TABLE OF CONTENTS

| Declaration | i |
| Preface     | ii |
| Acknowledgement | iii |
| Table of Contents | iv |
| List of Tables | x |
| List of Figures | xiii |
| List of Abbreviations | xiv |

1. INTRODUCTION
   1.0 Indian Stock Market 1
   1.1 Bombay Stock Exchange 2
   1.2 National Stock Exchange 2
   1.3 Stock Market Volatility 3
   1.4 Volatility Index 4
   1.5 Investor Sentiment and Volatility 5
   1.6 Causes of Volatility 5
   1.7 Capital Asset Pricing Model and Portfolio Returns 6
   1.8 Volatility in Indian Stock Market Post-Liberalization 6
   2.0 Stock Market Efficiency 6
   2.1 Types of Efficiency Market Hypothesis 8
   2.2 Efficiency and Market Returns 9
   3.0 Seasonal Anomalies in Stock Market 9
   3.1 Day-of-the-Week Effect 9
   3.2 Month-of-the-Year Effect 10
   3.3 January Effect 10
   3.4 Causes of January Effect 11
   3.5 December Effect 11
   3.6 October Effect 12
   4.0 Indian and International Stock Markets 12
   4.1 Contribution of Developed and Emerging Economies in Financial Crisis 13
   4.2 Emerging and Developed Economies Indices 14
   5.0 Literature Review 18
   5.1 Conditional Volatility Models 18
   5.2 Relationship between Return and Volatility 20
   5.3 Time Varying Volatility and Negative Innovations 21
   5.4 Weak Form Efficiency of Indian Stock Market 22
5.5 Seasonality in Indian Stock Market
5.6 Extent of Influence of US Stock Market on Indian Stock Market
5.7 Interdependence between Developed and Emerging Economies

References 35

2. RESEARCH METHODOLOGY
2.0 Introduction 43
2.1 Need of the Present Study 43
2.2 Objectives of the Study 44
2.3 Hypothesis of the Study 44
2.4 Research Design 45
2.5 Data Analysis 47
2.6 Structure of Research Work 62
References 64

3. RETURN AND VOLATILITY RELATIONSHIP IN INDIAN STOCK MARKET
3.0 Introduction 67
3.1 Analysis of SENSEX Index 68
3.1.1 Analysis of Descriptive Statistics of Daily Returns of SENSEX 68
3.1.2 Analysis of Unit Root Test of SENSEX 70
3.1.3 Analysis of Autocorrelation and Ljung-Box Q-statistics of SENSEX 71
3.1.4 Analysis of GARCH Models of SENSEX 72
3.1.5 Findings and Discussions of Volatility of SENSEX 75
3.2 Analysis of BSE100 Index 76
3.2.1 Analysis of Descriptive Statistics of Daily Returns of BSE100 76
3.2.2 Analysis of Unit Root Test of BSE100 77
3.2.3 Analysis of Autocorrelation and Ljung-Box Q-statistics of BSE100 78
3.2.4 Analysis of GARCH Models of BSE100 80
3.2.5 Findings and Discussions of Volatility of BSE100 82
3.3 Analysis of NIFTY Index 83
3.3.1 Analysis of Descriptive Statistics of Daily Returns of NIFTY 83
3.3.2 Analysis of Unit Root Test of NIFTY 84
3.3.3 Analysis of Autocorrelation & Ljung-Box stats of NIFTY 85
3.3.4 Analysis of GARCH Models of NIFTY 87
3.3.5 Findings and Discussions of Volatility of NIFTY 89
3.4 Analysis of CNX500 Index 90
<table>
<thead>
<tr>
<th>Section</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.4.1</td>
<td>Analysis of Descriptive Statistics of Daily Returns of CNX500</td>
<td>90</td>
</tr>
<tr>
<td>3.4.2</td>
<td>Analysis of Unit Root Test of CNX500</td>
<td>91</td>
</tr>
<tr>
<td>3.4.3</td>
<td>Analysis of Autocorrelation and Ljung-Box Q-statistics of CNX500</td>
<td>92</td>
</tr>
<tr>
<td>3.4.4</td>
<td>Analysis of GARCH Models of CNX500</td>
<td>94</td>
</tr>
<tr>
<td>3.4.5</td>
<td>Findings and Discussions of Volatility of CNX500</td>
<td>96</td>
</tr>
<tr>
<td>3.5</td>
<td>Analysis of Volatility of SENSEX and NIFTY in Post-Derivative</td>
<td>97</td>
</tr>
<tr>
<td>3.5.1</td>
<td>Descriptive Stats Analysis of SENSEX &amp; NIFTY in Post-Derivative</td>
<td>97</td>
</tr>
<tr>
<td>3.5.2</td>
<td>Unit Root Test Analysis of SENSEX and NIFTY in Post-Derivative</td>
<td>99</td>
</tr>
<tr>
<td>3.5.3</td>
<td>Analysis of ARMA of SENSEX and NIFTY in Post-Derivative</td>
<td>99</td>
</tr>
<tr>
<td>3.5.4</td>
<td>Analysis of GARCH model of SENSEX &amp; NIFTY in Post-Derivative</td>
<td>101</td>
</tr>
<tr>
<td>3.5.5.</td>
<td>Analysis of E-GARCH model of SENSEX &amp; NIFTY in Post-Derivative</td>
<td>102</td>
</tr>
<tr>
<td>3.5.6</td>
<td>Findings &amp; Discussions of volatility of SENSEX &amp; NIFTY in Post Derivative</td>
<td>103</td>
</tr>
<tr>
<td>3.6</td>
<td>Concluding Remarks</td>
<td>104</td>
</tr>
<tr>
<td></td>
<td>References</td>
<td>107</td>
</tr>
</tbody>
</table>

4. **RANDOM WALK IN INDIAN STOCK MARKET**

4.0  Introduction                               109
4.1  Analysis of Descriptive Statistics of Daily Returns   110
4.1.1 Analysis of Descriptive Statistics of Daily Returns (Total Period) 110
4.1.2 Analysis of Descriptive Statistics of Daily Returns (Periodwise) 111
4.1.3 Findings and Discussion of Descriptive Statistics 117
4.2  Analysis of Unit Root Test                  117
4.2.1 Analysis of Unit Root Test (Total Period) 117
4.2.2 Analysis of Unit Root Test (Periodwise) 118
4.2.3 Findings and Discussion of Unit Root Test 119
4.3  Analysis of Kolmogorov-Smirnov Test         119
4.3.1 Analysis of Kolmogorov-Smirnov Test (Total Period) 119
4.3.2 Analysis of Kolmogorov-Smirnov Test (Periodwise) 120
4.3.3 Findings and Discussion of Kolmogorov-Smirnov Test 120
4.4  Analysis of Runs Test                       121
4.4.1 Analysis of Runs Test (Total Period) 121
4.4.2 Analysis of Runs Test (Periodwise) 122
4.4.3 Findings and Discussion of Runs Test 124
4.5  Analysis of Autocorrelation Test and Ljung-Box Q-statistic 124
4.5.1 Analysis of Autocorrelation Test and Ljung-Box Q-statistic (Total Period) 124
4.5.2 Analysis of Autocorrelation Test (Periodwise) 125
4.5.3 Analysis of Ljung-Box Q-statistic (Periodwise) 125
4.5.4 Findings & Discussion of Autocorrelation Test and Ljung-Box Q-statistic 135
4.6 Analysis of Variance Ratio Test 135
4.6.1 Analysis of Variance Ratio Test (Total Period) 135
4.6.2 Analysis of Variance Ratio Test (Periodwise) 140
4.6.3 Findings and Discussion of Variance Ratio Test 140
4.7 Concluding Remarks 140

5. SEASONAL ANOMALIES IN INDIAN STOCK MARKET

| 5.0 | Introduction | 144 |
| 5.1 | Analysis of SENSEX Index | 144 |
| 5.1.1. | Analysis of Daywise Descriptive Statistics of Daily Returns of SENSEX | 145 |
| 5.1.2. | Analysis of OLS Regression of Day-of-the-week effect of SENSEX | 146 |
| 5.1.3. | Analysis of GARCH (1,1) Model for Day-of-the-week effect of SENSEX | 147 |
| 5.1.4. | Analysis of Descriptive Statistics of Monthly Returns of SENSEX | 148 |
| 5.1.5. | Analysis of OLS Regression for Month-of-the-year effect of SENSEX | 150 |
| 5.1.6. | Analysis of GARCH (1,1) Model Month-of-the-year effect of SENSEX | 151 |
| 5.1.7. | Findings & Discussions of Seasonality in SENSEX | 152 |
| 5.2 | Analysis of BSE100 Index | 153 |
| 5.2.1. | Analysis of Daywise Descriptive Statistics of Daily Returns of BSE100 | 153 |
| 5.2.2. | Analysis of OLS Regression of Day-of-the-week effect of BSE100 | 154 |
| 5.2.3. | Analysis of GARCH (1,1) Model for Day-of-the-week effect of BSE100 | 155 |
| 5.2.4. | Analysis of Descriptive Statistics of Monthly Returns of BSE100 | 157 |
| 5.2.5. | Analysis of OLS Regression for Month-of-the-year effect of BSE100 | 159 |
| 5.2.6. | Analysis of GARCH (1,1) Model Month-of-the-year effect of BSE100 | 160 |
| 5.2.7. | Findings & Discussions of Seasonality in BSE100 | 161 |
| 5.3 | Analysis of NIFTY Index | 162 |
| 5.3.1. | Analysis of Daywise Descriptive Statistics of Daily Returns of NIFTY | 163 |
| 5.3.2. | Analysis of OLS Regression of Day-of-the-week effect of NIFTY | 163 |
| 5.3.3. | Analysis of GARCH Model for Day-of-the-week effect of NIFTY | 164 |
| 5.3.4. | Analysis of Descriptive Statistics of Monthly Returns of NIFTY | 166 |
| 5.3.5. | Analysis of OLS Regression for Month-of-the-year effect of NIFTY | 167 |
| 5.3.6. | Analysis of GARCH (1,1) Model Month-of-the-year effect of NIFTY | 168 |
| 5.3.7. | Findings & Discussions of Seasonality in NIFTY | 169 |
| 5.4 | Analysis of CNX500 Index | 170 |
| 5.4.1. | Analysis of Daywise Descriptive Statistics of Daily Returns of CNX500 | 170 |
| 5.4.2. | Analysis of OLS Regression of Day-of-the-week effect of CNX500 | 171 |
5.4.3. Analysis of GARCH (1,1) Model for Day-of-the-week effect of CNX500
5.4.4. Analysis of Descriptive Statistics of Monthly Returns of CNX500
5.4.5. Analysis of OLS Regression for Month-of-the-year effect of CNX500
5.4.6. Analysis of GARCH (1,1) Model Month-of-the-year effect of CNX500
5.4.7. Findings & Discussions of Seasonality in CNX500
5.5 Concluding Remarks

References

6. INTERDEPENDENCE OF INDIAN AND INTERNATIONAL STOCK MARKETS

6.0 Introduction
6.1 Analysis of Descriptive Statistics of Daily Returns
6.1.1 Analysis of Descriptive Statistics of Daily Returns (Total Period)
6.1.2 Analysis of Descriptive Statistics of Daily Returns (Periodwise)
6.1.3 Findings and Discussion of Descriptive Statistics
6.2 Analysis of Unit Root Test
6.2.1 Analysis of Unit Root Test (At Level)
6.2.2 Analysis of Unit Root Test (At First Difference)
6.2.3 Findings and Discussion of Unit Root Test
6.3 Analysis of Correlation Test
6.3.1 Analysis of Correlation Test (Total Period)
6.3.2 Analysis of Correlation Test (Periodwise)
6.3.3 Findings and Discussion of Correlation Test
6.4 Analysis of Co-integration Test
6.4.1 Analysis of Co-integration Test (Total Period)
6.4.2 Analysis of Co-integration Test (Periodwise)
6.4.3 Findings and Discussion of Co-integration Test
6.5 Analysis of Granger Causality Test
6.5.1 Analysis of Granger Causality Test (Total Period)
6.5.2 Analysis of Granger Causality Test (Periodwise)
6.5.3 Findings & Discussion of Granger Causality Test
6.6 Analysis of VAR Estimation Results
6.6.1 Analysis of VAR Estimation Results (Total Period)
6.6.2 Analysis of VAR Estimation Results (Sample I)
6.6.3 Analysis of VAR Estimation Results (Sample II)
6.6.4 Analysis of VAR Estimation Results (Sample III)
6.6.5 Findings and Discussion of VAR Estimation Results
6.7 Analysis of VAR Estimation Results 227
6.7.1 Analysis of Variance Decomposition Analysis (Total Period) 227
6.7.2 Analysis of Variance Decomposition Analysis (Sample I) 227
6.7.3 Analysis of Variance Decomposition Analysis (Sample II) 227
6.7.4 Analysis of Variance Decomposition Analysis (Sample III) 228
6.7.5 Findings and Discussion of Variance Decomposition Analysis 228
6.8 Analysis of Impulse Response Analysis 228
6.8.1 Findings and Discussion of Impulse Response Analysis 245
6.9 Concluding Remarks 245
References 248

7. SUMMARY & CONCLUSIONS

7.0 Introduction 250
7.1 Findings of the Study 251
7.2 Conclusions 259
7.3 Implications of the Study 262
7.4 Scope for Future Research Work 262

BIBLIOGRAPHY 264
