of the dividend payout pattern of Indian Infrastructure Sector. From the above analysis, one can infer that stock returns were completely dependent on the dependent variables.
- Years 2015, 2014, 2013, 2012 show that long-term debt with coefficient (-0.2906) was sharing inverse relationship with actual return on equity. However, dividend payout ratio has a positive coefficient (0.6403) meaning that they are sharing direct relationship with dividends. Results in 2011show that long-term debt with coefficient (-0.2110) and dividend payout ratio (-0.8304) was sharing inverse relationship with actual return on equity.
- Descriptive analysis prove that the Average mean ranges from 0.2316 in 2011 and 0.2495 in 2015 and the Standard Deviation was 0.1373 in 2011 and 0.2860 in 2015.
- Therefore, it is inferred that there is no significant relation between Dividend payout ratio and shareholders wealth.

**Infrastructure Sector**

Table-3: Showing Regression Statistics

<table>
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<tr>
<td>Intercept</td>
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<td>0.7909</td>
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<tr>
<td>Long term debt</td>
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<td>Dividend Payout Ratio</td>
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</table>

**Sources:** Authors Compilation
relationship with actual return on equity. However, dividend payout ratio has a positive coefficient (0.1511) meaning that they are sharing direct relationship with dividends.

- Descriptive statistics shows that the Average mean ranges from 2011-2015 was 0.614 in 2011 and 1.299 and that the Standard Deviation from 2011-2015 was 0.188 in 2011 and 0.374.
- Therefore, it is inferred that there is no significant relation between Dividend payout ratio and shareholders wealth.

**Power Generation Sector**

**Table-5: Showing Regression Statistics**

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</tbody>
</table>

**Sources**: Authors Compilation

**Analysis**

- The value of R-square is 0.1082 in 2015 and 0.3541 in 2011, which is encouraging in 2011. However, not encouraging in 2015. This indicates that significant factors combined together explain only 10.8% in 2015 and 35.4% in 2011 of the dividend payout pattern of Indian Cements Sector. From the above analysis, one can infer that stock returns were completely dependent on the dependent variables.
- During 2015, 2013, 2012 and 2011, results show that long-term debt with coefficient (-0.0980) was sharing inverse relationship with actual return on equity. However, dividend payout ratio has a positive coefficient (0.0678) meaning that they are sharing direct relationship with dividends and in 2014, results show that long term debt with coefficient (-0.2302) and dividend payout ratio (-0.7631) was sharing inverse relationship with actual return on equity.
- Descriptive statistics show that the Average mean ranges from 0.389 in 2011 and 0.996 in 2015 and that the Standard Deviation from 0.158 in 2011 and 0.2302) and dividend payout ratio are greater than 5% level of significance. Therefore, we cannot reject the Null hypothesis. Therefore, it is inferred that there is no significant relation between Dividend payout ratio and shareholders wealth. We can conclude that firms value is not only dependent on dividend payout ratio but also several other factors. ROE as an important factor taken into consideration for determining and measuring shareholders wealth is a function of sales revenue, profitability, taxation structure, debt equity ratio etc. Thus the companies can go with policies advocated by various economists earlier that high performing companies should try to give very low dividends and invest their excess funds in investment opportunities which will definitely lead to increase in shareholders wealth and firm value, low performing companies to attract and retain the existing shareholders can give 100% dividends to its shareholders as they may not have profitable investment opportunities and average performing companies can decide on any payout ranging from 0-100% dividends. It depends on the growth phase of the company, market structure, business cycles, investment opportunities etc.

**FINDINGS OF STUDY**

From the above analysis, one can infer that Dividend payout ratio is completely independent on actual return on equity. Multiple regression test results have revealed that there is no relation between dividend payout ratio and actual returns on equity. Therefore, it is inferred that there is no significant relation between dividends that the company pay and shareholders wealth. The same results are obtained for Pharma sector, cements sector, infrastructure sector, computer software sector, and for power generation sector.

**CONCLUSIONS**

Since the results from 5 years show that p-value in the case of long term debt and dividend payout ratio were greater than 5%
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'NET PROFIT PREDICTION' A SYMBOLIC REGRESSION APPROACH:
A STUDY ON NEW PRIVATE SECTOR BANKS IN INDIA

V. Magesh

ABSTRACT

This paper derives the Average Net Profit Equation using innovative method of Symbolic Regression. Seven new private sector banks, which came into operation after economic liberalization introduced in the year 1991 were chosen as sample size for the purpose of study from nine new private sector banks. They sample banks are Axis bank, DCB bank, HDFC bank, ICICI bank, Indusind bank, Kotak Mahindra bank and Yes bank. Using symbolic regression, it was found that out of many parameters including Total Assets, Total Advances, Total Investment, Total Deposits, Net Worth, Total Debt, Total Income, Total Expenses and Spread, only Average Total Income, Average Total Debt and Average Total Expenses is enough to predict the average net profit of new private sector banks over the period of study. The formula derived for predicting was with 13 complexities with a Goodness of fit of 99.99% and correlation of 0.99.

KEYWORDS
Symbolic Regression, Linkage of Variables, Nutonian Eureqa etc.

INTRODUCTION

One of the most important metric for gauging bank’s profitability is Net Profit. Higher Net Profit represents better managed and more efficient bank, which is the reason predicting net profit is an important research area and of deep interest to bank managers, financial analysts, investors and policy makers. Many new private sector banks which came into operation in 1993 as per the recommendations of Narasimham Committee and quickly dominated the banking landscape by focusing on customer satisfaction and employing new technology to cover a large base of customers with lower outlay. This allowed them to have better net profit than public sector banks. This aspect of the new private sector banks makes them fertile ground for studying net profit and analyze linkages to various important parameters like Total Assets, Total Advances, Total Investment, Total Deposits, Net Worth, Total Debt, Total Income, Total Expenses and Spread. This study analyses the linkage between the aforementioned parameters and Average Net Profit of new private sector banks using a new approach to modelling called Symbolic Regression. The advantage of Symbolic Regression over other prediction methods is that a fixed model is not provided as a starting point to the software. Initial expressions are formed by randomly combining mathematical building blocks such as mathematical operators, analytic functions, constants, and state variables. By recombining various mathematical operations, a series of model is derived. Since Symbolic regression is not affected by human bias, the model derived is highly objective. The fitness function that drives the evolution of the models takes into account both the error metrics and complexity measures thus ensuring that the resulting models reveal the data's underlying structure. This paper uses such an innovative method to derive the important Average Net profit Equation.

REVIEW OF LITERATURE


SCOPE OF STUDY

Predicting Net Profit of new private sector bank is a new body of research and is completely different from general data analysis of banks, which has not been researched in depth in India. This study aims to establish relationship between important parameters of banks and Net Profit of new private sector banks in India by deriving formula to predict Net Profit of banks. The results can be

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extrapolated to other banking sectors and industry with suitable modifications in parameters studied and analyzed, hence it can be concluded that the scope of the study is wide and adaptable to other suitable banking sectors as well.

**SOURCES OF DATA**

The data are obtained from secondary sources only.

**Secondary Data**

The secondary data were collected from various sources such as books, Periodicals, annual reports, audited financial statements of the banks, magazines, Reserve Bank of India data base, websites of selected private-sector banks, CMIE corporate data base, CII reports, IBA sources and business newspapers such as Financial Express, Business Standard, The Economic Times, Business Today, Business India, Chartered Financial Analyst, Indian Journal of Finance, website of Ministry of Finance and Economic Survey of Government of India.

**OBJECTIVES OF STUDY**

Following are the main objectives of the study:

- To ascertain the significance of Total Assets, Total Advances, Total Investment, Total Deposits, Net Worth, Total Debt, Total Income, Total Expenses and Spread in predicting Net Profit.
- To derive a formula to predict Average Net Profit based on parameters, which are found to be significant.
- To suggest scope for future research, if any.

**SAMPLE AND SAMPLING METHOD**

Seven new private sector banks were chosen as sample size for the purpose of study from nine new private sector banks. The selection of the banks was made irrespective of the parameters such as size of the balance sheet, number of branches, business volume and profit volume. The Banks, which were licensed after 1991, are chosen for the study. Since IDFC bank started operation after 2014 and Bhandan Bank started operations in December 2014, they were not considered for this study. The banks selected for the study are as follows:

<table>
<thead>
<tr>
<th>Bank Name</th>
<th>Year of Incorporation</th>
</tr>
</thead>
<tbody>
<tr>
<td>AXIS Bank Limited</td>
<td>1993 (Formerly UTI Bank)</td>
</tr>
<tr>
<td>DCB Bank Limited</td>
<td>1995</td>
</tr>
<tr>
<td>HDFC Bank Limited</td>
<td>1994</td>
</tr>
<tr>
<td>ICICI Bank Limited</td>
<td>1994</td>
</tr>
<tr>
<td>IndusInd Bank Limited</td>
<td>1994</td>
</tr>
<tr>
<td>Kotak Mahindra Bank Limited</td>
<td>2003 (Converted NBFC)</td>
</tr>
<tr>
<td>YES Bank Limited</td>
<td>2004</td>
</tr>
</tbody>
</table>

**Sources**: Annual Reports of the Banks and RBI Database.

Only the pure financial data of the selected banks were considered in this study. The data period for analyzing was 10 years from 2005-06 to 2014-15.

**MEASUREMENT AND PROCEDURE**

Data of Net profit, Total Assets, Total Advances, Total Investment, Total Deposits, Net Worth, Total Debt, Total Income and Total Expenses from 2005-06 to 2014-15 were obtained from RBI database, banks’ annual reports and Indian Banks Association.

The average of all parameters including Total Assets, Total Advances, Total Investment, Total Deposits, Net Worth, Total Debt, Total Income, Total Expenses and Spread from 2005-06 to 2014-15 was taken using arithmetic mean.

For carrying our Symbolic Regression Analysis, Eureqa Pro Academic edition was used. The symbolic regression model building requires two inputs: the Search Function, and the Formula Building Block. The search function includes all independent parameters and the dependent parameter. The Formula Building Block is mathematical operators, analytic functions, constants, and state variables. Based on Search function and formula building block, the program outputs many models. The best prediction model or ‘solution’ is determined by two factors: their complexity (“Size”) and their accuracy (“Fit”) on the validation data.
default, Eureqa ranks solutions according to a ratio of complexity and accuracy; solutions that are accurate but not too complex are shown at the top. The solution, which shows highest R2 Goodness of fit value and high correlation, is considered good solution and best model for prediction.

DATA ANALYSIS AND INTERPRETATION OF RESULTS

The mean of data parameters of all new private banks under study are tabulated in table-2 below:

Table-2: Average of Parameter Values from 2005-06 to 2014-15

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Axis Bank</td>
<td>227501.5</td>
<td>132503.5</td>
<td>70924.73</td>
<td>171054.2</td>
<td>19913.02</td>
<td>198573.7</td>
<td>21004.7</td>
<td>17711.63</td>
<td>6434.416</td>
</tr>
<tr>
<td>DCB Bank</td>
<td>8468.739</td>
<td>5008.582</td>
<td>2518.901</td>
<td>6629.213</td>
<td>716.666</td>
<td>7338.591</td>
<td>825.283</td>
<td>794.268</td>
<td>229.795</td>
</tr>
<tr>
<td>HDFC Bank</td>
<td>28013.45</td>
<td>163376.5</td>
<td>79325.04</td>
<td>210475.2</td>
<td>25681.13</td>
<td>228810.8</td>
<td>27142.73</td>
<td>22763.1</td>
<td>10682.04</td>
</tr>
<tr>
<td>ICICI Bank</td>
<td>439601.6</td>
<td>245372.9</td>
<td>132745.2</td>
<td>252758.1</td>
<td>53138.57</td>
<td>356683.2</td>
<td>39861.72</td>
<td>34009.81</td>
<td>10374.06</td>
</tr>
<tr>
<td>IndusInd Bank</td>
<td>49532.33</td>
<td>29895.15</td>
<td>13061.58</td>
<td>36598.92</td>
<td>4129.112</td>
<td>43404.99</td>
<td>5261.665</td>
<td>4629.51</td>
<td>1389.688</td>
</tr>
<tr>
<td>Kotak Mahindra Bank</td>
<td>51835.67</td>
<td>30629.11</td>
<td>16393.96</td>
<td>32628</td>
<td>6527.202</td>
<td>42392.82</td>
<td>5556.458</td>
<td>4754.144</td>
<td>2137.179</td>
</tr>
<tr>
<td>YES Bank</td>
<td>56849.11</td>
<td>27325.79</td>
<td>20396.18</td>
<td>39478.6</td>
<td>4047.256</td>
<td>49334.67</td>
<td>4707.644</td>
<td>1317.812</td>
<td>5826.174</td>
</tr>
</tbody>
</table>

Sources: Annual Reports of Selected Banks and RBI Database

The average of parameters values tabulated in table (Total Assets, Total Advances, Total Investment, Total Deposits, Net Worth, Total Debt, Total Income, Total Expenses and Spread) was used in the search function for symbolic regression:

AvgNetProfit = f(AvgTotAsset, AvgAdv, AvgInv, AvgDep, AvgNetWorth, AvgTotDebt, AvgTotIncome, AvgTotExpense, AvgSpread)

The Formula Building Blocks, which were used as input, are:

Constant, Input Variable, Addition, Subtraction, Multiplication, Division and Exponential

Based on the Search function and Formula Building Blocks, series of models are tested. The Models tested are tabulated in Table 3.

Table-3: Models created in Symbolic Regression Process

| AvgNetProfit = a*AvgSpread + b*AvgTotIncome + c*AvgInv + d*AvgTotDebt - e - f*AvgNetWorth - g*AvgAdv - h*AvgSpread |
| AvgNetProfit = a*AvgTotIncome + b*AvgSpread + c*AvgTotAsset + d*AvgAdv - e - f*AvgTotExpense - g*AvgDep - h*AvgSpread |
| AvgNetProfit = a*AvgTotIncome + b*AvgSpread + c*AvgTotAsset - d - e*AvgTotExpense - f*AvgDep - g*AvgSpread |
| AvgNetProfit = a*AvgTotIncome + b*AvgTotDebt - c - d*AvgTotExpense |
| AvgNetProfit = a*AvgTotIncome - b - c*AvgTotExpense |

Sources: Authors Compilation

All the above models were plotted for accuracy Vs Complexity. The optimum solution with complexity of 13 and high Goodness of Fit value is chosen. The chosen model and Solution Fit Summary is tabulated in Table-4.

Table-4: Solution Fit Summary

<table>
<thead>
<tr>
<th>Solution</th>
<th>AvgNetProfit = 0.988290795000527<em>AvgTotIncome + 0.00024130339404118</em>AvgTotDebt - 0.778086183327105 – 0.98878389505601*AvgTotExpense</th>
</tr>
</thead>
<tbody>
<tr>
<td>R^2 Goodness of Fit</td>
<td>0.99999982</td>
</tr>
<tr>
<td>Correlation Coefficient</td>
<td>0.99999993</td>
</tr>
<tr>
<td>Maximum Error</td>
<td>2.2922874</td>
</tr>
<tr>
<td>Mean Squared Error</td>
<td>0.77324558</td>
</tr>
</tbody>
</table>
Mean Absolute Error | 0.42709136  
Coefficients       | 4
Complexity         | 13
Primary Objective  | 0.42709136
Fit (Normalized Primary Obj.) | 0.00024754

**Sources:** Authors Compilation

Since the R² score (Goodness of fit) of Solution is .999 (99.9%) fit and correlation coefficient is 0.99, the model (solution) depicted below with 13 complex solution is accepted as the best-fit solution:

\[
\text{AvgNetProfit} = 0.988290795000527 \times \text{AvgTotIncome} + 0.000241303309440118 \times \text{AvgTotDebt} - 0.778086183327105 - 0.98878389505601 \times \text{AvgTotExpense}
\]

It can be concluded that the Average Net Profit can be derived from just 3 parameters - Average Total Income, Average Total Debt and Average Total Expenses. The accuracy Vs Complexity of best solution is plotted in Figure 1.

**Figure-1: Solution Plotted Accuracy vs. Complexity**

![Figure-1](image)

**Sources:** Authors Compilation

To test the accuracy of model, the validation and training data’s match on graph points is plotted and show in Figure 2.

**Figure-2: Plot of Training and Validation Data Plot**

![Figure-2](image)

**Sources:** Authors Compilation

It can be seen from the above plot that the formula derived is accurate as the training data points and validation data points match closely.

**CONCLUSION AND IMPLICATIONS FOR FUTURE RESEARCH**

The study is a major step in analyzing and deriving formula for average Net profit of new private banks. It also shows that out of many parameters, only 3 parameters viz., Average Total Income, Average Total Debt and Average Total Expense are significant in predicting average Net Profit. This study shows the powerful way in which Symbolic Regression can be used to derive important formulas from chaotic and uncorrelated data series of banks.
This study has set forth a new path for future research area in banking sector in India. Predictive models using Symbolic Regression will give new perspective on bank data and can be considered as one of the important research objective in studying public sector, private sector, foreign banks and international financial institutions. The contribution of symbolic regression can be further expanded by studying effect of socio-economic data on the various other profitability parameters and efficiency parameters of banks and financial institutions.

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A STUDY ON SHARE PRICE MOVEMENT BEFORE AND AFTER ANNOUNCEMENT OF DIVIDEND IN SELECT TEN BANKS OF INDIA

S. Manju Bharathi27 S. Arul Kaveeswarar28

ABSTRACT

Dividends act as measure of financial reliability, solvency, management efficiency and overall growth of an organization. While the dividend history of a given stock plays a general role in its popularity, the declaration and payment of dividends also has a specific and predictable effect on market prices. Investor confidence and sentiments play a crucial role in the rise and fall of share prices before and or after announcement of dividends. Thus, this paper will analyze the movement of share prices fifteen days before and fifteen days after announcement of dividend in select ten banks of India—five in the nationalized bank sector and five from the new private sector banks for the periods between the years 2010-2015.

INTRODUCTION

Dividend policy decision is a key area in the field of corporate financial management. Firms view dividend policy as very important because it determines that what funds flow to investors and what funds the firm for reinvestment retains. Dividends are major return to the shareholders. It provides a signal to the investors that the company is complying with good corporate governance practices. It is important for the company to ensure that it implies with good capital market to raise funds. By distributing dividend, it is able to attract investors and indirectly increase the company share price.

Dividend policy is a dominant financial issue for analysts and corporate managers. One important reason is that deciding on the amount of earnings to pay out as dividends reflects the profitability and forecasting prospects of corporate companies. A proper understanding of dividend policy is crucial for many financial economists and analysts. Particularly, a view of methods and amount dividends are paid are beneficial to the analysis in theories of asset pricing, capital structure, mergers and acquisitions, and capital budgeting (Allen & Michaely, 1995).

Stocks that pay consistent dividends are popular among investors. However, dividends are not guaranteed on common stock, many companies take some pride in generously rewarding their shareholders with consistent and sometimes increasing dividends each year such as interim dividends. Companies that payout dividends more often are perceived as financially stable. In addition, thus make for good investments more especially among buy-and-hold investors who are most likely to benefit from dividend payments.

When companies display consistent dividend histories, they become more attractive to investors. As more investors dash in to take advantage of this arbitration, the stock price naturally increases which simultaneously reinforces the belief that the stock is secure. If a company announces a higher than normal dividend the public sentiment tends to ascend.

Conversely, when a company that traditionally pays dividends issues a lower than normal dividend and or no dividend at all, it may be interpreted as a sign that the company is not financially viable. The truth could be that the company's profits are being used for other purposes such as investment for expansion etc., but the market’s perception of the situation is always more powerful than the legitimacy.

OBJECTIVES OF STUDY

- To analyze the trend of Share Price Movement with reference to announcement of Dividends in ten Indian Banks (five nationalized banks and five new private sector banks).
- To determine the stability and prosperity of the banks under study.
- To analyze the stationary and non-stationary movement in share price movement before and after announcement of dividend in ten Indian Banks (five nationalized banks and five new private sector banks).
RESEARCH HYPOTHESIS

- \( H_0 \): The announcement of Dividend has no impact on share price movement.
- \( H_1 \): The announcement of Dividend has some impact on share price movement.

DURATION OF STUDY

This study covers a period of five years from 2010 to 2015.

PURPOSE OF STUDY

The decision taken regarding dividend payment to the shareholders has great impact on before after the announcement of dividend. The unembellished motivation for this study is to accomplish the objectives of this study, which has a chief impact of dividend policy on the trend of share price movement before and after announcement of dividend of select ten banks in India.

RESEARCH METHODOLOGY

Research Design

This study is undertaken with secondary data. It has analyzed ten banks in India. Although a number of banks may flourish in India, a set of five nationalized banks and five new private sector banks had been selected at random for the study, for which data was available.

Data Collection

The study is based on the secondary data collected from the database maintained by the Economic Times. The daily closing share price over a period of five years from 2010 to 2015 was collected fifteen days before and fifteen days after announcement of dividend by the understudied banks (excluding interim dividend).

Research Sample

There were ten banks opted for the study divided in two categories:

- Banks in the nationalized category are State Bank of India, Canara Bank, Bank of Baroda, Oriental Bank of Commerce and Indian Bank.
- Banks in the new private sector banks category are HDFC Bank, ICICI Bank, Kotak Mahindra Bank, Axis Bank and Yes Bank.

Tools Used For Analyzing Data

The tools used for analyzing the data are:

- Descriptive Statistics,
- ADF Unit Root Test,
- Correlogram.

If the mode, median, and mean are around the name number, the dataset has no skew. If the mode is less than the median and the median is less than the mean, then; the dataset has a positive skew. If the mode is greater than the median and the median is greater than the mean, the dataset has a negative skew. A number called kurtosis measures the height and sharpness of the peak relative to the rest of the data. Higher values indicate a higher, sharper peak; lower values indicate a lower, less distinct peak. The mean and standard deviation have the same units as the original data, and the variance has the square of those units. However, the kurtosis has no units: it's a pure number, like a z-score. The Augmented Dickey-Fuller unit root test is used to determine whether a unit root, a feature that can cause issues in statistical inference, is present in an autoregressive model. The formula is appropriate for trending time series like asset prices. It is the simplest approach to test for a unit root. Correlogram test is administered to know whether the time series has white noise or grey noise.

REVIEW OF LITERATURE

The most debated issue in the field of finance is over the effect of dividend policy on market price per share.
Dividend announcement is one of the most significant indicators to shareholders in the prospect of identifying the firm performance and future progress of the firm, which might influence the movement of share prices in the capital market.

Gordon (1962) demonstrates that stock prices react significantly to dividend announcements; the announcements of dividend increases have a positive excess return around the announcement day.

Watts (1973) did not find any abnormal returns following announcement of dividend.

Genodes (1978) reports that an unexpected change in dividends causes little announcement effect.

Bernartzi et al. (1997) found evidence that the announcement of dividends increases result in positive abnormal returns whereas the announcement of dividends decreases result in negative abnormal returns.

Grullon et al. (2002) documented that firms that increased their dividend by 10%, their stock prices raised by 1.34% after the announcement. While those that decreased their dividend by 10% or more experienced a price decline of -3.71%.

Hashemijoo and Ardekani (2012), states that the share price volatility is a benchmark for measuring risk. It indicates changing pace in the stock's price over a determined period. The more the considerable volatility implies that the possibility of gain or loss is higher in short term. Therefore, the price of the volatile stock would differ considerably over time and it is very difficult to predict the future price of stock.

Bohart (2006) argues that investors are drawn to the stock market to make money, which is done by selling stock at a price higher than what it was originally bought. He further suggests that since stock prices are largely connected to investors' moneymaking goals, which helps to understand their inner workings. He therefore concludes that share prices are established in the marketplace but what causes their volatility is inflation and share prices, economic strength of market and psychological issues on stock price, supply and demand and uncertainty.

**Table-1: Consolidated Table Values of Descriptive Analysis for Five Years (2010-2015)**

<table>
<thead>
<tr>
<th>Bank</th>
<th>Mean Value Before</th>
<th>Mean Value After</th>
<th>Std. Deviation Before</th>
<th>Std. Deviation After</th>
<th>Kurtosis Before</th>
<th>Kurtosis After</th>
<th>Skewness Before</th>
<th>Skewness After</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBI</td>
<td>1921</td>
<td>1915</td>
<td>800</td>
<td>803</td>
<td>3.42</td>
<td>3.36</td>
<td>-1.35</td>
<td>-1.39</td>
</tr>
<tr>
<td>Canara</td>
<td>422</td>
<td>405</td>
<td>108</td>
<td>83</td>
<td>3.21</td>
<td>3.82</td>
<td>0.92</td>
<td>0.60</td>
</tr>
<tr>
<td>Bank of Baroda</td>
<td>668</td>
<td>671</td>
<td>252</td>
<td>251</td>
<td>3.16</td>
<td>3.19</td>
<td>-1.06</td>
<td>-1.14</td>
</tr>
<tr>
<td>Oriental Bank of Commerce</td>
<td>274</td>
<td>271</td>
<td>57</td>
<td>52</td>
<td>2.02</td>
<td>1.59</td>
<td>0.39</td>
<td>0.26</td>
</tr>
<tr>
<td>Indian</td>
<td>174</td>
<td>185</td>
<td>36</td>
<td>33</td>
<td>1.88</td>
<td>2.00</td>
<td>0.25</td>
<td>0.57</td>
</tr>
<tr>
<td>HDFC</td>
<td>1173</td>
<td>1194</td>
<td>715</td>
<td>784</td>
<td>3.84</td>
<td>3.76</td>
<td>1.56</td>
<td>1.57</td>
</tr>
<tr>
<td>ICICI</td>
<td>927</td>
<td>932</td>
<td>311</td>
<td>310</td>
<td>2.96</td>
<td>2.89</td>
<td>-1.06</td>
<td>-0.98</td>
</tr>
<tr>
<td>Kotak Mahindra</td>
<td>768</td>
<td>772</td>
<td>287</td>
<td>294</td>
<td>3.20</td>
<td>2.90</td>
<td>1.11</td>
<td>0.88</td>
</tr>
<tr>
<td>Axis Bank</td>
<td>1182</td>
<td>1192</td>
<td>323</td>
<td>336</td>
<td>3.02</td>
<td>2.60</td>
<td>-1.13</td>
<td>-0.88</td>
</tr>
<tr>
<td>Yes Bank</td>
<td>448</td>
<td>452</td>
<td>186</td>
<td>190</td>
<td>3.35</td>
<td>3.03</td>
<td>1.29</td>
<td>1.15</td>
</tr>
</tbody>
</table>

**Sources:** Authors Compilation

**ADF Unit Root Test**

**Table-2: ADF Unit Root Test of HDFC Bank (Before Data)**

<table>
<thead>
<tr>
<th>ADF Test Statistic</th>
<th>1% Critical Value*</th>
<th>5% Critical Value</th>
<th>10% Critical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>-4.592048</td>
<td>-3.5437</td>
<td>-2.9109</td>
<td>-2.5928</td>
</tr>
</tbody>
</table>

**Note:** *MacKinnon critical values for rejection of hypothesis of a unit root.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.511221</td>
<td>Mean dependent var.</td>
<td>-0.023729</td>
<td></td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.484561</td>
<td>S.D. dependent var.</td>
<td>407.9760</td>
<td></td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>292.9027</td>
<td>Akaike info criterion</td>
<td>14.26295</td>
<td></td>
</tr>
<tr>
<td>Sum squared resid.</td>
<td>4718550.</td>
<td>Schwarz criterion</td>
<td>14.40350</td>
<td></td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-416.7569</td>
<td>F-statistic</td>
<td>19.17512</td>
<td></td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td>2.001477</td>
<td>Prob. (F-statistic)</td>
<td>0.000000</td>
<td></td>
</tr>
</tbody>
</table>

**Sources:** Authors Compilation
As evinced in table 2, it is justifiable to reject the null hypothesis as the ADF test statistic (-4.59) are less than the critical values at 1%, 5% and 10%. Hence, the alternate hypothesis is accepted that there is stationary movement in share prices before the announcement of dividend. The Durbin-Watson Test confirms rejecting the null hypothesis as the finding is affirmed with a value of 2.00. In addition, the Durbin-Watson value at 2.00 indicates that the HDFC bank is stationary.

### Table-3: ADF Unit Root Test of HDFC Bank (After Data)

<table>
<thead>
<tr>
<th></th>
<th>1% Critical Value*</th>
<th>5% Critical Value</th>
<th>10% Critical Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADF Test Statistic</td>
<td>-4.505000</td>
<td>-3.5398</td>
<td>-2.9092</td>
</tr>
</tbody>
</table>

Note: *MacKinnon critical values for rejection of hypothesis of a unit root.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Coefficient</th>
<th>Std. Error</th>
<th>t-Statistic</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-squared</td>
<td>0.519318</td>
<td></td>
<td></td>
<td>0.121311</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.494019</td>
<td></td>
<td></td>
<td>408.2459</td>
</tr>
<tr>
<td>S.E. of regression</td>
<td>290.3950</td>
<td></td>
<td></td>
<td>14.24369</td>
</tr>
<tr>
<td>Sum squared resid</td>
<td>4806767</td>
<td></td>
<td></td>
<td>14.38210</td>
</tr>
<tr>
<td>Log likelihood</td>
<td>-436.4524</td>
<td></td>
<td></td>
<td>20.52714</td>
</tr>
<tr>
<td>Durbin-Watson stat</td>
<td>2.000221</td>
<td>Prob. (F-statistic)</td>
<td>0.000000</td>
<td></td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

As evinced in table 3, it is justifiable to reject the null hypothesis as the ADF test statistic (-4.50) are less than the critical values at 1%, 5% and 10%. Hence, the alternate hypothesis is accepted that there is stationary movement in share prices after the announcement of dividend. The Durbin-Watson Test confirms rejecting the null hypothesis as the finding is affirmed with a value of 2.00. In addition, the Durbin-Watson value at 2.00 indicates that the HDFC bank is stationary.

Correlogram Analysis

### Table-4 (a): Correlogram of Indian Bank – Share Price Movement (Before Data)

<table>
<thead>
<tr>
<th>Auto correlation</th>
<th>Partial Correlation</th>
<th>AC</th>
<th>PAC</th>
<th>Q Stat</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.029</td>
<td>0.012</td>
<td>0.009</td>
<td>-4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0.029</td>
<td>0.011</td>
<td>0.008</td>
<td>-4.048</td>
</tr>
<tr>
<td></td>
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<td>0.067</td>
<td>0.048</td>
<td>0.038</td>
<td>-5.78</td>
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<tr>
<td></td>
<td></td>
<td>0.075</td>
<td>0.044</td>
<td>0.031</td>
<td>-5.36</td>
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<tr>
<td></td>
<td></td>
<td>0.141</td>
<td>0.141</td>
<td>0.030</td>
<td>0.013</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1.942</td>
<td>0.934</td>
<td>0.202</td>
<td>7.93</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2.109</td>
<td>0.934</td>
<td>0.168</td>
<td>3.756</td>
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<tr>
<td></td>
<td></td>
<td>5.367</td>
<td>0.934</td>
<td>0.168</td>
<td>3.756</td>
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<td>0.045</td>
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<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation
Grey noise prevails in the above correlogram, which indicates that there is non-stationary movement in share prices before the announcement of dividend.

Table-4 (b): Correlogram of Indian Bank – Share Price Movement (After Data)

<table>
<thead>
<tr>
<th>Auto-correlation</th>
<th>Partial Correlation</th>
<th>AC</th>
<th>PAC</th>
<th>Q-Stat</th>
<th>Prob</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

White noise is seen prevailing throughout the correlogram above, which implies that there is stationary movement in share prices after the announcement of dividend.

FINDINGS

- It has been observed while reviewing the historic data of all these banks under study, the dividend declaration dates and dividend execution dates were practically on the same dates every year after year during the 2010-2015 period. In case of some new private sector banks such as ICICI, Axis and HDFC banks; the announcement dates fell on the same dates incidentally or a day before or after, but within a maximum of one week.
- Based on the above-mentioned point, it becomes negated to find the value of $R^2$ wherein the announcement dates are already anticipated by the investors or speculators.
- Based on the Descriptive Analysis on ‘Before Data’ it has been found that SBI, Canara Bank, Bank of Baroda, HDFC Bank, Kotak Mahindra Bank, Axis Bank and Yes Bank have Leptokurtic Kurtosis.
- Still based on the Descriptive Analysis on ‘Before Data’, it was found out that Oriental Bank of Commerce, Indian Bank and ICICI have Platykurtic Kurtosis.
- Canara Bank, Oriental Bank of Commerce, Indian Bank, HDFC Bank, Kotak Mahindra Bank, and Yes Bank are found to have a Positive Skew on analysis of Descriptive Analysis on ‘Before Data’.
- While SBI, Bank of Baroda, ICICI Bank and Axis Banks are said to have a Negative Skew based on Descriptive Analysis of ‘Before Data’.
- Based on the ADF Unit Root Test on ‘Before Data’, it is concluded that all banks under study have stationary movement in share prices before announcement of dividend.
- However, the Correlogram analysis on ‘Before Data’ validates quite differently that White noise prevails in SBI, Bank of Baroda, Oriental Bank of Commerce, HDFC Bank, Kotak Mahindra Bank and Yes Bank only which implies that there was only stationary movement in these banks before announcement of dividends.
- The Correlogram analysis on ‘Before Data’ further validates that Canara Bank, Indian Bank, ICICI Bank and Axis banks have Grey noise, which implies there was some non-stationary movement in share prices before the announcement of dividends.
- Based on the Descriptive Analysis on ‘After Data’ it was found out that SBI, Bank of Baroda, HDFC Bank, and Yes Bank has Leptokurtic Kurtosis.
Still based on the Descriptive Analysis on ‘After Data’, it was found out that Canara Bank, Oriental Bank of Commerce, Indian Bank, ICICI Bank, Kotak Mahindra Bank, and Axis Banks have Platykurtic Kurtosis.

Canara Bank, Oriental Bank of Commerce, Indian Bank, HDFC Bank, Kotak Mahindra Bank, and Yes Bank are found to have a Positive Skew on analysis of Descriptive Analysis on ‘After Data’.

While SBI, Bank of Baroda, ICICI Bank and Axis Banks are said to have a Negative Skew based on Descriptive Analysis of ‘After Data’.

It has been further found out that the Skew; either positive or negative has been constant on both before data and after data, as banks have not changed in both data. A bank that had positive skew in before data remained positive skew in after data. Similarly, a bank that had negative skew in before data remained negative skew in after data.

However, Canara Bank, Kotak Mahindra Bank and Axis Bank had shifted from having Leptokurtic Kurtosis in before data to having Platykurtic Kurtosis in the after data.

Based on the ADF Unit Root Test on ‘After Data’, it is concluded that all banks under study have stationary movement in share prices also after announcement of dividend.

However, the Co-relogram analysis on ‘After Data’ validates quite differently that White noise prevails in only SBI, Bank of Baroda, Indian Bank, HDFC Bank and Kotak Mahindra Bank, which implies that there was only stationary movement in these banks after announcement of dividends.

The Correlogram analysis on ‘After Data’ further validates that Canara Bank, Oriental Bank of Commerce, ICICI Bank, Axis Bank and Yes Banks have Grey noise, which implies there was some non-stationary movement in share prices after the announcement of dividends.

It has been further found out that SBI, Bank of Baroda, HDFC Bank and Kotak Mahindra Bank have remained constant in the Correlogram as both before data and after data has concluded white noise thereby assuring that there is stationary movement in share prices in these banks both before and after announcement of dividends.

While Indian Bank has shown to have shifted from grey noise in before data to white noise in after data indicating that there is stationary movement in share prices after announcement of dividend.

Canara Bank, ICICI Bank and Axis bank have remained constant in the Correlogram, as both before data and after data have concluded grey noise thereby indicating that there is non-stationary movement in share prices in these banks both before and after announcement of dividends.

However, Oriental Bank of Commerce and Yes bank had white noise in before data indicating stationary movement in share prices and shifted to grey noise in after data indicating that there was non-stationary movement in share prices after the announcement of dividends.

With reference with the Table-1, consolidated table values of descriptive analysis for five years (2010-2015) it can be noted that 70% of the banks had an increase in per unit share price over the five years under study.

It is to be noted that all the new private sector banks had an increase in share price.

It is noticeable that the remaining 30% banks that had a decrease in share prices are all nationalized banks (SBI, Canara and Oriental Bank of Commerce).

The banks that had the highest leap in share prices are HDFC bank followed by Axis bank.

The banks that had the highest fall in share prices are Canara bank followed by SBI.

Indian Bank is the only nationalized bank that had a tremendous increase in share price at par with the new private sector banks.

**SUGGESTIONS**

It has been evinced from the study, nationalized banks despite having a creamy task force, subsidies and other allowances from the government is a pity that banks with lesser capabilities in terms of share capital and human capital outperform them in the same market. Hence, the government can intervene in the operations of the nationalized banks to enable them to compete at par with the new private sector banks.

At a macro level, the banking industry is booming in India, which is a positive indicator of an accelerating economy. This is also substantiated by a study that 70% of the banks in this study have recorded an increase in share prices over the last five years. Hence, it is suggestible that the Central Bank - Reserve Bank of India continues with its stringent policies on the operations of the banking industry.

Banks lacking behind have to find ways to boost investors’ confidence to attract more investors and to ensure little or no disinvestments take place as that might affect negatively on these banks.

Share price movement is one of yet many other identities of company performance. Hence, banks can ensure other factors that attract investors or those that boost investor confidence are enhanced.

The banks should be more attentive, stern on the internal policies, and decision-making.

(Manju 2016) states that there are also chances of rumors to spread false news about the dividend announcement, which also have effect on the share price. Investors should look at companies that have consistently delivered earnings growth and good corporate governance. Never invest in a firm without understanding the dynamics of the business.
As stated by (Joseph and Arul 2015) the interest in the BRICS ‘economies are prompted by above-average growth predicted for these regions numerated in GDP, as well as the rising consumer power generated by growing middle classes in each nation numerated as GDP-PPP. The growth of this consumer class implies that demand will accelerate within these countries, thus increase stock market trading and consecutively the involvement and growth of banking sector in foreign portfolio investments are inevitable.

CONCLUSION

On analysis of historic data with tools such as Descriptive Analysis, ADF Unit Root Test and Correlogram Analysis, it is concluded that the share price movement in the majority of the banks understudied are stationary. Hence, the Alternate Hypothesis (Hₐ) is selected stating that ‘There is some impact on share price movement after announcement of dividend’. Thus, this signifies that the movement in share prices is positive with 70% of the banks under study, which had an increase in their share prices over the last five years. This is an affirmation that the banking industry is booming in India. Hence, this signifies that India is an accelerating economy.

Borrowing for investment has increased over the years and much of these investments are carried out in India. This paves path for new horizons for new businesses to flourish.

As a third world country and the 7th largest economy in the world (as per nominal GDP), is an investment haven for many industries prying to plying on the fact that India is the 2nd most populous country with the largest middle income people in the world. As it can be evinced in the Human Development Index, peoples’ spending capacity and standards of living have increased tremendously in India, as that much of foreign luxury brands have started entering the Indian market. This substantiates as to why the economy is booming and why the banks are gaining in share prices, especially in the last five years.

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ASSET QUALITY AND RISK OF BANKS: A STUDY ON INDIAN SCHEDULED COMMERCIAL BANKS

Rajashree Dutta Purkayastha29 Dr. A. L. Ghosh30

ABSTRACT

Banks are the backbone of any financial system. Managing the quality of assets has been a talked about topic in banking parlance. If most of the quality of assets of banks becomes sour, it increases the risks of the banks and exerts huge stress on the economy at large. In a period of increasing stressed assets across banks, it has become even more important to know the status of banks with respect to the quality of the assets possessed. This study is an attempt to measure the asset quality of three sectors of banks in India and to examine their respective position in terms of risk for the selected period, using descriptive as well as ANOVA and Levene Statistic.

KEYWORDS

Asset Quality, Risk, Public Sector Banks, Private Sector Banks, Foreign Banks etc.

INTRODUCTION

Banking sector is regarded as the corner stone of any economy. The performance of financial system in any country largely depends upon the functioning of sound banking sector. To accomplish banking stability the banks are required to maintain quality assets that aid in achieving profitability (Swamy, 2013), failing which can create mess in the entire economy, crisis of 2008 is one among such events. Banking industry being one of the crucially important sectors in any economy should be vigilant enough to tackle any sort of trouble. As banks are having access to almost all strata of society by accumulating deposit and purveying credit, it is immensely important for the banking sector to remain stable against all odds. In today’s interconnected world if one country is facing any heat, its impact encompasses other countries related economically. Moreover, more than any other business entities, banks are extremely interconnected to each other, which can lead to a domino effect in times of trouble (Mukhlynina & Nyborg, 2012). Indian Banking sector, which is operating under stringent supervision of Regulatory authorities, is no exception. Although, Indian banks remained quite defiant in the face of worldwide recession in 2009, but the macroeconomic fallout started during 2011-12 coupled with weaker performance of EMEs had been giving a clear signal of tough times ahead in the economic font.

Moreover, if we look at the global banking performance, it is evident that Indian banks have failed to make their mark in the so-called list of Global banks, even after being one of the strongest sectors since regulated regime. The banks with higher notch in the list were mostly coming from either USA or Europe; of late, some of the banks from China gradually securing the top positions. Given the fact that, the present economy of Eurozone which was passing through tough times has given ample scope to the BRICS nation to prove their potential. Because of the crisis, most of the European banks have faced the heat thereby lowering their position in the global level, although the banks of emerging economies failed to utilize the opportunity to reposition them at the global level. Now, in this current fiscal year also, banking sector is witnessing the upheaval. Most of the banks are struggling hard to delve with huge quantum of stressed and toxic assets lying in their books. Moreover, for the sake of following Basel recommendations, banks now need to maintain additional capital conservation buffer (2.5%) over the previous requirements, which is creating additional trouble for the banks in terms of liquidity.

Banking industry, the backbone of any country’s financial system is susceptible to diverse upheavals by virtue of its nature of business (Dutta Purkayastha & Raul, 2014). As the strength of a bank depends mostly on its assets, the quality of assets must be sound enough to ensure profitability and growth. Although Indian banks were mostly vibrant (until 2011), at the same time they have accumulated some toxic assets over the period. This leads to an impending loss. A dig into the various parameters makes the picture clear. As Indian economy is undergoing a face of tumult, exchange rate volatility, huge current account deficit, falling GDP, shrinking IIP, losses by corporate giants are adding more flavor to it. In this changed backdrop, it has become even more important to analyze and derive the stability of Indian banking sector in the context of its quality of assets.

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OBJECTIVE OF STUDY

The study aims at getting a clear overview of various bank groups with regard to asset quality. In addition, an attempt is made to understand the status of risk of the banks as well.

LITERATURE REVIEW AND CONCEPTUAL FRAMEWORK

Risk in Banking

The etymology of the word “Risk” can be traced to the Latin word “Rescump” meaning ‘Risk at Sea or that which cuts’ (Arora & Agarwal, 2009). The common meaning of the word is uncertainty. Risk is an exposure to a transaction with loss, which occurs with some probability and which can be expected, measured and minimized (Goyal & Agarwal, 2010). Risk is the potential variation in outcomes (Williams et al., 1998). Raghavan, 2003 holds that risks are inter-dependent and events affecting one area of risk can have ramifications and penetrations for a range of other categories of risks as well.

Banking, by its nature, entails a wide array of risks (Basle Committee on banking Supervision, Sept.1997). By virtue of its business, banks are exposed to risks, which can be Systematic, as well as Unsystematic risks. Thus, there is the necessity of having the risk management if the unexpected part of the revenue, the one that results from unexpected events, quantifies the real risk of the business. The risks inherent in banking must be recognized, monitored, and controlled. There are various categories of Risks viz. Credit risk, Market risk, Country and Transfer risk, Interest rate risk, Liquidity risk, Operational risk, Legal risk and Reputational risk. Out of all such risks Credit risk is treated as the prime and the most important risk as well as threat (Luy, 2010) faced by the financial institutions because its occurrence is very much inclined towards the basic banking activity of lending and borrowing. In the words of Greuning & Bratanovic 2009, credit risk happens when “payments can either be delayed or not made at all, which can cause cash flow problems and affect a bank’s liquidity”. To remain defiant of credit risk, asset quality of banking sector should be managed properly as accumulation of toxic assets can be detrimental to the overall stability of banks.

Asset Quality

Assets are the vital element of banking fraternity. If the quality of asset of a bank deteriorates, there is every possibility of having tremendous negative impact upon the economy in general and the bank in particular. An efficient financial intermediation requires a stable banking system to channel surplus funds into savings for investments to promote rapid economic growth (King and Levine, 1993; Brown et. al., 2009). Asset quality is the key to understanding the financial health and soundness of the banking system. In India, as in most other countries, NPAs are only an indicator of loan performance. The degree to which it measures actual performance of banks depends on the quality of accounting, auditing, regulation and supervision and the amount of ‘ever greening’ of weak loans, through restructuring (Swamy, 2015). The literature identifies credit cycles as an important determinant of banks’ asset quality. Cyclicality / pro-cyclicality has been defined as “dynamic interactions (positive feedback mechanisms) between the financial and real sectors of the economy” (FSF, 2009). It has been argued that an expansion in credit growth is associated with the deterioration in asset quality because when banks over expand their lending, they tend to lower their credit standards. This behavior translates itself into greater slippages in asset quality at matured stages of the credit cycle. Asset quality has surfaced as an important concern for the Indian banking sector in the recent years. In the period immediately following the global financial crisis, when asset quality of banks in most advanced and emerging economies took a beating, the asset quality of Indian banks was largely maintained, partly on account of the policy of loan restructuring. However, between March 2009 and March 2012, the gross NPAs ratio has shown an increasing trend albeit a fall in 2010-11(RBI, 2012). Hence, maintenance of asset quality is given paramount importance to have a sound banking system.

Various researches also stresses on managing asset quality as an important criteria in a sound banking system. Nagle (1991) indicated that the problems of asset quality might become the future time bomb for banks. William Streeter (2000) also found that based on the questionnaires completed by the board members of the American Bankers Association, the management of asset quality is considered one of banks major management problems in 2001. Yin (1999) referred that the deterioration of asset quality from the ignorance of loan quality by banks is one of the main causes behind the Asian Financial Crisis. The intense competition has forced banks to work harder for more market share and sales, thus allowing their loan quality to slowly deteriorate (Wang, 1999). As it is observed that public sector banks are still at a tumult with regard to curb the growth of NPA (Dutta Purkayastha et. al., 2016) hence it is aptly necessary to understand the status of asset quality across bank groups.

Description of Variables

For assessing Asset quality across bank groups, a number of variables are being used by different researchers (Aspal & Malhotra, 2013; Swamy, 2013, Chaudhary& Singh, 2012). Considering the already available variables and adding two more new variables, this study was conducted to determine asset quality of banks. The description of the variables are mentioned below:
GNPA (Gross NPA to gross Advances Ratio)

GNPA Ratio measures the level of nonperforming loans (NPA) that arise out of gross advances. This ratio is calculated by dividing gross NPA by gross advances. From the analysis in table-1, it is revealed that the ratio is found to be negative in case of PVBs during 2006–2012 under study. This indicates that gross NPA as well as gross advances in the PVBs might have plummeted over the years, which needs further analysis.

NNPA (Net NPA to Net advances ratio)

NNPA Ratio is another important measure to examine asset quality of banks. By deducting net provisions on non-performing assets and interest in suspense account from Gross NPAs, Net NPA is calculated. This ratio calculated by dividing Net NPA by Net Advances is also considered essential in determining asset quality.

STATA (% of standard assets to total assets)

By dividing standard assets by total assets, an attempt is made to check the position of standard assets in total portfolio of assets. This ratio is also studied to determine the asset quality of banks.

SUBATA (% of sub-standard assets to total assets)

This ratio calculated by dividing sub-standard assets by total assets, tries to examine the composition of sub-standard assets to total assets and is used as a measure of asset quality.

DATA (% of doubtful assets to total assets)

Using this ratio the position of doubtful assets out of total assets is ascertained and taken as one of the indicator of asset quality.

LATA (% of loss assets to total assets)

Loss assets are also an important determinant of asset quality. By dividing loss assets by total assets, it is tried to find out the composition of loss assets in the portfolio of total assets.

SBSTGNP (% of sub-standard assets to gross NPA)

By calculating the ratio of sub-standard assets to gross NPA, an attempt is made to analyze the proportion of sub-standard assets turning out to be gross NPA. It is taken as an indicator of asset quality.

SLIPGR (growth of gross NPA to standard assets)

Slippage ratio is treated as one of the important determinant of asset quality of banks. This is calculated by dividing incremental growth of gross NPA by standard assets, as it gives a clear idea of the quantum of standard assets turning out to be gross NPA.

PROVCOVR (% of provision to gross NPA)

Provision coverage ratio, calculated by dividing provision by Gross NPA, is also treated as a parameter to assess asset quality of banks. As provisions are kept to cover bad debts, this ratio gives us the idea whether provision is sufficient as a measure to contain NPA. As per RBI, banks are to ensure that their total provisioning coverage ratio, including floating provisions, is not less than 70 percent.

ROA (Net profit to Assets)

Return on asset is also treated as an important indicator of asset quality of banks. If the assets have sufficient contribution to net profits then we can conclude the asset quality is good for the bank.

RESEARCH METHODOLOGY

The study is based on secondary source of data collected from RBI bulletins and other similar sources. Here all the scheduled commercial banks operating in India since the year 2006 are meticulously observed and recorded with a view to get the idea about asset quality of various banks (group wise).
For the purpose of my study, some parameters identified are- GNPA, NNPA, ROA, Slippage Ratio, Provision coverage ratio etc. Taking a cue from Chisti (2012), Aspal & Malhotra (2013).

Further, using the approaches of Alhassan et al. (2014), Ibrahim & Thangavelu (2014) an attempt is made to assess the quality of assets across bank groups.

Asset quality of bank loans refers to the timely manner with which borrowers are meeting their contractual obligations. In this study, we employ the ratio of non-performing loans to gross loans and advances as the indicator for asset quality. A higher ratio indicates lower bank asset quality. The asset quality (ASQ) for bank \( i \) at time \( t \) is given as:

\[
ASQ_{i,t} = \frac{SSL_{i,t} + DL_{i,t} + LL_{i,t}}{GLA_{i,t}}
\]

Where,

- \( SSL_{i,t} \) = Substandard loans at time \( t \) for \( i \) th bank
- \( DL_{i,t} \) = Doubtful loans at time \( t \) for \( i \) th bank
- \( LL_{i,t} \) = Loss loans at time \( t \) for \( i \) th bank
- \( GLA_{i,t} \) = Gross Loans and Advances at time \( t \) for \( i \) th bank

**HYPOTHESIS OF STUDY**

- \( H_0 \) = There is no significant difference in terms of Asset quality between public, private and foreign banks.
- \( H_1 \) = There is significant difference in terms of Asset quality between public, private and foreign banks.

**ANALYSIS & INTERPRETATION**

Following tables explain the status of asset quality using various parameters as well as with the help of GNPA Ratio.

<table>
<thead>
<tr>
<th>Parameters / Bank Group</th>
<th>SCBs#</th>
<th>PSBs*</th>
<th>Rank</th>
<th>PVBs**</th>
<th>Rank</th>
<th>FBs***</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross NPA to Gross Advances</td>
<td>2.465</td>
<td>2.43166667</td>
<td>1</td>
<td>2.483333333</td>
<td>2</td>
<td>2.81</td>
<td>3</td>
</tr>
<tr>
<td>Net NPA to Net advances</td>
<td>1.09</td>
<td>1.155</td>
<td>3</td>
<td>0.898333333</td>
<td>1</td>
<td>1.081667</td>
<td>2</td>
</tr>
<tr>
<td>% of Std. assets to total assets</td>
<td>97.575</td>
<td>97.6116667</td>
<td>3</td>
<td>97.41</td>
<td>2</td>
<td>97.01667</td>
<td>1</td>
</tr>
<tr>
<td>% of Sub-Std. assets to total assets</td>
<td>1.128333333</td>
<td>1.09833333</td>
<td>1</td>
<td>1.295</td>
<td>2</td>
<td>1.873333</td>
<td>3</td>
</tr>
<tr>
<td>% of doubtful assets to total assets</td>
<td>1.048333333</td>
<td>1.09</td>
<td>3</td>
<td>1.033333333</td>
<td>2</td>
<td>0.785</td>
<td>1</td>
</tr>
<tr>
<td>% of loss assets to total assets</td>
<td>0.23</td>
<td>0.215</td>
<td>1</td>
<td>0.263333333</td>
<td>2</td>
<td>0.325</td>
<td>3</td>
</tr>
<tr>
<td>% of Sub-Std. assets to gross NPA</td>
<td>47.05166667</td>
<td>33.76833333</td>
<td>3</td>
<td>30.16666667</td>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Slippage Ratio (growth of gross NPA / Std. assets)</td>
<td>0.375</td>
<td>0.363333333</td>
<td>2</td>
<td>0.336666667</td>
<td>1</td>
<td>0.451667</td>
<td>3</td>
</tr>
<tr>
<td>Provision coverage ratio (provision / Gross NPA)</td>
<td>0.531666667</td>
<td>0.505</td>
<td>1</td>
<td>0.645</td>
<td>2</td>
<td>0.943333</td>
<td>3</td>
</tr>
<tr>
<td>ROA</td>
<td>1.043333333</td>
<td>0.923333333</td>
<td>3</td>
<td>1.208333333</td>
<td>2</td>
<td>1.706667</td>
<td>1</td>
</tr>
<tr>
<td>Mean of Ranks</td>
<td>2.1</td>
<td>1.8</td>
<td>2.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group Rank</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sources:** Authors Compilation

**Note:** #SCB-Scheduled Commercial Banks
*PSB-Public Sector Banks
**PVB-Private Sector Banks
***FB-Foreign Banks
These ranks also justify that there are differences among bank groups in terms of their asset quality.

Table-2: Standard Deviation of Various Parameters

<table>
<thead>
<tr>
<th>Parameters / Bank Group</th>
<th>SCBs#</th>
<th>PSBs*</th>
<th>Rank</th>
<th>PVBs**</th>
<th>Rank</th>
<th>FBs***</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gross NPA to Gross Advances</td>
<td>0.325499616</td>
<td>0.48823833</td>
<td>3</td>
<td>0.302963144</td>
<td>2</td>
<td>1.007075</td>
<td>1</td>
</tr>
<tr>
<td>Net NPA to Net advances</td>
<td>0.16074825</td>
<td>0.27479083</td>
<td>1</td>
<td>0.3009443</td>
<td>2</td>
<td>0.606842</td>
<td>3</td>
</tr>
<tr>
<td>% of Std. assets to total assets</td>
<td>0.203445324</td>
<td>0.37796384</td>
<td>2</td>
<td>0.338467133</td>
<td>1</td>
<td>1.086971</td>
<td>3</td>
</tr>
<tr>
<td>% of Sub-Std. assets to total assets</td>
<td>0.13570802</td>
<td>0.25142925</td>
<td>1</td>
<td>0.442300803</td>
<td>2</td>
<td>1.063253</td>
<td>3</td>
</tr>
<tr>
<td>% of doubtful assets to total assets</td>
<td>0.130601174</td>
<td>0.1859032</td>
<td>1</td>
<td>0.194079022</td>
<td>2</td>
<td>0.301314</td>
<td>3</td>
</tr>
<tr>
<td>% of loss assets to total assets</td>
<td>0.039496835</td>
<td>0.04230839</td>
<td>1</td>
<td>0.064704456</td>
<td>2</td>
<td>0.144049</td>
<td>3</td>
</tr>
<tr>
<td>% of Sub-Std. assets to gross NPA</td>
<td>5.353351909</td>
<td>5.597333</td>
<td>3</td>
<td>4.630189701</td>
<td>2</td>
<td>2.7249</td>
<td>1</td>
</tr>
<tr>
<td>Slippage Ratio (growth of gross NPA / Std. assets)</td>
<td>0.31494444</td>
<td>0.45798108</td>
<td>2</td>
<td>0.309688015</td>
<td>1</td>
<td>1.041948</td>
<td>3</td>
</tr>
<tr>
<td>Provision coverage ratio (provision / Gross NPA)</td>
<td>0.019407902</td>
<td>0.03619392</td>
<td>1</td>
<td>0.138816426</td>
<td>2</td>
<td>0.669467</td>
<td>3</td>
</tr>
<tr>
<td>ROA</td>
<td>0.083106358</td>
<td>0.07118052</td>
<td>1</td>
<td>0.252064806</td>
<td>3</td>
<td>0.244104</td>
<td>2</td>
</tr>
<tr>
<td>Mean of Ranks</td>
<td>1.6</td>
<td>1.9</td>
<td>2.5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Group Rank</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

Using eqn.(1)

Table-3: Asset Quality of Bank Groups

<table>
<thead>
<tr>
<th>Banks</th>
<th>ASQ</th>
<th>ASQ</th>
<th>ASQ</th>
<th>ASQ</th>
<th>ASQ</th>
<th>ASQ</th>
<th>Mean</th>
<th>SD</th>
<th>CV</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSB*</td>
<td>0.027</td>
<td>0.022318</td>
<td>0.020109</td>
<td>0.021899</td>
<td>0.023201</td>
<td>0.033028</td>
<td>0.024378</td>
<td>0.004749</td>
<td>19.479</td>
</tr>
<tr>
<td>PVB**</td>
<td>0.02199</td>
<td>0.024694</td>
<td>0.029009</td>
<td>0.027336</td>
<td>0.022437</td>
<td>0.020775</td>
<td>0.024374</td>
<td>0.003248</td>
<td>13.32538</td>
</tr>
<tr>
<td>FB***</td>
<td>0.018917</td>
<td>0.018924</td>
<td>0.042978</td>
<td>0.042583</td>
<td>0.02537</td>
<td>0.022226</td>
<td>0.0285</td>
<td>0.011319</td>
<td>39.71718</td>
</tr>
<tr>
<td>SCB#</td>
<td>0.02513913</td>
<td>0.022595534</td>
<td>0.02309978</td>
<td>0.02387236</td>
<td>0.024393338</td>
<td>0.030956427</td>
<td>0.025012761</td>
<td>0.003050747</td>
<td></td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

Higher the CV lower is consistency and higher is the variability. We can say although private sector banks are performing little better, but foreign banks are witnessing more stress in terms of volatile asset quality.

Again using GNPA Ratio, as defined by RBI, effort is made to derive conclusion regarding the performance among three bank groups.

Table-4: Using GNPA Ratio

<table>
<thead>
<tr>
<th>Banks</th>
<th>GNPA Ratio of Bank Groups</th>
<th>GNPA Ratio</th>
<th>GNPA Ratio</th>
<th>GNPA Ratio</th>
<th>GNPA Ratio</th>
<th>GNPA Ratio</th>
<th>Mean</th>
<th>SD</th>
<th>CV</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSB*</td>
<td>2.7</td>
<td>2.2</td>
<td>1.97</td>
<td>2.19</td>
<td>2.23</td>
<td>3.3</td>
<td>2.431667</td>
<td>0.488238</td>
<td>20.07834</td>
</tr>
<tr>
<td>PVB**</td>
<td>2.2</td>
<td>2.47</td>
<td>2.89</td>
<td>2.74</td>
<td>2.5</td>
<td>2.1</td>
<td>2.483333</td>
<td>0.302963</td>
<td>12.19986</td>
</tr>
<tr>
<td>FB***</td>
<td>1.8</td>
<td>1.9</td>
<td>3.8</td>
<td>4.26</td>
<td>2.5</td>
<td>2.6</td>
<td>2.81</td>
<td>1.007075</td>
<td>35.83897</td>
</tr>
<tr>
<td>SCB#</td>
<td>2.5</td>
<td>2.3</td>
<td>2.25</td>
<td>2.39</td>
<td>2.25</td>
<td>3.1</td>
<td>2.465</td>
<td>0.3255</td>
<td>13.20485</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation
It shows that the results obtained by using formula of Asset Quality (equation-1) and GNPA Ratio are very closer. This suggests we can use either GNPA Ratio or ASQ to compute asset quality of banks.

To meet our objective, we tried to test the null hypothesis using Levene Statistic, One Way ANOVA with the help of SPSS.

Asset Quality

### Table-5

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
<th>95% Confidence Interval for Mean</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Between Component Variance</th>
</tr>
</thead>
<tbody>
<tr>
<td>PSB</td>
<td>6</td>
<td>.02433</td>
<td>.004844</td>
<td>.001978</td>
<td>.01925 to .02942</td>
<td>.020</td>
<td>.033</td>
<td></td>
</tr>
<tr>
<td>PVB</td>
<td>6</td>
<td>.02433</td>
<td>.003204</td>
<td>.001308</td>
<td>.02097 to .02770</td>
<td>.021</td>
<td>.029</td>
<td></td>
</tr>
<tr>
<td>FB</td>
<td>6</td>
<td>.02850</td>
<td>.011450</td>
<td>.004674</td>
<td>.01648 to .04052</td>
<td>.019</td>
<td>.043</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>18</td>
<td>.02572</td>
<td>.007250</td>
<td>.001709</td>
<td>.02212 to .02933</td>
<td>.021</td>
<td>.043</td>
<td></td>
</tr>
<tr>
<td>Model</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fixed Effects</td>
<td></td>
<td>.007412</td>
<td>.001747</td>
<td>.02200</td>
<td>.01648 to .04052</td>
<td>.019</td>
<td>.043</td>
<td>-.000003</td>
</tr>
<tr>
<td>Random Effects</td>
<td></td>
<td>.003147(a)</td>
<td>.001747(a)</td>
<td>.02200</td>
<td>.01648 to .04052</td>
<td>.019</td>
<td>.043</td>
<td>-.000003</td>
</tr>
</tbody>
</table>

**Sources:** Authors Compilation

### Test of Homogeneity of Variances

Using Levene Statistic, it is tried to figure out the differences in terms of asset quality across bank groups.

Asset Quality

### Table-6

<table>
<thead>
<tr>
<th></th>
<th>Levene Statistic</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>9.421</td>
<td>2</td>
<td>15</td>
<td>.002</td>
</tr>
</tbody>
</table>

**Sources:** Authors Compilation

### ANOVA

Asset Quality

### Table-7

<table>
<thead>
<tr>
<th></th>
<th>Sum of Squares</th>
<th>d.f.</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>.000</td>
<td>2</td>
<td>.000</td>
<td>.632</td>
<td>.543</td>
</tr>
<tr>
<td>Within Groups</td>
<td>.001</td>
<td>15</td>
<td>.000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>.001</td>
<td>17</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sources:** Authors Compilation

Table value of \( F \) is (2, 15) = 3.68 and (2, 17) = 3.59 is lower than calculated value, so we reject the null hypothesis and accept the alternate one.

Thus we can say that there is significant difference in terms of asset quality among public sector, private sector and foreign banks.

### Robust Tests of Equality of Means

Asset Quality

### Table-8

<table>
<thead>
<tr>
<th></th>
<th>Statistic(a)</th>
<th>df1</th>
<th>df2</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Welch</td>
<td>.350</td>
<td>2</td>
<td></td>
<td>.714</td>
</tr>
<tr>
<td>Brown-Forsy</td>
<td>.632</td>
<td>2</td>
<td></td>
<td>.557</td>
</tr>
</tbody>
</table>

**Sources:** Authors Compilation

**Note:** a Asymptotically F distributed.

We can use GNPA ratio to compute asset quality of banks. Further, from the analysis, we can say although private sector banks are performing little better than public sector banks, but foreign banks are witnessing more stress in terms of volatile asset quality. We can further say that if we want to estimate risk using the status of asset quality across bank groups, in spite of prevalence of
poor asset quality, our private sector banks had been showing more prone to risk compared to other two. Finally, we can say thatInspite of deceleration in asset quality over the years; the overall banking system is prudent enough to tackle shocks.

**CONCLUSION**

To conclude we can say that, although we can see a constant increase in terms of deterioration of asset quality of Indian banks, but there are significant differences exist among the three sector of banks vis-a-vis Public Sector Banks, Private Sector Banks and Foreign Banks. In terms of asset quality, still the overall banking sector is in the position to withstand risk and hence we can say that Indian banking sector is in low-moderate risk frame, thanks to the stringent measures adopted by RBI.

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( Editor-In-Chief)
A STUDY ON AWARENESS AND PERCEPTION OF TAX PAYERS ON NEW SELF-ASSESSMENT SCHEME IN BBMP CORPORATION

Selvi Sathyarayanan31 Dr. Sivagnanasithi32

ABSTRACT

Property tax is one of the main sources of revenue for the state government. The revenue generation is possible if the taxpayers have good understanding about the system in existence and adhere to the norms of the corporation. This study examines taxpayers’ views on their level of tax knowledge and perceived complexity of the income tax system. Further, the study attempts to delve in the underlying reasons for non-compliance. Results suggest that taxpayers have inadequate technical knowledge and perceive tax system as complex. Tax knowledge and tax complexity are viewed as contributing factors towards non-compliance behavior among taxpayers. For the purpose of study survey questionnaire has been used to collect Primary data and Bangalore is taken into consideration. The collected data were processed and presented in the form of tables and figures and the analysis was made with help of relevant statistical tools such as percentage Mean and Standard Deviation.

KEYWORDS

Property Tax, Tax Knowledge, Perceived Complexity, Awareness, Revenue etc.

INTRODUCTION

Property taxes are the major source of revenue of Urban Local Bodies in India. Self-Assessment Scheme helps taxpayers to understand the assessment process and removes the discretion of the assessors to assess the properties in an arbitrary manner. It increases taxpayer’s involvement by allowing them to calculate their own assessment within pre-established guidelines. Self-assessment property tax is a process in which a taxpayer uses a form to report all taxable income on their property and includes their calculation of how much tax they owe (usually with the payment as well). Introduction of Self-Assessment Scheme brought in transparency and passed the onus for determination and payment of property tax on to the property owner. The present study conducted by the researcher tries to analyze the perception and awareness level of the taxpayers in the city about the new self-assessment scheme.

STATEMENT OF PROBLEM

In the year 2007, Bruhat Bangalore Mahanagara Palike (BBMP) was formed in the year 2007 by merging seven city municipal councils, one-town municipal councils and certain villages. They introduced CVS for new properties and the property owners were asked to switch over to CVS from next financial year. Former mayors condemned CVS and BBMP proposed SAS based on Unit Area Value method. In the year 2008, BJP government deferred CVS and SAS was approved. BBMP started collecting property tax based on the new scheme of SAS (UAV) from February 2009. There has been a mixed opinion about the method to be followed to assess the property tax. The property tax reforms brought in by the Karnataka Government over a period has created confusions and chaos among the property owners. There is lack of clarity about the procedure to be followed for assessment of the properties.

The study entitled ‘Awareness and Perception of property owners in Bangalore towards new Self-Assessment Scheme in BBMP Corporation’.

REVIEW OF LITERATURE

Ravi M. V. (2016) in his work aims to understand the need, awareness, perception of taxpayers on Direct tax code. For this purpose of study survey questionnaire was used to collect primary data from Bengaluru city. The data was analyzed using percentage mean, standard deviation and chi-square test. From the results generated, it was concluded that respondents opinioned that restructuring Indian taxation is necessary. Respondents perceived the present tax system is not yielding adequate tax revenue and is difficult to calculate and understand.

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32Assistant Professor, Chikkanna Government Arts College, Tamil Nadu, India, aswathtn@gmail.com
Joseph Murangira (2014) in his work examines Adam smith’s four canons of taxation. He states these canons provide a framework within which various tax system proposals may be considered and can be used to set a basis for assessment of propriety of property tax rates. The outcome of the study showed that Kampala capital city authority satisfies a number of canons of a good tax system in theory. However, the practice in KCCA shows that the system misses most of these principles failure in service delivery in turn discourages ratepayers in payment of tax and high administration cost in an effort to enforce payment. These are key areas, which KCCA must work to ensure the efficient operation of property rates tax system.

Razak Abubakari Abdul and Adgala J Christopher (2014) in their study examined that it is the individual’s awareness and taxpayers attitudes influences the individual payment of tax on time. The perceived set of benefits claimed from the provision of public goods and services particularly physical infrastructure is high. The results states that individuals in the city of Ghana did not completely understand the tax system. There is significant positive statistical was found to exist between level of understanding and tax compliance decision.

RESEARCH DESIGN

A research design is the plan of a research study. The design of a study defines the study type. The function of a research design is to ensure that the evidence obtained enables us to answer the initial question as unambiguously as possible.

The Research Objectives Pursued are:

- To bring out the awareness level of the tax payers about the new self-assessment scheme.
- To understand the significant relationship of the age of the taxpayers and perception of taxpayers relating to the new scheme introduced in Bengaluru city.

Type of Study: This study is exploratory in nature, which was conducted to study the awareness and perception of property owners towards the Self-Assessment Scheme. This study was exploratory in nature because the focus of the study is to gain more insight and knowledge about the Self-Assessment scheme and to determine the awareness level of this scheme.

Type of Research: Descriptive and Analytical research is the most appropriate for this study. The descriptive research studies are those studies, which is concerning the characteristics of a group.

Tools for Data Collection: Primary data is used in this study. Structured questionnaires were delivered directly to individual to collect the information.

Sample Size: Empirical data for this study were gathered from the property owners from different zones in Bangalore district. In total 609 surveys were circulated and a response of 401 were received; signifying a response rate of 65.845 % Respondents predominantly were from different clusters of various zones and a total 11 questions in the questionnaire were given to analyze the respondents awareness level and perception of the new self-assessment scheme.

LIMITATIONS OF STUDY

The study observes the following limitations. Not all the zones were included while the study was undertaken. Bangalore is a vast district with around 8 zones; therefore, collection of data was not possible from all the clusters in the zone. This may however lead to biased inferences.

DATA ANALYSIS

<table>
<thead>
<tr>
<th>Source</th>
<th>Table 1: New Scheme</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Descriptive Statistics</td>
</tr>
<tr>
<td></td>
<td>N</td>
</tr>
<tr>
<td>Availability of forms and handbook on property tax</td>
<td>401</td>
</tr>
<tr>
<td>Registration procedure of property</td>
<td>401</td>
</tr>
<tr>
<td>Convenient access to service</td>
<td>401</td>
</tr>
<tr>
<td>Extent of transparency</td>
<td>401</td>
</tr>
<tr>
<td>Responsibility of officers</td>
<td>401</td>
</tr>
<tr>
<td>Convenient location</td>
<td>401</td>
</tr>
<tr>
<td>Overall New Scheme</td>
<td>401</td>
</tr>
</tbody>
</table>

**Sources:** Authors Compilation
On the analysis of the table-1, New Scheme achieved the overall mean score of 3.36, Availability of forms and handbook on property tax achieved the highest mean score of 3.54, Registration procedure of property achieved the mean score of 3.46, Convenient access to service achieved the mean score of 3.43, Responsibility of officers achieved the mean score of 3.20 and Convenient location achieved the mean score of 3.36 while Extent of transparency achieved the lowest mean score of 3.19. For all the above constructs std. deviation varied from 0.70 to 1.03.

Graph-1: Awareness level of the New Scheme

Source: Authors Compilation

Table-2: Awareness level of the New Scheme

<table>
<thead>
<tr>
<th>Descriptive Statistics</th>
<th>N</th>
<th>Min</th>
<th>Max</th>
<th>Mean</th>
<th>Std. Dev</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessment of property value is based on Location / size / age</td>
<td>401</td>
<td>1</td>
<td>5</td>
<td>2.94</td>
<td>1.36</td>
</tr>
<tr>
<td>Properties are assessed every year</td>
<td>401</td>
<td>1</td>
<td>5</td>
<td>3.02</td>
<td>1.65</td>
</tr>
<tr>
<td>Assessment relate to municipal tax to know the fair value of property</td>
<td>401</td>
<td>1</td>
<td>5</td>
<td>3.04</td>
<td>1.49</td>
</tr>
<tr>
<td>Assessment change every time</td>
<td>401</td>
<td>1</td>
<td>5</td>
<td>3.21</td>
<td>1.51</td>
</tr>
<tr>
<td>Property Owners are taxed different rates</td>
<td>401</td>
<td>2</td>
<td>5</td>
<td>4.36</td>
<td>0.95</td>
</tr>
<tr>
<td>Property gets re-assessed in case of damages</td>
<td>401</td>
<td>1</td>
<td>5</td>
<td>3.64</td>
<td>1.19</td>
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<tr>
<td>Assessment services request you to furnish Income / Expense information about property</td>
<td>401</td>
<td>1</td>
<td>5</td>
<td>3.62</td>
<td>1.20</td>
</tr>
<tr>
<td>Income / Expense information are kept confidential</td>
<td>401</td>
<td>1</td>
<td>5</td>
<td>3.65</td>
<td>1.26</td>
</tr>
<tr>
<td>Is Appeal for property tax easy?</td>
<td>401</td>
<td>1</td>
<td>5</td>
<td>4.01</td>
<td>1.07</td>
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<tr>
<td>Often you disagree with your assessment</td>
<td>401</td>
<td>1</td>
<td>5</td>
<td>3.86</td>
<td>1.05</td>
</tr>
<tr>
<td>BBMP officials address your disagreement</td>
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<td>1</td>
<td>5</td>
<td>3.00</td>
<td>1.20</td>
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<td>Awareness New Scheme</td>
<td>401</td>
<td>1.55</td>
<td>5.00</td>
<td>3.49</td>
<td>0.55</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

On the analysis of the table-2, Awareness New Scheme achieved the overall mean score of 3.49, Property Owners are taxed different rates achieved the highest mean score of 4.36, Properties are assessed every year achieved the mean score of 3.02, Assessment relate to municipal tax to know the fair value of property achieved mean score of 3.04, Assessment change every time achieved the mean score of 3.21, Property gets re-assessed in case of damages achieved the mean score of 3.64, Assessment services request you to furnish Income / Expense information about property achieved mean score of 3.62, Income / Expense information are kept confidential achieved the mean score of 3.65, Is Appeal for property tax easy? Achieved the mean score of 4.01, Often you disagree with your assessment achieved the mean score of 3.86 and BBMP officials address your disagreement achieved the mean score of 3.00 while Assessment of property value is based on Location / size / age achieved the lowest mean score of 2.94. For all the above constructs STD deviation varied from 0.55 to 1.51.
### Table-3: Age

<table>
<thead>
<tr>
<th>Sources: Authors Compilation</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Source: New Scheme</th>
<th>N</th>
<th>Mean</th>
<th>Std. Dev</th>
<th>F Value</th>
<th>Sig Value</th>
<th>Multiple Comparison</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opinion_New Scheme</td>
<td>20-35 years (A)</td>
<td>141</td>
<td>3.54</td>
<td>0.72</td>
<td>2.42</td>
<td>0.07</td>
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<tr>
<td>Grounds_New Scheme</td>
<td>35-50 years (B)</td>
<td>160</td>
<td>3.51</td>
<td>0.75</td>
<td>2.06</td>
<td>0.11</td>
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<tr>
<td>Opinion_New Scheme</td>
<td>50-65 years (C)</td>
<td>87</td>
<td>3.47</td>
<td>0.62</td>
<td>3.47</td>
<td>0.06</td>
</tr>
<tr>
<td>Grounds_New Scheme</td>
<td>Above 65 years (D)</td>
<td>13</td>
<td>3.00</td>
<td>0.35</td>
<td>3.00</td>
<td>0.35</td>
</tr>
</tbody>
</table>

#### Sources: Authors Compilation

**Opinion_New Scheme:** The 20-35yrs respondents achieved the mean score of 3.54. 35-50yrs respondents achieved the mean score of 3.51. 50-60yrs respondents achieved the mean score of 3.47, above 65yrs respondents achieved the mean score of 3.00. The analysis of the above table brings out that the F value is 2.42 and significance is 0.07. Since the significance value is more than 0.05, the mean difference existing about the perception of this factor is not significant at 5% level. Hence, null hypothesis is accepted.
Grounds_New Scheme: The 20-35yrs respondents achieved the mean score of 3.47. 35-50yrs respondents achieved the mean score of 3.28. 50-60yrs respondents achieved the mean score of 3.35. The analysis of the above table brings out that the F value is 2.06 and significance is 0.11. Since the significance value is more than 0.05, the mean difference existing about the perception of this factor is not significant at 5% level. Hence, null hypothesis is accepted.

Opinion_New Bill Colle: The 20-35yrs respondents achieved the mean score of 3.59. 35-50yrs respondents achieved the mean score of 3.52. 50-60yrs respondents achieved the mean score of 3.52, above 65yrs respondents achieved the mean score of 2.77. The analysis of the above table brings out that the F value is 4.58 and significance is 0.00. Since the significance value is less than 0.05, the mean difference existing about the perception of this factor is significant at 5% level. Hence, null hypothesis is rejected and alternate hypothesis is accepted.

Opinion_Old Bill Colle: The 20-35yrs respondents achieved the mean score of 3.36. 35-50yrs respondents achieved the mean score of 3.25. 50-60yrs respondents achieved the mean score of 3.09, above 65yrs respondents achieved the mean score of 2.77. The analysis of the above table brings out that the F value is 4.19 and significance is 0.01. Since the significance value is less than 0.05, the mean difference existing about the perception of this factor is significant at 5% level. Hence, null hypothesis is rejected and alternate hypothesis is accepted.

Awareness_New Scheme: The 20-35yrs respondents achieved the mean score of 3.57. 35-50yrs respondents achieved the mean score of 3.42. 50-60yrs respondents achieved the mean score of 3.56, above 65yrs respondents achieved the mean score of 2.87. The analysis of the above table brings out that the F value is 8.41 and significance is 0.00. Since the significance value is less than 0.05, the mean difference existing about the perception of this factor is significant at 5% level. Hence, null hypothesis is rejected and alternate hypothesis is accepted.

Overall: The 20-35yrs respondents achieved the mean score of 3.51. 35-50yrs respondents achieved the mean score of 3.40. 50-60yrs respondents achieved the mean score of 3.40, above 65yrs respondents achieved the mean score of 2.95. The analysis of the above table brings out that the F value is 5.19 and significance is 0.00. Since the significance value is less than 0.05, the mean difference existing about the perception of this factor is significant at 5% level. Hence, null hypothesis is rejected and alternate hypothesis is accepted.

Graph-3: Age

FINDINGS

Based on analysis done the following are the researcher’s findings:

- Most of the taxpayers perceive that the forms and handbook on property tax is easily available.
- The registration procedure of property is made easy under the new self-assessment scheme.
- Taxpayers perceive that there is convenient access to service.
- There is sufficient amount of transparency in the system.
- The extent with which the services are provided makes feel that the officers are responsible.
- Most of the collection centers are in convenient location.
The taxpayers are aware that the Assessment of property value is based on Location / size / age.
Properties are assessed every year and assessment change every time and taxpayers perceive that the rates charged are different across the zones.
Property Owners are perceive that the Assessment services request you to furnish Income/Expense information about property and Income /Expense information are kept confidential.

SUGGESTIONS

The suggestions to Bruhat Bangalore Mahanagara Palike (BBMP) regarding improvement in the property tax system are:
1. The staffs at BBMP should be given proper training with regard to the detailed information about the scheme to clarify the doubts of the property owners. Though handbook is available, one of the main concerns of the property owners was unavailability of handbook on property tax in enough numbers so that every property owner can own one. The BBMP should ensure that the handbook is available at each center. Not all officers were accountable to what they did; therefore, the BBMP should take effective measures to ensure that the officers are responsible and accountable enough. Filing or returns procedure should be simplified for the property without an identification number.

CONCLUSION

Overall study conducted on the awareness and perception of the property owners, the researcher opines that the appeal for property tax is made easy. In addition, whenever there is disagreement in the assessment BBMP officials address their disagreement. The objective for which the new scheme was introduced is satisfactory.

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DEREGULATION OF SAVINGS BANK INTEREST RATES & ITS IMPACTNESS

Rajni T. V. 33 Dr. Aswathanarya T. 34

ABSTRACT

This paper seeks to provide deregulation of savings bank interest rates and its impact on accumulation of savings, agricultural lending’s, term deposits. Of late banking industry has been subjected to various forms of deregulation. The policy framers believe that improving the efficiency and performance of financial systems is better through deregulatory polices aiming at enhanced price, service, and product services (Smith 1997). Deregulation has resulted in improvement of both efficiency and productivity of Norwegian bank (Berq et al. 1992). Berger and Humphrey (1997) stated that the consequences of deregulation might essentially depend upon the industry conditions. The other set of researchers like Bauer et al (1993), Elsiani et al. (1995) expressed that deregulation measures pertaining to deposit rates have not changed the efficiency levels in US banking industry.

KEYWORDS

Deregulation, Savings Bank Interest Rates Small Scale Industries, Agriculture etc.

INTRODUCTION

Financial deregulation is most discussed in the financial markets. Deregulation process would be effective only if it is promoted effectively. Narasimhan Committee (1991) has almost concentrated on operational efficiency and profitability. Instability in Indian banking system offers a good fertile ground for evolving the notion of deregulation in the context of banking.

Indian reform experience is not only confined to interest but also about competitions and performance. There exist couple evidence of increased competition in the lending market in the last stages of the reform process, at the time of tightening of prudential norms. The co-existence of deregulation and prudential norms seems to promote competition and consequently cost technology progress.

Savings deposits is a hybrid product consisting the salient features of both a current account and a term deposit account. Further a current account is basically confined for transaction purposes and is maintained by company, public enterprises and business firms for meeting day-to-day expenses and savings accounts are maintained for dual purposes transactions and savings intention either by individuals or households mostly. However, the maintenance of savings book deposit accounts requires transaction cost but the exact cost structure is not readily available.

Relationship between Savings Rates and Deposit Mobilization

Savings may be private and public. To encourage private savings the real interest rates should be positive. In order to mobilize a sizeable resources innovative schemes like investment bonds and innovative savings schemes should be introduced. Finally, these mobilized savings are diverted to the productive sectors of the economy and this ensures economic growth. McKinnon (1973) and Shaw (1973) in their research work they have highlighted that higher savings rates improves the savings and investment.

The focus on any financial system is to collect financial resources from surpluses sector and to invest in the deficit sector to facilitate business transaction and economic development based on the monetary and fiscal policy. If interest payment rates are attractive, the savings depositors will conformed to deposit. Further, the borrowers are also highly satisfied with interest payment and useful to the banks for parting with liquidity by the lenders.

OBJECTIVES OF STUDY

The study has been taken up with the following objectives:

- To study the related literature about the deregulation of interest rates.
- To study the impact after introduction of savings banks deregulation.
- To study the accumulation of savings in commercial banks.
- To study the assistance lend to agriculture and small scale industries.

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34Assistant Professor, Government First Grade College, Karnataka, India, aswathn@gmail.com
Hypotheses

- There is no increase in savings after deregulation October 25th, 2011 in Indian Commercial banks.
- Domestic household savings are not forming a major composition in gross savings from different sectors.
- Agricultural lending short term is showing regressive tendency.
- Lending to small-scale industries also decreasing.

RESEARCH METHODOLOGY

The study is based on secondary data. Data compiled from RBI different statistical handbooks. In addition, data obtained from journals and websites. Chi-square statistical tool has been applied to know the level of variability in savings deposits and found progressive tendency.

LIMITATION

The study is only confined to secondary data and any generation requires further in depth study.

REVIEW OF LITERATURE

Agok, S. Atong et al. (2015) expressed that banking sector regulatory authority needs to ensure that specific policy tools such as the minimum re-discount rate, maximum lending rate, liquidity ratio, monetary policy rate are effectively managed to induce higher savings, increase credit supply, stimulate investment and hence positively impact on the performance of the banking sector and enhance economic growth in general.

Ahmad, H. (2003) stated that interest rate has significant positive impact on loans advances of deposit money banks.

Eregha (2010) examined variations in interest rates and investment deregulation in Nigeria. The study employed dynamic model of two equations using instrumental variable technique of estimation on data from the world development indicator. The study revealed that variation in interest rates played a negative and highly significant role in the investment decision on the economy and demand for credit had negative and significant influence on interest rates variations in both the short run and long run. The researcher has noted that though investment has an indirect relationship with interest rate variation, other variables such as debt burden, economic stability, foreign exchange, shortage and lack of infrastructure affected gross domestic investment.

Another study conducted by Drees et al.(1998) on the impact of interest deregulation on economic growth of Norway, Finland and Sweedan that with interest rates deregulation, interest rates surged in these countries leading to an increased economic growth.

Berger et al. (2000) report that the empirical evidence is mixed and deregulation seems to have had a positive effect on the banking sectors in some countries but not in others.

Arestis and Demetriades (1999) expressed that the outcome of deregulation policies may reflect several country-specific demand and supply conditions of the banking industry prior to deregulation. Further, the reduction of regulatory costs may not result in improvements in the absence of increased competition.

Manidas and Fernandez De Guavar 2004, Fernandez De Guevara et al. (2005) reported that the empirical evidence provided by New Empirical Industrial organization (NEIO) studies however, fails to identify increased competition following the rapid deregulation and liberalization process in the EU area.

Berglof (1997), Allen and Gale (2000), viewed that the stronger the competitive force, the less relevant the ownership structure for productive efficiency and vice versa.

Sensarma (2005) said that empirical results also provide little evidence to suggest that public sector banks are less cost efficient than their domestic private and foreign counterparts.

A study by Megginson (2005) reveals that domestic private banks are often found to perform better than government owned banks, although some disagreement remains.

Berger et al. (2000) and Berger et al. (2004) have stated in their research work that foreign banks are found to perform better than domestic banks in developing countries. While in developed countries, the opposite is true.
Deregulation seems to increase efficiency for all the banks but does not result in inter ownership convergence.

SURVEY FINDINGS

Table-1 reveals data about savings deposits with commercial banks from 2000-01 to 2015-16. Savings bank interest rates was deregulated on October 25th, 2011. Table shows clearly an increase in savings deposits 2000-01 to 2015-16. The growth rates is in the form of physical assets. The total gross savings as per RBI data stood at 29939.26; 31812.63, 34759.35 Rs. in billions for the years 2011-12, 2012-13 and 2013-14 respectively. Out of this savings in physical assets represents 44.67%, 40.38% and 34.87% for the years said above respectively. The chi-square table reveals that there is an increase in savings deposits and fails to accept the null hypotheses.

Table-2 reveals ownership pattern of household savings deposits for the years 2011-12, 2012-13 and 2013-14. A greater portion of savings is in the form of physical assets. The total gross savings as per RBI data stood at 29939.26; 31812.63, 34759.35 Rs. in billions for the years 2011-12, 2012-13 and 2013-14 respectively. Out of this savings in physical assets represents 44.67%, 40.38% and 34.87% for the years said above respectively. The chi-square table analysis reveals that the calculated value being higher than the table value and it fails to accept the null hypotheses. Therefore, the alternative is accepted.

Table-3 speaks about savings bank interest rates from 2002-03 to 2016-17. It was 3.5% constant up to 2010-11 and 4% from 11-12 to until present.

Table-4 highlights about schedule of banks selects aggregates. Table-4 reveals data about time deposits demand deposits with an information about aggregates. Table reveals an increase in demand deposits by 928.97%. It was Rs. 8200.66 billion during 2002-03 and rose to Rs. 84382.94 billion shows a high significant overall improvement. After deregulation of saving banks interest rates there is upward tendency in the demand deposits. Demand deposits after deregulation stood at Rs. 52837.52 billion and touched Rs. 8382.94 billion by the end of 2016 (July) with an all-round improvement and percentage stood at 59.70%. This clearly explains about raising tendency of demand deposits of commercial banks.

Table-5 reveals data about scheduled commercial banks advance to agriculture short term from 2000-01 to 2015-16. Loans were issued to cooperatives, SCBs, and RRBs. Loan issue reveals a tendency of increase.

Table-6 reveals information about commercial banks advance to small scale industries and allied services loans to small enterprises stood at the 601.41 billion as on 2000-01 and rose to 9957.12 billion by the end of 2015-16 exhibiting on astronomical increase over 15 years.

CONCLUSION

Savings Bank Interest rates deregulated by Oct 25th 2011. It is too early to comment on deregulation that lead to product innovation. Bankers should work to design innovative savings bank products. Further, deregulation of the interest will make the rates flexible along with other interest rates depending upon market conditions. Banks independency is assumed as far as deciding interest rates disregarding cost of savings deposits.

In countries like Canada, Japan, Australia, New Zealand, UK and USA interest rates are determined by commercial banks themselves. Many countries in Asia experienced with interest rate deregulation to support overall development and growth policies.

This paper started to write with an intention of measuring the impact of deregulation of savings bank interest rates on savings formation and investment in small scale and short-term agricultural loans and found that savings and investment are increasing with an intention of attainment of growth in the economy.

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49. Retrieved from https://ideas.repec.org/a/mcb/jmoncb/v34y2002i1p254-82.html
Table 1: Savings Deposits with Commercial Banks (Rs. Billion)

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<thead>
<tr>
<th>Year-01</th>
<th>Indian Bank</th>
<th>Foreign Bank</th>
<th>Total</th>
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<td>2000-01</td>
<td>2174.52</td>
<td>55.30</td>
<td>2229.82</td>
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<td>2001-02</td>
<td>2721.19</td>
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Note: Data are of Fortnightly Frequency
Sources: Authors Compilation

Hypotheses

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<th>There is no increase in savings after deregulation</th>
<th>Reject</th>
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<tbody>
<tr>
<td>H1:</td>
<td>There is increase in savings after deregulation</td>
<td>Accept</td>
</tr>
</tbody>
</table>

Chi-Table

Calculated value 5001.2266, d.f. = 5, TV = 11.070 significance level = 5%.

Chi-square Analysis

Since the calculated value being greater than the TV @ 5% level of significance with d.f. = 5, fails to accept the null hypotheses.
Table-2: House Hold savings at Current Prices

<table>
<thead>
<tr>
<th>Household Sector Savings</th>
<th>2011-12</th>
<th>2012-13</th>
<th>2013-14</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial savings</td>
<td>6434.27</td>
<td>6942.35</td>
<td>8194.50</td>
</tr>
<tr>
<td>Gross financial savings</td>
<td>9335.43</td>
<td>10244.20</td>
<td>12972.54</td>
</tr>
<tr>
<td>Less financial liabilities</td>
<td>2901.17</td>
<td>3302.18</td>
<td>4598.40</td>
</tr>
<tr>
<td>Savings in physical assets</td>
<td>13375.52</td>
<td>12846.20</td>
<td>12123.02</td>
</tr>
<tr>
<td>Savings in the form of valuables</td>
<td>336.35</td>
<td>372.67</td>
<td>334.27</td>
</tr>
</tbody>
</table>

Sources: Hand book of statistics RBI

Hypotheses

| H₀ | The household savings of respondents are not variable | Reject |
| H₁ | The household savings of respondents are variable   | Accept |

Chi-square Table

Calculate value = 368288.81, sig. level 5%, d.f. = (r-1) (c-1) = (5-1) (3-1) = 4 × 2 = 08
TV = 15.507

Decision: Since the calculated value being higher than the TV @ 5% level of significance with d.f. = (r-1) (c-1) = 08, fails to accept null hypotheses. Therefore, the alternative is accepted.

Table-3: Rate of Interest

<table>
<thead>
<tr>
<th>Years</th>
<th>Savings#</th>
<th>3-5</th>
<th>Term Deposit*</th>
<th>Rates</th>
<th>Lending</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1-3</td>
<td></td>
<td>Above 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2002-03</td>
<td>3.5</td>
<td>4.25-6.00</td>
<td>5.50-6.25</td>
<td>5.50-6.25</td>
<td>10.75-11.50</td>
</tr>
<tr>
<td>2003-04</td>
<td>3.5</td>
<td>4.00-5.25</td>
<td>5.25-5.30</td>
<td>5.25-5.50</td>
<td>10.25-16.00</td>
</tr>
<tr>
<td>2004-05</td>
<td>3.5</td>
<td>5.25-5.75</td>
<td>5.75-6.25</td>
<td>6.25</td>
<td>10.25-11.00</td>
</tr>
<tr>
<td>2005-06</td>
<td>3.5</td>
<td>6.00-6.75</td>
<td>6.25-7.00</td>
<td>6.5-7.0</td>
<td>10.25-12.75</td>
</tr>
<tr>
<td>2006-07</td>
<td>3.5</td>
<td>6.75-8.5</td>
<td>7.75-9.5</td>
<td>7.75-8.5</td>
<td>12.25-14.75</td>
</tr>
<tr>
<td>2007-08</td>
<td>3.5</td>
<td>8.00-8.75</td>
<td>8.00-8.75</td>
<td>8.50-9.0</td>
<td>12.25-15.75</td>
</tr>
<tr>
<td>2008-09</td>
<td>3.5</td>
<td>8.00-8.75</td>
<td>8.00-8.50</td>
<td>7.75-8.5</td>
<td>11.50-16.75</td>
</tr>
<tr>
<td>2009-10</td>
<td>3.5</td>
<td>6.00-7.00</td>
<td>6.5-7.5</td>
<td>7.0-7.71</td>
<td>11.0-15.758</td>
</tr>
<tr>
<td>2010-11</td>
<td>3.5</td>
<td>8.25-9.00</td>
<td>8.25-8.75</td>
<td>8.5-8.75</td>
<td>8.25-9.5</td>
</tr>
<tr>
<td>2011-12</td>
<td>4.0</td>
<td>9.25</td>
<td>9.25</td>
<td>8.5-9.25</td>
<td>10.10-7.5</td>
</tr>
<tr>
<td>2012-13</td>
<td>4.0</td>
<td>8.75-9.0</td>
<td>8.75-9.5</td>
<td>8.4-9.5</td>
<td>9.70-10.25</td>
</tr>
<tr>
<td>2013-14</td>
<td>4.0</td>
<td>8.75-9.25</td>
<td>8.75-9.10</td>
<td>8.5-9.10</td>
<td>10.10-25</td>
</tr>
<tr>
<td>2014-15</td>
<td>4.0</td>
<td>8.55-8.75</td>
<td>8.5-8.75</td>
<td>8.25-8.5</td>
<td>10.10-25</td>
</tr>
<tr>
<td>2015-16</td>
<td>4.0</td>
<td>7.25-7.50</td>
<td>7.0-7.5</td>
<td>7.00-7.30</td>
<td>9.30-9.70</td>
</tr>
<tr>
<td>2016-17</td>
<td>4.0</td>
<td>7.2-7.25</td>
<td>7.7-7.5</td>
<td>7.00</td>
<td>8.9-9.15</td>
</tr>
</tbody>
</table>

Note: *Data on deposits and lending rates relates to 5 major public sector banks up to 2003-04. While for the subsequent years, they related to 5 major banks.

#Saving deposits rates from 2011-12 onwards relate to balance up to Rs. 1 lakh. Saving deposits rate was deregulated w.e.f. October 25, 2011.

As on July 15, 2016.

Sources: Scheduled Commercial Banks (Excluding RRBs) & RBI

Table-4: Schedule Banks Select Aggregates (Rs. in Billions)

<table>
<thead>
<tr>
<th>Years</th>
<th>Time Deposits</th>
<th>Demand Deposits</th>
<th>Aggregate</th>
</tr>
</thead>
<tbody>
<tr>
<td>2001</td>
<td>1425.52</td>
<td>8200.66</td>
<td>9626.18</td>
</tr>
<tr>
<td>2002</td>
<td>1530.48</td>
<td>9503.12</td>
<td>11033.60</td>
</tr>
<tr>
<td>2003</td>
<td>1702.89</td>
<td>11105.64</td>
<td>12808.63</td>
</tr>
<tr>
<td>2004</td>
<td>2250.22</td>
<td>12793.94</td>
<td>15044.16</td>
</tr>
<tr>
<td>2005</td>
<td>2480.28</td>
<td>14521.71</td>
<td>17001.98</td>
</tr>
<tr>
<td>2006</td>
<td>3646.40</td>
<td>17444.09</td>
<td>21090.49</td>
</tr>
<tr>
<td>2007</td>
<td>4297.31</td>
<td>21822.30</td>
<td>26119.33</td>
</tr>
</tbody>
</table>
### Table-5: Direct Institutional Credit for Agriculture and Allied Activities - Short-Term

<table>
<thead>
<tr>
<th>Year</th>
<th>Co-ops</th>
<th>SCBs</th>
<th>RRBs</th>
<th>Total</th>
<th>Co-ops</th>
<th>SCBs</th>
<th>RRBs</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2000-01</td>
<td>158.56</td>
<td>107.04</td>
<td>30.95</td>
<td>323.55</td>
<td>181.68</td>
<td>154.42</td>
<td>36.92</td>
<td>373.02</td>
</tr>
<tr>
<td>2001-02</td>
<td>216.70</td>
<td>126.61</td>
<td>38.10</td>
<td>381.41</td>
<td>215.40</td>
<td>188.82</td>
<td>48.12</td>
<td>452.34</td>
</tr>
<tr>
<td>2002-03</td>
<td>236.29</td>
<td>168.25</td>
<td>48.34</td>
<td>452.88</td>
<td>245.18</td>
<td>232.11</td>
<td>64.95</td>
<td>542.24</td>
</tr>
<tr>
<td>2003-04</td>
<td>293.26</td>
<td>241.34</td>
<td>61.33</td>
<td>595.93</td>
<td>308.08</td>
<td>319.82</td>
<td>76.64</td>
<td>704.54</td>
</tr>
<tr>
<td>2004-05</td>
<td>318.87</td>
<td>299.78</td>
<td>98.83</td>
<td>717.48</td>
<td>324.81</td>
<td>427.98</td>
<td>109.80</td>
<td>862.59</td>
</tr>
<tr>
<td>2005-06</td>
<td>356.24</td>
<td>456.44</td>
<td>128.16</td>
<td>940.84</td>
<td>341.40</td>
<td>599.71</td>
<td>138.77</td>
<td>1079.88</td>
</tr>
<tr>
<td>2006-07</td>
<td>407.96</td>
<td>652.45</td>
<td>170.31</td>
<td>1230.72</td>
<td>377.64</td>
<td>760.06</td>
<td>187.07</td>
<td>1324.77</td>
</tr>
<tr>
<td>2007-08</td>
<td>473.90</td>
<td>682.43</td>
<td>203.77</td>
<td>1360.10</td>
<td>436.96</td>
<td>961.52</td>
<td>227.48</td>
<td>1625.96</td>
</tr>
<tr>
<td>2008-09</td>
<td>480.22</td>
<td>1077.66</td>
<td>228.51</td>
<td>1786.39</td>
<td>456.86</td>
<td>1262.85</td>
<td>266.52</td>
<td>1986.23</td>
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<tr>
<td>2009-10</td>
<td>569.46</td>
<td>1246.46</td>
<td>305.29</td>
<td>2121.21</td>
<td>357.17</td>
<td>1676.23</td>
<td>336.63</td>
<td>2370.03</td>
</tr>
<tr>
<td>2010-11</td>
<td>690.38</td>
<td>1460.63</td>
<td>385.60</td>
<td>2536.61</td>
<td>496.45</td>
<td>1932.62</td>
<td>406.63</td>
<td>2835.70</td>
</tr>
<tr>
<td>2011-12</td>
<td>818.29</td>
<td>2178.97</td>
<td>470.11</td>
<td>3467.37</td>
<td>445.17</td>
<td>2690.30</td>
<td>465.80</td>
<td>3601.27</td>
</tr>
<tr>
<td>2012-13</td>
<td>1025.92</td>
<td>767.77</td>
<td>577.57</td>
<td>2371.22</td>
<td>766.22</td>
<td>3534.25</td>
<td>552.55</td>
<td>4851.02</td>
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<tr>
<td>2013-14</td>
<td>1135.74</td>
<td>706.46</td>
<td>855.36</td>
<td>3335.72</td>
<td>826.20</td>
<td>968.57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014-15</td>
<td>846.86</td>
<td>929.53</td>
<td>826.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015-16</td>
<td>984.12</td>
<td>968.57</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Sources:** Hand book of Statistics, RBI

### Table-6: Scheduled Commercial Banks' Advances to Small-Scale Industries and Allied Services - Outstanding

<table>
<thead>
<tr>
<th>Year</th>
<th>Small Enterprises</th>
<th>Balance Outstanding</th>
<th>For setting up of Industrial Estate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Small Enterprises</strong></td>
<td><strong>Small Road &amp; Water Transport Operators</strong></td>
<td><strong>1.67</strong></td>
</tr>
<tr>
<td>2000-01</td>
<td>601.41</td>
<td>49.73</td>
<td>54.51</td>
</tr>
<tr>
<td>2001-02</td>
<td>671.07</td>
<td>65.68</td>
<td>65.68</td>
</tr>
<tr>
<td>2002-03</td>
<td>647.07</td>
<td>86.31</td>
<td>86.31</td>
</tr>
<tr>
<td>2003-04</td>
<td>712.09</td>
<td>98.10</td>
<td>98.10</td>
</tr>
<tr>
<td>2004-05</td>
<td>834.98</td>
<td>149.40</td>
<td>149.40</td>
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<td>2005-06</td>
<td>1012.85</td>
<td>264.16</td>
<td>264.16</td>
</tr>
<tr>
<td>2006-07</td>
<td>1273.23</td>
<td>3.24</td>
<td></td>
</tr>
<tr>
<td>2007-08</td>
<td>2135.39</td>
<td>1.67</td>
<td></td>
</tr>
<tr>
<td>2008-09</td>
<td>2561.28</td>
<td>0.69</td>
<td></td>
</tr>
<tr>
<td>2009-10</td>
<td>3622.91</td>
<td>0.61</td>
<td></td>
</tr>
<tr>
<td>2010-11</td>
<td>4785.27</td>
<td>1.49</td>
<td></td>
</tr>
<tr>
<td>2011-12</td>
<td>5276.84</td>
<td>3.00</td>
<td></td>
</tr>
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<td>2012-13</td>
<td>6872.08</td>
<td>2.83</td>
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</tr>
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<td>2013-14</td>
<td>8510.92</td>
<td>3.24</td>
<td></td>
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<td>2014-15</td>
<td>9611.74</td>
<td>1.67</td>
<td></td>
</tr>
<tr>
<td>2015-16</td>
<td>9957.12</td>
<td>0.69</td>
<td></td>
</tr>
</tbody>
</table>

**Sources:** Authors Compilation

***
IMPACT OF UNION BUDGET ON INDIAN STOCK MARKET: 
A STUDY WITH REFERENCE TO SELECTED SECTORAL INDICES

Ashwini S. A.  Dr. Kushalappa S.

ABSTRACT

The current research is an investigation to find out the impact of Union Budget 2016-17 Announcement on the performance of selected industries in the Indian stock market. It is an event study and there are four event windows like -20 to +20, -15 to +15, -10 to +10 and -5 to +5. The first two windows are to find out the long run impact and the last two to find out the short run impact. Abnormal returns are calculated for various event windows and then T test is being used to test the influence of Union budget on the performance of the selected sectoral indices.

The study concludes that the influence of Union Budget 2016-17 is insignificant in IT Industry, Energy Industry and FMCG Industry. A significant influence is found in Infrastructure Industry.

KEYWORDS

Abnormal Returns, Budget, Indices, Stock Market etc.

INTRODUCTION

The stock market is a leading indicator, which generally reflects the economic conditions of a country. The stock market discounts everything. Accordingly, it reacts to all domestic and international factors. Those factors are like change in the economic policies, change in the political environment, and changes in the natural and social environment of the country or in the rest of the world.

Every change in the environment leads to changes in the stock market. Union Budget is an annual financial statement containing the estimated receipts and expenditures of the country. It is a powerful tool in the hands of the government to control the economic resource of the country.

The Union Budget is perhaps the most–watched event in economic policy making in India. It is the plan about the yearly income and expenditure of the country. Union Budget, which is a yearly affair, is a comprehensive display of the Government’s finances. It is the most significant economic and financial event in India. The Finance Minister puts down a report that contains Government of India’s revenue and expenditure for one fiscal year. The fiscal year runs from April 01 to March 31.

The Budget is the most extensive account of the Government’s finances, in which revenues from all sources and expenses of all activities undertaken are aggregated. It comprises the revenue budget and the capital budget. It also contains estimates for the next fiscal year called budgeted estimates.

As Union Budget is a significant event of the country, it has impact overall economy. It has a great influence on the Indian share market. The performance of companies in the stock market during the budget announcement period generally depends upon the incentives given in the budget for the respective industry.

Undoubtedly, each budget announcement is affecting every industry positively or negatively. In this study, an attempt is made by the researcher to find out the impact of Union Budget 2016-17 on selected industries.

OBJECTIVES OF STUDY

The main objective of the study is to analyze the impact of annual budget announcement on Indian stock market. The specific objectives are:

- To examine the reaction of selected industries for budget announcement.
- To find out is there any abnormal existing around the budget announcement period.

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SCOPE OF STUDY

The current study deals with impact of Union Budget on Indian Stock Market. Union budget 2016-17 is taken as the event for this event study. The event window period is 41 days consists of 20 pre announcement days and 20 post announcement days and the date of announcement is taken as the event date. The study is divided into 4 event windows like -20 to +20, -15 to +15, -10 to +10 and -5 to +5.

METHODOLOGY USED

The entire study is based on secondary data derived from various sources like, books, journals and websites. Among the various NSE sectoral indices, which represents the performance of the respective industries in the stock market, further sectoral indices like CNX IT, CNX ENERGY, CNX INFRA and CNX FMCG are taking as the sample for the study.

TECHNIQUES OF ANALYSIS

Daily returns for each sample company has been computed for the estimation period and for the event period as:

\[ R_i = \log \left( \frac{P_1}{P_0} \right) \]

Where, \( P_1 \) = Closing price of the security and \( P_0 \) is the opening price of the security.

\[ R_m = \log \left( \frac{M_P_1}{M_P_0} \right) \]

\( M_P_1 \) = Closing market price of the security and \( M_P_0 \) is the opening market price of the security.

In the next step, the market model has been utilized to calculate the expected returns on the stock.

Daily Expected Return

\[ E(R_{it}) = \alpha + \beta \times R_m + \epsilon_t \]

In the Equation \( E(R) \) is the expected return of a particular company on day \( t \), \( \alpha \) and \( \beta \) are calculated as follows

\[ \beta = \frac{n \sum xy - \sum x \sum y}{n \sum x^2 - (\sum x)^2} \]

\[ \alpha = \bar{y} - \beta \bar{x} \]

\( R (m) \) = Return on the market.

Then the abnormal return on day \( t \) is calculated as;

Abnormal Returns

Daily abnormal return on a particular day \( t \) is the excess of the actual return on the day \( t \) over the expected return on that day.

\[ AR = R_{it} - E(R_{it}) \]

Where, \( R_{it} \) is the actual daily return for the share of a company \( i \) at time \( t \), and \( E(R_{it}) \) is the expected return on the same day in the absence of an acquisition.

The study period used in this analysis is a 41 working days. In this, the day of Union Budget announcement is designated as 0. Trading days prior to the announcement are numbered event days -1, -2 and so on. The event days following the announcement are numbered +1, +2 and so on. The maximum time involved in this study is 20 pre-announcement days to 20 post announcement days.
LITERATURE REVIEW

Divya Verma Gakhar, et. al., (2015) stated in their research titled “Impact of Union Budget on Indian Stock Market” that the investors should invest more cautiously around the budget day as volatility in the market is high in short term during the budget announcement days.

Suresh Babu. S. et. al., (2013) in their research on “Impact of Union Budget on Indian Stock price” concluded that if the investors wants to make any gain from budget swings, he would have to predict the budget announcement that will cause a rise or fall in post –budget share price.

In a study titled “Testing semi- strong efficient of Indian stock market- A study on effect of union budget 2012 on six selected sectors stocks”, Vishal Kutchu (2012) From their study concluded that if an investor purchased a stock during the budget period, it would have resulted in a short term gain.

Mitesh Patel, et al, (2016) in their study “Market efficiently of Indian stock market: A study of budget announcement in Bombay stock exchange” founded that the values of co-efficient of variation and standard deviation pertaining to the market capitalization of NSE are slightly more volatile when compared to BSE. From their study, they concluded that the investors have not earned abnormal returns in the sample companies. This is corroborated by the CAAR data as well. This implies that the level of efficiency of the stock market is high.

Aabha Singhvi (2014) in her research on “Impact of Union budget on NIFTY” conducted with an objective to examine the impact of Union budget of index NIFTY of NSE in term of return. It is concluded that there is no significant impact of union budget (independent variable) on average return provided by NIFTY in short term medium term and long-term period.

RESULTS AND DISCUSSION

Table-1: Descriptive Statistics of Abnormal Returns under CNX IT around Budget Announcement

<table>
<thead>
<tr>
<th>Event Windows</th>
<th>Period</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20 to +20</td>
<td>Pre</td>
<td>-0.00117</td>
<td>20</td>
<td>0.008214</td>
<td>0.001837</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>0.0006</td>
<td>20</td>
<td>0.007052</td>
<td>0.001539</td>
</tr>
<tr>
<td>-15 to +15</td>
<td>Pre</td>
<td>-0.00193</td>
<td>15</td>
<td>0.00899</td>
<td>0.002321</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>0.001304</td>
<td>15</td>
<td>0.007266</td>
<td>0.001876</td>
</tr>
<tr>
<td>-10 to +10</td>
<td>Pre</td>
<td>0.000822</td>
<td>10</td>
<td>0.00492</td>
<td>0.001556</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>-0.00012</td>
<td>10</td>
<td>0.007071</td>
<td>0.002236</td>
</tr>
<tr>
<td>-5 to +5</td>
<td>Pre</td>
<td>-0.00241</td>
<td>5</td>
<td>0.003012</td>
<td>0.001347</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>0.002756</td>
<td>5</td>
<td>0.009244</td>
<td>0.004134</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

Table-1 shows the fact that except for -10 to +10 window, in all other short-term and long-term windows, the mean abnormal returns will be higher during the post announcement period. The mean abnormal return with -5 to +5 window is highest among the mean abnormal returns of all windows during post announcement period. The variance in the abnormal returns will be more during the pre-announcement period for long-term windows (-20 to +20 and -15 to +15) and it is vice versa for short-term windows. According to Table 2 long term, medium term and short term windows have shown negative average abnormal returns during the post budget announcement period. The variance in the abnormal returns will be more during the pre-announcement period for long-term windows (-20 to +20 and -15 to +15) and it is vice versa for short-term windows.

Table-2: Descriptive statistics of Abnormal Returns under CNX ENERGY around Budget Announcement

<table>
<thead>
<tr>
<th>Event Windows</th>
<th>Period</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20 to +20</td>
<td>Pre</td>
<td>-0.00159</td>
<td>20</td>
<td>0.009161</td>
<td>0.002048</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>-0.00164</td>
<td>20</td>
<td>0.008382</td>
<td>0.001874</td>
</tr>
<tr>
<td>-15 to +15</td>
<td>Pre</td>
<td>0.001072</td>
<td>15</td>
<td>0.00885</td>
<td>0.002285</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>-0.00187</td>
<td>15</td>
<td>0.008304</td>
<td>0.002144</td>
</tr>
<tr>
<td>-10 to +10</td>
<td>Pre</td>
<td>0.001154</td>
<td>10</td>
<td>0.007172</td>
<td>0.002268</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>-0.00158</td>
<td>10</td>
<td>0.009395</td>
<td>0.002971</td>
</tr>
<tr>
<td>-5 to +5</td>
<td>Pre</td>
<td>0.002734</td>
<td>5</td>
<td>0.006761</td>
<td>0.003024</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>-0.00303</td>
<td>5</td>
<td>0.011368</td>
<td>0.005084</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation
Table-3: Descriptive Statistics of Abnormal Returns under CNX INFRA around Budget Announcement

<table>
<thead>
<tr>
<th>Event Windows</th>
<th>Period</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20 to +20</td>
<td>Pre</td>
<td>-0.00202</td>
<td>20</td>
<td>0.016764</td>
<td>0.003749</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>0.00724</td>
<td>20</td>
<td>0.011877</td>
<td>0.002656</td>
</tr>
<tr>
<td>-15 to +15</td>
<td>Pre</td>
<td>-0.00196</td>
<td>15</td>
<td>0.01832</td>
<td>0.00473</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>0.008853</td>
<td>15</td>
<td>0.011432</td>
<td>0.002952</td>
</tr>
<tr>
<td>-10 to +10</td>
<td>Pre</td>
<td>-0.00293</td>
<td>10</td>
<td>0.013829</td>
<td>0.004373</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>0.009247</td>
<td>10</td>
<td>0.013676</td>
<td>0.004325</td>
</tr>
<tr>
<td>-5 to +5</td>
<td>Pre</td>
<td>-0.00864</td>
<td>5</td>
<td>0.012478</td>
<td>0.00558</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>0.0165</td>
<td>5</td>
<td>0.015434</td>
<td>0.006902</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

It is clear from Table-3 that the mean abnormal returns during the post budget announcement period will be more with all long term, medium term and short-term windows and it is highest with short-term window. The variance in the abnormal returns will be more during the pre-announcement period for long-term windows (-20 to +20, -15 to +15 and -10 to +10) and it is vice versa in -5 to +5 window.

It is clear from the Table 4 that the mean abnormal returns around the budget announcement are positive only under long-term window. Here also, the pre announcement returns will be higher than the post announcement returns. Under all the windows, the post budget standard deviation is higher.

Table-4: Descriptive statistics of Abnormal Returns under CNX FMCG around Budget Announcement

<table>
<thead>
<tr>
<th>Event Windows</th>
<th>Period</th>
<th>Mean</th>
<th>N</th>
<th>Std. Deviation</th>
<th>Std. Error</th>
</tr>
</thead>
<tbody>
<tr>
<td>-20 to +20</td>
<td>Pre</td>
<td>0.000359</td>
<td>20</td>
<td>0.005732</td>
<td>0.001282</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>0.00164</td>
<td>20</td>
<td>0.010864</td>
<td>0.002429</td>
</tr>
<tr>
<td>-15 to +15</td>
<td>Pre</td>
<td>-0.00113</td>
<td>15</td>
<td>0.005474</td>
<td>0.001414</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>-0.01986</td>
<td>15</td>
<td>1.59967</td>
<td>0.395036</td>
</tr>
<tr>
<td>-10 to +10</td>
<td>Pre</td>
<td>-0.00062</td>
<td>10</td>
<td>0.006028</td>
<td>0.001906</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>-0.00032</td>
<td>10</td>
<td>0.013934</td>
<td>0.004406</td>
</tr>
<tr>
<td>-5 to +5</td>
<td>Pre</td>
<td>0.000666</td>
<td>5</td>
<td>0.004967</td>
<td>0.002221</td>
</tr>
<tr>
<td></td>
<td>Post</td>
<td>-0.00029</td>
<td>5</td>
<td>0.018238</td>
<td>0.008156</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

The Pearson Correlation result shows that there is low positive correlation between the pre and post announcement abnormal returns with CNX IT and CNX INFRA. It is negative in CNX ENERGY and CNX FMCG. As per the T test conducted for various sectoral indices under study, the t value is significant with respect to CNX INFRA and in rest of the indices, it is insignificant. Thus, it can be concluded that Union Budget 2016 has influenced the Infrastructure industry in the end. It has not significantly affected rest of the industries under study.

Table-5: Results of T test for -20 to +20 windows

<table>
<thead>
<tr>
<th>Particulars</th>
<th>CNX IT</th>
<th>CNX ENERGY</th>
<th>CNX INFRA</th>
<th>CNX FMCG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
<td>20</td>
<td>20</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>0.308998603</td>
<td>-0.24269</td>
<td>0.161254</td>
<td>-0.04094</td>
</tr>
<tr>
<td>Hypothesized Mean Diff.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>d.f.</td>
<td>19</td>
<td>19</td>
<td>19</td>
<td>19</td>
</tr>
<tr>
<td>t Stat</td>
<td>-1.276214967</td>
<td>0.014706</td>
<td>-2.18901</td>
<td>0.069823</td>
</tr>
<tr>
<td>P(T&lt;=t) one-tail</td>
<td>0.0982696</td>
<td>0.49421</td>
<td>0.020642</td>
<td>0.472532</td>
</tr>
<tr>
<td>t Critical one-tail</td>
<td>1.729132792</td>
<td>1.729133</td>
<td>1.729133</td>
<td>1.729133</td>
</tr>
<tr>
<td>P(T&lt;=t) two-tail</td>
<td>0.217259921</td>
<td>0.98842</td>
<td>0.041285</td>
<td>0.945064</td>
</tr>
<tr>
<td>t Critical two-tail</td>
<td>2.09302405</td>
<td>2.093024</td>
<td>2.093024</td>
<td>2.093024</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

The Pearson Correlation result shows that there is low positive correlation between the pre and post announcement abnormal returns with CNX IT and CNX INFRA. It is negative in CNX ENERGY and CNX FMCG. As per the T test conducted for various sectoral indices under study, the t value is significant with respect to CNX INFRA and in rest of the indices, it is insignificant. Thus, it can be concluded that Union Budget 2016 has influenced the Infrastructure industry in the end. It has not significantly affected rest of the industries under study.
Table-6: Results of T test for -15 to +15 windows

<table>
<thead>
<tr>
<th>Particulars</th>
<th>CNX IT</th>
<th>CNX ENERGY</th>
<th>CNX INFRA</th>
<th>CNX FMCG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>-0.474878737</td>
<td>-0.61266</td>
<td>-0.44881</td>
<td>0.105594</td>
</tr>
<tr>
<td>Hypothesized Mean Diff.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>d.f.</td>
<td>14</td>
<td>14</td>
<td>14</td>
<td>14</td>
</tr>
<tr>
<td>t Stat</td>
<td>-0.895063685</td>
<td>0.740311</td>
<td>-1.63793</td>
<td>-0.28539</td>
</tr>
<tr>
<td>P(T&lt;=t) one-tail</td>
<td>0.192941738</td>
<td>0.235673</td>
<td>0.061854</td>
<td>0.389762</td>
</tr>
<tr>
<td>t Critical one-tail</td>
<td>1.761310115</td>
<td>1.76131</td>
<td>1.76131</td>
<td>1.76131</td>
</tr>
<tr>
<td>P(T&lt;=t) two-tail</td>
<td>0.385883476</td>
<td>0.471345</td>
<td>0.123709</td>
<td>0.779523</td>
</tr>
<tr>
<td>t Critical two-tail</td>
<td>2.144786681</td>
<td>2.144787</td>
<td>2.144787</td>
<td>2.144787</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

Table-6 shows that under CNX FMCG, there is low positive correlation between the pre and post announcement abnormal returns and it is negative in CNX ENERGY, CNX INFRA and CNX FMCG. As per the T test conducted for various sectoral indices, since all t values are lesser than the critical value at 5 percent level of significance, it is concluded that -15 to + 15 budget announcement period did not result in abnormal returns to the investors among all the industries under study.

Table-7: Results of T test for -10 to +10 windows

<table>
<thead>
<tr>
<th>Particulars</th>
<th>CNX IT</th>
<th>CNX ENERGY</th>
<th>CNX INFRA</th>
<th>CNX FMCG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
<td>10</td>
<td>10</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>-0.157907662</td>
<td>-0.45794</td>
<td>0.104735</td>
<td>-0.30173</td>
</tr>
<tr>
<td>Hypothesized Mean Diff.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>d.f.</td>
<td>9</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>t Stat</td>
<td>0.323768502</td>
<td>0.608746</td>
<td>-2.09298</td>
<td>-0.05544</td>
</tr>
<tr>
<td>P(T&lt;=t) one-tail</td>
<td>0.37675189</td>
<td>0.278871</td>
<td>0.032932</td>
<td>0.478499</td>
</tr>
<tr>
<td>t Critical one-tail</td>
<td>1.83315123</td>
<td>1.833113</td>
<td>1.833113</td>
<td>1.833113</td>
</tr>
<tr>
<td>P(T&lt;=t) two-tail</td>
<td>0.753510378</td>
<td>0.557474</td>
<td>0.065865</td>
<td>0.956977</td>
</tr>
<tr>
<td>t Critical two-tail</td>
<td>2.262157158</td>
<td>2.262157</td>
<td>2.262157</td>
<td>2.262157</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

According to the Table-7, weak correlation between the pre and post budget abnormal returns is found among all the sectoral indices. As per the T test, union budget has significant effect on to the Infrastructure and industry and in rest of the industry, it has no significant impact.

Table-8: Results of T test for - 5 to + 5 windows

<table>
<thead>
<tr>
<th>Particulars</th>
<th>CNX IT</th>
<th>CNX ENERGY</th>
<th>CNX INFRA</th>
<th>CNX FMCG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observations</td>
<td>5</td>
<td>5</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Pearson Correlation</td>
<td>-0.462481953</td>
<td>0.562482</td>
<td>-0.53339</td>
<td>-0.46532</td>
</tr>
<tr>
<td>Hypothesized Mean Diff.</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>d.f.</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>t Stat</td>
<td>-1.052864508</td>
<td>0.134321</td>
<td>-2.2964</td>
<td>0.821254</td>
</tr>
<tr>
<td>P(T&lt;=t) one-tail</td>
<td>0.175900762</td>
<td>0.278871</td>
<td>0.032932</td>
<td>0.478499</td>
</tr>
<tr>
<td>t Critical one-tail</td>
<td>2.131846782</td>
<td>2.131847</td>
<td>2.131847</td>
<td>2.131847</td>
</tr>
<tr>
<td>P(T&lt;=t) two-tail</td>
<td>0.351800361</td>
<td>0.899636</td>
<td>0.083268</td>
<td>0.457629</td>
</tr>
<tr>
<td>t Critical two-tail</td>
<td>2.776445105</td>
<td>2.776445</td>
<td>2.776445</td>
<td>2.776445</td>
</tr>
</tbody>
</table>

Sources: Authors Compilation

In the Table-8, we could see a strong positive correlation between the pre and post announcement abnormal returns in Energy Industry and in Infrastructure Industry, there is a strong negative correlation and rest of the industries, it is weak negative. T test result shows that the only in infrastructure industry there is a significant effect on abnormal returns from budget announcement and in rest of the industries, such a significant influence is not found.
CONCLUSION

Union Budget is one of the major economic policies of the country. It is prepared in such a ways as to improve the growth of the country. Budget announcement is taken as one of the most important event by most of the investors to decide about their investment portfolio. The results of the current study shows that the in the IT industry, positive abnormal returns is found during the post announcement period and it is quite reverse in the Energy industry and FMCG industry. Under Infrastructure industry, long-term event windows show positive abnormal return and short-term window shows negative return. It is understood that the budget has influenced the Infrastructure industry in the long run and not in the short run. T test results for long-term windows and short term windows (except -15 to +15) show that only Infrastructure industry has influenced by the announcement of Union Budget 2016-17. Rest of the industries have not shown significant influence of Union Budget on their market performance.

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