

INTERNATIONAL JOURNAL OF RESEARCH IN COMMERCE, IT & MANAGEMENT

I
J
R
C
M



A Monthly Double-Blind Peer Reviewed Refereed Open Access International e-Journal - Included in the International Serial Directories

Indexed & Listed at:

Ulrich's Periodicals Directory ©, ProQuest, U.S.A., EBSCO Publishing, U.S.A., Index Copernicus Publishers Panel, Poland,

Open J-Gate, India [link of the same is duly available at Infibnet of University Grants Commission (U.G.C.)]

as well as in Cabell's Directories of Publishing Opportunities, U.S.A.

Circulated all over the world & Google has verified that scholars of more than Hundred & Twenty One countries/territories are visiting our journal on regular basis.

Ground Floor, Building No. 1041-C-1, Devi Bhawan Bazar, JAGADHRI – 135 003, Yamunanagar, Haryana, INDIA

www.ijrcm.org.in

CONTENTS

Sr. No.	TITLE & NAME OF THE AUTHOR (S)	Page No.
1.	THE INTERMEDIATE COMMUNITY: A BEHAVIORAL/BARGAINING APPROACH FOR CONFLICT RESOLUTION AT THE LOCAL LEVEL/BAYESIAN ANALYSIS <i>DR. LEONIDAS A. PAKONSTANTINIDIS</i>	1
2.	IMPACT OF NEW REFORM ON PRODUCTIVITY OF ETHIOPIAN COTTON TEXTILE INDUSTRY <i>DR. BREHANU BORJI AYALEW</i>	7
3.	SIGNIFICANCE OF TOTAL QUALITY MANAGEMENT IN ORGANIZATIONAL PERFORMANCE: AN EMPIRICAL ANALYSIS FROM SMES SECTOR <i>FAROOQ ANWAR, IRFAN SALEEM & AYESHA ZAHID</i>	13
4.	INDEPENDENCE AND IMPARTIALITY OF AUDITORS FROM THE VIEWPOINTS OF INDEPENDENT AUDITORS AND INVESTMENT COMPANIES <i>MOHAMADREZA ABDOLI</i>	17
5.	COMPARATIVE ANALYSIS OF SELECTED HOUSING FINANCE COMPANIES IN INDIA <i>DR. D. GURUSWAMY</i>	20
6.	MUNICIPAL SERVICE QUALITY IN SOUTHERN THAILAND: AN EMPIRICAL INVESTIGATION OF CUSTOMER PERCEPTIONS <i>SAFIEK MOKHLIS</i>	30
7.	THE IMPERATIVES OF LEADERSHIP QUESTION IN MEDIA MANAGEMENT <i>BELLO SEMIU & KASALI TAOFEK</i>	36
8.	PERCEIVED PURCHASE RISK IN THE TECHNOLOGICAL GOODS PURCHASE CONTEXT: AN INSTRUMENT DEVELOPMENT AND VALIDATION <i>IMAM SALEHUDIN</i>	41
9.	STUDY ON TRADITIONAL VERSUS CONTINUOUS ACCREDITATION PROCESS & EXPLORING LEADERSHIP DISPARITY <i>HARINI METHUKU & HATIM R HUSSEIN</i>	49
10.	VOLATILITY OF AGGREGATE MARKET INDICES <i>NALINA K B & B SHIVARAJ</i>	56
11.	STUDENT FEED BACK: A TOOL TO ENHANCE QUALITY IN ENGINEERING EDUCATION <i>VEERANNA.D.K & DR. ANAND.K.JOSHI</i>	63
12.	JOB SCHEDULING OF NURSE STAFFING: A DYNAMIC PROGRAMMING APPROACH <i>KAVITHA KOPPULA & DR. LEWLYN L. RAJ RODRIGUES</i>	66
13.	INFLUENCE OF PERSONAL FACTORS ON ORGANISATIONAL CLIMATE IN IT COMPANIES <i>R. DARWIN JOSEPH & DR. N. PANCHANATHAN</i>	70
14.	ANALYSIS OF CUSTOMER SATISFACTION OF THE HOTEL INDUSTRY IN INDIA USING KANO MODEL & QFD <i>PARUL GUPTA & R. K. SRIVASTAVA</i>	74
15.	BEHAVIOUR OF STOCK MARKET VOLATILITY IN DEVELOPING COUNTRIES <i>DR. S. S. CHAHAL & SUMAN</i>	82
16.	FINANCIAL DERIVATIVES IN INDIA: DEVELOPMENT PATTERN AND TRADING IMPACT ON THE VOLATILITY OF NSE <i>E.V.P.A.S.PALLAVI & DR. P. S. RAVINDRA</i>	89
17.	CHANGING FACE OF CAR MARKET: A REVIEW OF MARKET GROWTH AND CHANGING SALES TRENDS IN INDIAN PASSENGER CAR MARKET <i>DEEPTHI SANKAR & DR. ZAKKARIYA K.A.</i>	94
18.	PERFORMANCE APPRAISAL: ALIGNING PERSONAL ASPIRATIONS TO ORGANIZATIONAL GOALS (A SPECIAL REFERENCE TO DAIRY SECTOR IN RAJASTHAN) <i>DR. SHWETA TIWARI (MISHRA)</i>	99
19.	INDIA'S BANKING SECTOR REFORMS FROM THE PERSPECTIVE OF BANKING SYSTEM <i>RAJESH GARG & ASHOK KUMAR</i>	103
20.	INFORMATION TECHNOLOGY AND COMMUNICATION IN BUSINESS <i>C. ARUL VENKADESH</i>	108
21.	IMPACT OF ORGANIZED RETAIL ON UNORGANIZED SECTOR: A STUDY IN JAMMU REGION <i>URVASHI GUPTA</i>	112
22.	ISLAMIC BANKING IN INDIA: RELIGIOUS AND SOCIO-ECONOMIC PERSPECTIVES AFFECTING MUSLIM INVESTORS OF AHMEDABAD DISTRICT IN GUJARAT <i>URVI AMIN</i>	116
23.	ICT DEVELOPMENT IN INDIA: A CASE STUDY OF INFOSYS LTD. <i>MUNISH KUMAR TIWARI</i>	122
24.	DATA WAREHOUSING AND TESTING <i>VENKATESH RAMASAMY & ABINAYA MURUGANANDHAN</i>	130
25.	POLITICAL IMPACT OF MICRO FINANCE ON RURAL POOR IN ANDHRA PRADESH <i>DR. NANU LUNAVATH</i>	135
	REQUEST FOR FEEDBACK	151

CHIEF PATRON

PROF. K. K. AGGARWAL

Chancellor, Lingaya's University, Delhi
Founder Vice-Chancellor, Guru Gobind Singh Indraprastha University, Delhi
Ex. Pro Vice-Chancellor, Guru Jambheshwar University, Hisar

PATRON

SH. RAM BHAJAN AGGARWAL

Ex. State Minister for Home & Tourism, Government of Haryana
Vice-President, Dadri Education Society, Charkhi Dadri
President, Chinar Syntex Ltd. (Textile Mills), Bhiwani

CO-ORDINATOR

AMITA

Faculty, Government M. S., Mohali

ADVISORS

DR. PRIYA RANJAN TRIVEDI

Chancellor, The Global Open University, Nagaland

PROF. M. S. SENAM RAJU

Director A. C. D., School of Management Studies, I.G.N.O.U., New Delhi

PROF. M. N. SHARMA

Chairman, M.B.A., Haryana College of Technology & Management, Kaithal

PROF. S. L. MAHANDRU

Principal (Retd.), Maharaja Agrasen College, Jagadhri

EDITOR

PROF. R. K. SHARMA

Professor, Bharti Vidyapeeth University Institute of Management & Research, New Delhi

CO-EDITOR

DR. BHAVET

Faculty, M. M. Institute of Management, Maharishi Markandeshwar University, Mullana, Ambala, Haryana

EDITORIAL ADVISORY BOARD

DR. RAJESH MODI

Faculty, Yanbu Industrial College, Kingdom of Saudi Arabia

PROF. SANJIV MITTAL

University School of Management Studies, Guru Gobind Singh I. P. University, Delhi

PROF. ANIL K. SAINI

Chairperson (CRC), Guru Gobind Singh I. P. University, Delhi

DR. SAMBHAVNA

Faculty, I.I.T.M., Delhi

DR. MOHENDER KUMAR GUPTA

Associate Professor, P. J. L. N. Government College, Faridabad

DR. SHIVAKUMAR DEENE

Asst. Professor, Government F. G. College Chitguppa, Bidar, Karnataka

MOHITA

Faculty, Yamuna Institute of Engineering & Technology, Village Gadholi, P. O. Gadholi, Yamunanagar

ASSOCIATE EDITORS

PROF. NAWAB ALI KHAN

Department of Commerce, Aligarh Muslim University, Aligarh, U.P.

PROF. ABHAY BANSAL

Head, Department of Information Technology, Amity School of Engineering & Technology, Amity University, Noida

PROF. A. SURYANARAYANA

Department of Business Management, Osmania University, Hyderabad

DR. ASHOK KUMAR

Head, Department of Electronics, D. A. V. College (Lahore), Ambala City

DR. SAMBHAV GARG

Faculty, M. M. Institute of Management, Maharishi Markandeshwar University, Mullana, Ambala, Haryana

DR. V. SELVAM

Divisional Leader – Commerce SSL, VIT University, Vellore

DR. PARDEEP AHLAWAT

Reader, Institute of Management Studies & Research, Maharshi Dayanand University, Rohtak

S. TABASSUM SULTANA

Asst. Professor, Department of Business Management, Matrusr Institute of P.G. Studies, Hyderabad

SURJEET SINGH

Asst. Professor, Department of Computer Science, G. M. N. (P.G.) College, Ambala Cantt.

TECHNICAL ADVISOR

AMITA

Faculty, Government H. S., Mohali

MOHITA

Faculty, Yamuna Institute of Engineering & Technology, Village Gadholi, P. O. Gadholi, Yamunanagar

FINANCIAL ADVISORS

DICKIN GOYAL

Advocate & Tax Adviser, Panchkula

NEENA

Investment Consultant, Chambaghat, Solan, Himachal Pradesh

LEGAL ADVISORS

JITENDER S. CHAHAL

Advocate, Punjab & Haryana High Court, Chandigarh U.T.

CHANDER BHUSHAN SHARMA

Advocate & Consultant, District Courts, Yamunanagar at Jagadhri

SUPERINTENDENT

SURENDER KUMAR POONIA

CALL FOR MANUSCRIPTS

We invite unpublished novel, original, empirical and high quality research work pertaining to recent developments & practices in the area of Computer, Business, Finance, Marketing, Human Resource Management, General Management, Banking, Insurance, Corporate Governance and emerging paradigms in allied subjects like Accounting Education; Accounting Information Systems; Accounting Theory & Practice; Auditing; Behavioral Accounting; Behavioral Economics; Corporate Finance; Cost Accounting; Econometrics; Economic Development; Economic History; Financial Institutions & Markets; Financial Services; Fiscal Policy; Government & Non Profit Accounting; Industrial Organization; International Economics & Trade; International Finance; Macro Economics; Micro Economics; Monetary Policy; Portfolio & Security Analysis; Public Policy Economics; Real Estate; Regional Economics; Tax Accounting; Advertising & Promotion Management; Business Education; Business Information Systems (MIS); Business Law, Public Responsibility & Ethics; Communication; Direct Marketing; E-Commerce; Global Business; Health Care Administration; Labor Relations & Human Resource Management; Marketing Research; Marketing Theory & Applications; Non-Profit Organizations; Office Administration/Management; Operations Research/Statistics; Organizational Behavior & Theory; Organizational Development; Production/Operations; Public Administration; Purchasing/Materials Management; Retailing; Sales/Selling; Services; Small Business Entrepreneurship; Strategic Management Policy; Technology/Innovation; Tourism, Hospitality & Leisure; Transportation/Physical Distribution; Algorithms; Artificial Intelligence; Compilers & Translation; Computer Aided Design (CAD); Computer Aided Manufacturing; Computer Graphics; Computer Organization & Architecture; Database Structures & Systems; Digital Logic; Discrete Structures; Internet; Management Information Systems; Modeling & Simulation; Multimedia; Neural Systems/Neural Networks; Numerical Analysis/Scientific Computing; Object Oriented Programming; Operating Systems; Programming Languages; Robotics; Symbolic & Formal Logic and Web Design. The above mentioned tracks are only indicative, and not exhaustive.

Anybody can submit the soft copy of his/her manuscript **anytime** in M.S. Word format after preparing the same as per our submission guidelines duly available on our website under the heading guidelines for submission, at the email addresses: infoijrcm@gmail.com or info@ijrcm.org.in.

GUIDELINES FOR SUBMISSION OF MANUSCRIPT

1. COVERING LETTER FOR SUBMISSION:

DATED: _____

THE EDITOR
IJRCM

Subject: SUBMISSION OF MANUSCRIPT IN THE AREA OF _____.

(e.g. Finance/Marketing/HRM/General Management/Economics/Psychology/Law/Computer/IT/Engineering/Mathematics/other, **please specify**)

DEAR SIR/MADAM

Please find my submission of manuscript entitled ' _____ ' for possible publication in your journals.

I hereby affirm that the contents of this manuscript are original. Furthermore, it has neither been published elsewhere in any language fully or partly, nor is it under review for publication elsewhere.

I affirm that all the author (s) have seen and agreed to the submitted version of the manuscript and their inclusion of name (s) as co-author (s).

Also, if my/our manuscript is accepted, I/We agree to comply with the formalities as given on the website of the journal & you are free to publish our contribution in any of your journals.

NAME OF CORRESPONDING AUTHOR:

Designation:

Affiliation with full address, contact numbers & Pin Code:

Residential address with Pin Code:

Mobile Number (s):

Landline Number (s):

E-mail Address:

Alternate E-mail Address:

NOTES:

- a) The whole manuscript is required to be in **ONE MS WORD FILE** only (pdf. version is liable to be rejected without any consideration), which will start from the covering letter, inside the manuscript.
- b) The sender is required to mention the following in the **SUBJECT COLUMN** of the mail:
New Manuscript for Review in the area of (Finance/Marketing/HRM/General Management/Economics/Psychology/Law/Computer/IT/Engineering/Mathematics/other, please specify)
- c) There is no need to give any text in the body of mail, except the cases where the author wishes to give any specific message w.r.t. to the manuscript.
- d) The total size of the file containing the manuscript is required to be below **500 KB**.
- e) Abstract alone will not be considered for review, and the author is required to submit the complete manuscript in the first instance.
- f) The journal gives acknowledgement w.r.t. the receipt of every email and in case of non-receipt of acknowledgment from the journal, w.r.t. the submission of manuscript, within two days of submission, the corresponding author is required to demand for the same by sending separate mail to the journal.

2. **MANUSCRIPT TITLE:** The title of the paper should be in a 12 point Calibri Font. It should be bold typed, centered and fully capitalised.

3. **AUTHOR NAME (S) & AFFILIATIONS:** The author (s) **full name, designation, affiliation (s), address, mobile/landline numbers**, and **email/alternate email address** should be in italic & 11-point Calibri Font. It must be centered underneath the title.

4. **ABSTRACT:** Abstract should be in fully italicized text, not exceeding 250 words. The abstract must be informative and explain the background, aims, methods, results & conclusion in a single para. Abbreviations must be mentioned in full.

5. **KEYWORDS:** Abstract must be followed by a list of keywords, subject to the maximum of five. These should be arranged in alphabetic order separated by commas and full stops at the end.
6. **MANUSCRIPT:** Manuscript must be in **BRITISH ENGLISH** prepared on a standard A4 size **PORTRAIT SETTING PAPER**. It must be prepared on a single space and single column with 1" margin set for top, bottom, left and right. It should be typed in 8 point Calibri Font with page numbers at the bottom and centre of every page. It should be free from grammatical, spelling and punctuation errors and must be thoroughly edited.
7. **HEADINGS:** All the headings should be in a 10 point Calibri Font. These must be bold-faced, aligned left and fully capitalised. Leave a blank line before each heading.
8. **SUB-HEADINGS:** All the sub-headings should be in a 8 point Calibri Font. These must be bold-faced, aligned left and fully capitalised.
9. **MAIN TEXT:** The main text should follow the following sequence:

INTRODUCTION**REVIEW OF LITERATURE****NEED/IMPORTANCE OF THE STUDY****STATEMENT OF THE PROBLEM****OBJECTIVES****HYPOTHESES****RESEARCH METHODOLOGY****RESULTS & DISCUSSION****FINDINGS****RECOMMENDATIONS/SUGGESTIONS****CONCLUSIONS****SCOPE FOR FURTHER RESEARCH****ACKNOWLEDGMENTS****REFERENCES****APPENDIX/ANNEXURE**

It should be in a 8 point Calibri Font, single spaced and justified. The manuscript should preferably not exceed **5000 WORDS**.

10. **FIGURES & TABLES:** These should be simple, centered, separately numbered & self explained, and **titles must be above the table/figure**. **Sources of data should be mentioned below the table/figure**. It should be ensured that the tables/figures are referred to from the main text.
11. **EQUATIONS:** These should be consecutively numbered in parentheses, horizontally centered with equation number placed at the right.
12. **REFERENCES:** The list of all references should be alphabetically arranged. The author (s) should mention only the actually utilised references in the preparation of manuscript and they are supposed to follow **Harvard Style of Referencing**. The author (s) are supposed to follow the references as per the following:
 - All works cited in the text (including sources for tables and figures) should be listed alphabetically.
 - Use (ed.) for one editor, and (ed.s) for multiple editors.
 - When listing two or more works by one author, use --- (20xx), such as after Kohl (1997), use --- (2001), etc, in chronologically ascending order.
 - Indicate (opening and closing) page numbers for articles in journals and for chapters in books.
 - The title of books and journals should be in italics. Double quotation marks are used for titles of journal articles, book chapters, dissertations, reports, working papers, unpublished material, etc.
 - For titles in a language other than English, provide an English translation in parentheses.
 - The location of endnotes within the text should be indicated by superscript numbers.

PLEASE USE THE FOLLOWING FOR STYLE AND PUNCTUATION IN REFERENCES:**BOOKS**

- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19-22 June.

UNPUBLISHED DISSERTATIONS AND THESES

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

ONLINE RESOURCES

- Always indicate the date that the source was accessed, as online resources are frequently updated or removed.

WEBSITE

- Garg, Bhavet (2011): Towards a New Natural Gas Policy, Political Weekly, Viewed on January 01, 2012 <http://epw.in/user/viewabstract.jsp>

BEHAVIOUR OF STOCK MARKET VOLATILITY IN DEVELOPING COUNTRIES**DR. S. S. CHAHAL****PROFESSOR****DEPARTMENT OF COMMERCE****M. D. UNIVERSITY****ROHTAK****SUMAN****ASST. PROFESSOR****PDM COLLEGE OF ENGINEERING****BAHADURGARH****ABSTRACT**

BRICM (Brazil, Russia, India, China, and Mexico) economies are the largest developing countries which provide the profitable opportunities to the investors in the future. Mexican economy is also considered in the same line. The present study is an attempt to know the risk and return relationship and nature of stock market volatility of these countries' stock market by applying GARCH, GARCH-M, and EGARCH models over a period of January 1999 to May 2010. The study found a significant asymmetry effect in all the selected countries but no significant relationship was found between expected return and conditional variance. Recent news and historical volatility plays a significant role in explaining the current volatility.

KEYWORDS

BRICM, GARCH, GARCH-M, EGARCH, Conditional Variance.

INTRODUCTION

Modelling and forecasting financial markets volatility has received considerable attention from academic researchers, policy makers and practitioners during the past 25 years and since the appearance of the seminal paper of Engle (1982). The main reason for this enormous interest is because volatility is used as a measure of risk and different participants of the financial markets need this measure for various purposes. For instance, volatility is needed as an input in portfolio management by portfolio managers and investors. It is needed in the pricing of derivatives securities (pricing of options in particular). The well-known option pricing formula of Black-Scholes (1973) requires a measure of stock price volatility. Financial regulators and financial institutions require quantifying the financial risk. The principal difficulty is that volatility is not constant over time and that financial market Volatility exhibits certain characteristics that are specific to financial time series (Bollerslev, 1986 and 1990). Therefore, practitioners and financial econometricians have developed a variety of time-varying volatility models that takes into account these characteristics. However, investments in these economies are looking quite lucrative still one should understand the basic nature of the underlying countries' stock markets. The present study is an attempt in the same direction as it examines the relationship between time varying return and volatility in these five markets named Brazil, Russia, India, China and Mexico.

LITERATURE REVIEW

Extensive empirical research has been carried out to investigate the stock market volatility in different countries. French *et al* (1987) examined the relation between stock return and stock market volatility by using GARCH-in-mean model of Engle *et al* and found positive relation between expected risk premium and volatility. Akgiray (1989) presented new evidence about the time series behavior of stock market returns by applying some new time series model to daily return series. Geyer (1994) analyzed the properties of volatility estimates based on traditional methods and GARCH models. Nicholls and Tonuri (1995) presented an overview of the GARCH family of variance models examined the behavior of Australian aggregate stock market volatility over the period 1988-91 using the GARCH framework. Koutmos (1999) and Koutmos and Saidi (1995) found that the conditional variance of Asian stock markets is an asymmetric function of past innovations. Positive past returns are on average 1.4 times more persistent than negative past returns of an equal magnitude. Aggarwal, Inclan, and Leal (1999) explored the stock market volatility of 10 largest emerging markets in Asia and Latin America. They found that shifts in volatility of considered emerging markets is related to important country-specific political, social, and economic events. Moreover, the time-varying stock market volatility is modelled by GARCH models. Researchers have empirically demonstrated (e.g., Harvey, 2001; Li *et al.*, 2003) that the relationship between return and volatility depends on the specification of conditional volatility. Guojun Wu (2001) developed an asymmetric volatility model where dividend growth and dividend volatility are the two state variables of the economy. The model allows the asymmetric effect and the volatility feedback effect, the two popular explanations of asymmetry. He found that both the asymmetric effect and volatility feedback are important determinants of asymmetric volatility, and volatility feedback is significant both statistically and economically. In particular, using a parametric GARCH-M model, Li *et al.* (2003) found that a positive but statistically insignificant relationship exists for all the 12 major developed markets. By contrast, using a flexible semiparametric GARCH-M model, they document that a negative relationship prevails in most cases and is significant in 6 out of the 12 markets. Xuejing Xing (2004) found that the education level of investors plays a significant role in explaining cross-country market volatility differences. Jaewon Shin, (2005) Both parametric and semi parametric GARCH in mean estimations found a positive but insignificant relationship between expected stock returns and volatility in emerging stock markets. The 1997–1998 global emerging market crises seem to induce changes in GARCH parameters. Hui Guo and Christopher J. Neely (2006) analyzed the risk-return relation using the component GARCH model and international daily MSCI stock market data, concluded that the relation is positive in almost all markets and often statistically significant. Charlie X. Cai, Robert W. Faff, David J. Hillier and Michael D. McKenzie (2006) empirically investigated the exposure of country-level conditional stock return volatilities to conditional global stock return volatility. It provides evidence that conditional stock market return volatilities have a contemporaneous association with global return volatilities. Rajni Mala and Mahendra Reddy (2007) used the Autoregressive Conditional Heteroskedasticity (ARCH) models and its extension, the Generalized ARCH model was used to find out the presence of the stock market volatility on Fiji's stock market and it was found out that seven out of the sixteen firms listed on Fiji's stock market is volatile. Christos Floros (2008) examined the use of GARCH-type models for modelling volatility and explaining financial market risk. He used daily data from Egypt (CMA General index) and Israel (TASE-100 index). Various time series methods were employed, including the simple GARCH model, as well as exponential GARCH, threshold GARCH, asymmetric component GARCH, the component GARCH and the power GARCH model and concluded that increased risk will not necessarily lead to a rise in the returns. Hung-Chun Liu, Yen-Hsien Lee and Ming-Chih Lee (2009) found that GARCH-SGED model is superior to the GARCH-N model in forecasting China stock market's volatility. Sabur Mollah and Asma Mobarek (2009) investigated the time-varying risk return relationship and the persistence of shocks to volatility within GARCH framework both in developed and emerging markets. Found that there is a long-term persistence shock in emerging markets compared to developed markets. Amir Rafique and Kashif-Ur-Rehman (2011) compared the variance structure of high (daily) and low (weekly, monthly) frequencies of data. By employing ARCH (1) and GARCH (1, 1) models and found that the variance structure of high-frequency data were dissimilar from the low frequencies of data.

In Indian financial markets ARCH/GARCH models have been used by Thomas (1995, 1998), Pattanaik and Chatterjee (2000) and Kaur (2002) to model volatility. Shenbagaraman (2003) examined the impact of introduction of index futures and options on the volatility of underlying stock index using a GARCH model. Kumar and Mukhopadhyay (2002) applied the GARCH models to examine the co-movement and volatility transmission between the US and Indian stock markets. Hojatallah Goudarzi (2011) studied the effects of good and bad news on volatility in the Indian stock markets using asymmetric ARCH models and concluded that, bad news in the Indian stock market increases volatility more than good news.

Compared to a large empirical literature on developed markets, only a few studies have been conducted on emerging markets, including Choudhry (1996) on 6 emerging markets, De Santis and Imrohoroglu (1997) on 14 emerging markets, and Lee et al. (2001) on China's stock markets. All these studies report positive but not statistically significant relationships between stock market returns and conditional variance in most of the emerging stock markets under investigation. The main contribution of this study is to present more reliable evidence on their relationship between stock returns and volatility, and asymmetry effect in emerging stock markets.

DATA AND METHODOLOGY

According to the Goldman Sachs report (2003) Brazil, Russia, China and India (BRIC) are the most emerging markets over the world. Goldman Sachs argues that the economic potential of Brazil, Russia, India, and China is such that they could become among the four most dominant economies by the year 2050. In its revised report in 2005 Goldman reported the Mexico is also a potential country which can join BRIC on the economic growth ground. So these five most emerging markets have been taken as sample for the study.

SENSEX has been taken as a proxy to its market. Actually, SENSEX is a representative index of Indian stock market, which comprises thirty most liquid individual stocks at Bombay Stock Exchange Ltd. (BSE). It is also considered as an indicator of the performance of whole economy. RTSI has been used as a proxy of the Russian Trading System Stock exchange for Russia. Shanghai Stock Exchange (SSE) for China, Brazil BOVESPA Index for Brazil, IPC of Mexican Stock Exchange (BMV:BOLSA) for Mexico. Accordingly, the daily closing prices of all indices were collected from moneycontrol.com for the period January 1999 to May 2010.

Daily stock prices have been converted to daily returns. The present study uses the logarithmic difference of prices of two successive periods for the calculation of rate of return. Time series data are often assumed to be non-stationary. It is thus necessary to perform a pre-test to ensure that a stationary relationship existed among the variables. This would avoid problems of spurious regressions. To test for the presence of unit roots, the standard Augmented Dickey-Fuller (ADF) and Phillips-Perron (PP) tests are employed in the study. Econometrics analysis package EView has been used to test the return and volatility data for various statistical properties and to estimate GARCH/GARCH-M/EGARCH/models.

MODEL SPECIFICATION

This study is based on four model specification-Standard GARCH model, GARCH-M model and EGARCH model. One of the primary restrictions of GARCH models is that they enforce a symmetric response of volatility to positive and negative shocks. This arises since the conditional variance in GARCH model is function of the magnitudes of the lagged residuals and not their signs (in other words, by squaring the lagged error in GARCH, the sign is lost). However, it has been argued that a negative shock to financial time series is likely to cause volatility to rise by more than a positive shock of the same magnitude. In the case of equity returns, such asymmetries are typically attributed to asymmetric effects, whereby a fall in the value of a firm's stock causes the firm's debt to equity ratio, to rise. This leads shareholders, who bear the residual risk of the firm, to perceive their future cash flow stream as being relatively more risky (Brooks, 2002). To model this phenomenon in this study we applied the model that allow for asymmetric shocks to volatility, the Exponential GARCH (EGARCH) model proposed by Nelson (1991).

GARCH MODEL

The basic and most widespread model GARCH (1, 1) was used in this study. The GARCH (1, 1) model is based on the assumption that forecasts of time varying variance depend on the lagged variance of the asset. An unexpected increase or decrease in returns at time t will generate an increase in the expected variability in the next period. The specification of the GARCH (1,1) model:

$$R_t = c + \rho R_{t-1} + \varepsilon_t \quad \dots\dots\dots 1(a)$$

$$\varepsilon_t / \varepsilon_{t-1} \sim N(0, \sigma_t^2) \quad \dots\dots\dots 1(b)$$

$$\sigma_t^2 = \omega + \alpha \varepsilon_{t-1}^2 + \beta \sigma_{t-1}^2 \quad \dots\dots\dots 1(c)$$

R_t is the stock market return and ε_t stand for a Gaussian innovation with zero mean.

σ_t^2 is known as conditional variance since it is a one period ahead estimate for the variance calculated based on any past information thought relevant. $\alpha \varepsilon_{t-1}^2$ is the information about volatility during the previous period and $\beta \sigma_{t-1}^2$ is shows the fitted variance from the model during the previous period.

GARCH-M MODEL

GARCH in mean or GARCH-M Model was originally proposed by Engle, Lilien and Robins (1987). In this model conditional mean is specified as a linear function of conditional variance. This study uses the following GARCH-M (1, 1) Model:

$$R_t = c + \rho R_{t-1} + \gamma \sigma_t^2 + \varepsilon_t \quad \dots\dots\dots 2(a)$$

$$\varepsilon_t / \varepsilon_{t-1} \sim N(0, \sigma_t^2) \quad \dots\dots\dots 2(b)$$

$$\sigma_t^2 = \omega + \alpha \varepsilon_{t-1}^2 + \beta \sigma_{t-1}^2 \quad \dots\dots\dots 2(c)$$

R_t is the stock market return and ε_t stand for a Gaussian innovation with zero mean. Among the parameters to be estimated, the most relevant one for this study is the parameter γ because both the sign and significance of this parameter directly shed light on the nature of relationship between stock market return and volatility. More precisely a significant positive estimate of γ implies that investors who trade stocks are compensated with higher returns for bearing higher level of risk. A significant negative estimates indicates that investors are penalized for bearing higher level of risk.

σ_t^2 is known as conditional variance since it is a one period ahead estimate for the variance calculated based on any past information thought relevant. $\alpha \varepsilon_{t-1}^2$ is the information about volatility during the previous period and $\beta \sigma_{t-1}^2$ is shows the fitted variance from the model during the previous period.

EGARCH MODEL

This model was proposed by Nelson (1991). EGARCH Model is based on log transformation of conditional variance $[\log(\sigma_t^2)]$ then even if the parameters are negative, σ_t^2 will be positive.. Thus there is no need to artificially impose non negativity constraints on model parameters. Therefore this Exponential GARCH Model is most popular among the asymmetric GARCH Models.

$$h_t = \alpha_0 + \sum_{i=1}^p \alpha_i \frac{|\varepsilon_{t-i}| + \gamma_i \varepsilon_{t-i}}{\sigma_{t-i}} + \sum_{j=1}^q \beta_j h_{t-j}$$

Where $h_t = \sigma_t^2$. Note that when ε_{t-1} is positive or there is "good news", the total effect of ε_{t-1} is $(1+\gamma) / \varepsilon_{t-1}$; in contrast, when ε_{t-1} is negative or there is "bad news", the total effect of ε_{t-1} is $(1-\gamma) / \varepsilon_{t-1}$. Bad news can have a large impact on volatility and the value of γ would be expressed to negative.

This study uses the following EGARCH (1, 1) model:

$$R_t = c + \rho R_{t-1} + \varepsilon_t \quad \dots\dots\dots 4(a)$$

$$\ln h_t^2 = \omega + \alpha \left| \frac{\varepsilon_{t-1}}{h_{t-1}} \right| + \gamma \frac{\varepsilon_{t-1}}{h_{t-1}} + \beta \ln h_{t-1}^2$$

$\dots\dots\dots 3(a)$

To accept the Null Hypothesis of no asymmetric effect in EGARCH model, the γ coefficient must not be negative otherwise alternative hypothesis will be accepted. In other words, if the γ coefficient is negative there is evidence of asymmetric effects in the series.

EMPIRICAL FINDINGS

First of all comparative analysis of different markets have been done on the basis of various descriptive statistics measures and the results of the same are given in Table 1.

TABLE 1: DESCRIPTIVE STATISTICS OF THE RETURN SERIES OF VARIOUS STOCK MARKETS' RETURN FOR THE PERIOD JANUARY 1999 TO MAY 2010

Statistics	BRAZIL	MEXICO	RUSSIA	INDIA	CHINA
Mean	0.001	0.001	0.001	0.001	0.000
Median	0.001	0.001	0.002	0.001	0.000
Std. Dev.	0.021	0.016	0.026	0.018	0.017
Kurtosis	17.847	6.522	10.246	8.497	7.341
Skewness	0.800	0.128	-0.316	-0.106	-0.098
ARCH-LM Statistics	63.906(0.000)	38.3825(0.000)	111.432(0.000)	107.697(0.000)	48.945(0.000)
K-S Statistics	2.541(0.000)	3.308(0.000)	3.308(0.000)	4.076(0.000)	4.383(0.000)
Minimum	-0.121	-0.083	-0.212	-0.118	-0.093
Maximum	0.288	0.104	0.202	0.160	0.094

Table1 shows that over the sample period January 1999 to May 2010 highest daily mean return was given by Russian stock market with highest standard deviation which conform the thumb rule of higher risk and higher return. Out of all six markets, second rank has been achieved by Brazil with an average daily return of .08 per cent and standard deviation of the return series is 2.11 per cent. Mexico stock market gained the third highest return followed by India and China respectively. But in case of risk India stock market attained third position with a standard deviation of 1.78 per cent followed by the China and Mexico. In each country null hypothesis is of homoskedasticity but by looking at the p value given in above table it can be interpreted that null hypothesis is rejected at 5% significance level. It suggests that there is heteroskedasticity in stock returns.

The time series have self-explaining power. So sometime these normal statistical tests produce misleading results, in order to remove this ambiguity econometric tools have been used. For an econometric model it is a pre-condition that the series must be stationary and to check whether these time series are stationary or not Augmented Dickey Fuller (ADF) and Phillip Perron test have been applied. Results of the same have been produced in Table 2. Table shows that all series are stationary at 5 per cent level of significance. Null hypothesizes for both of the tests that the series have a unit root are rejected as the test statistics in all case are higher the critical values given in table.

TABLE 2: RESULTS OF AUGMENTED DICKEY FULLER (ADF) TEST AND PHILLIP PERRON (PP) TEST

Country	Augmented Dickey Fuller Test(ADF)		Phillip Perron Test (PP)	
	With Intercept	With Trend & Intercept	With Intercept	With Trend & Intercept
Brazil	-38.12856*	-38.12531*	-52.00967*	-52.00436*
Russia	-34.95468*	-34.99189*	-47.52974*	-47.56467*
India	-37.69513*	-37.68983*	-49.39980*	-49.39202*
China	-37.11691*	-37.10996*	-51.38015*	-51.37072*
Mexico	-38.10030*	-38.09711*	-47.97436*	-47.96885*
Critical Values				
1 % level of Significance	-3.432483	-3.961305	-3.432479	-3.961299
5 % level of Significance	-2.862367	-3.411402	-2.862366	-3.411402
10 % level of Significance	-2.567255	-3.127552	-2.567254	-3.127552

Note: * Rejection of null hypothesis at 5 per cent level of significance.

BRAZIL

Table 3 presents the results of standard GARCH model and GARCH-M model. GARCH-M model shows that coefficient of variance in return equation is positive and significant. This result is consistent with ICAPM theory means as risk increase, return also increase.

The log likelihood value of both models shows that after including the variance term in return equation there is no significant improvement in model specification. In variance equation the coefficient of lagged squared residual and lagged conditional variance is positive and highly significant. Sum of both coefficients is close to unity which indicates that shock to conditional variance will be highly persistent. Impact of previous volatility on current volatility is more in comparison to impact of recent information on current volatility.

TABLE 3: RESULTS OF GARCH AND GARCH-M MODELS IN BRAZIL

PARAMETERS	GARCH			GARCH – M		
	Coefficient	Z – Value	p – value	Coefficient	Z – Value	p – value
Return Equation						
Intercept (c)	0.0012	3.4016	0.0007	-0.0003	-0.0439	0.9650
AR (1)	0.0151	0.7615	0.4463	0.0123	0.5767	0.5641
Volatility	-	-	-	3.9371	2.6466	0.0081
Variance Equation						
Intercept (ω)	0.0001	5.8554	0.0000	0.0001	5.9587	0.0000
A	0.0731	8.8609	0.0000	0.0953	12.1912	0.0000
B	0.8961	81.7093	0.0000	0.8672	74.4304	0.0000
Diagnostic Statistics						
log likelihood	7212.1510			7204.4750		
Durbin waston statistic	1.9880			1.9862		
Schwarz criterion	-5.1045			-5.0963		
Akaike Information criterion	-5.1151			-5.1089		

Table 4 shows the results of EGARCH model which presents that coefficient of asymmetry (-0.087930) is negative and highly significant which prove the strong presence of asymmetry in volatility, i.e., tendency for volatility to rise more following a large price fall than following a price rise of the same magnitude.

TABLE 4: RESULTS OF EGARCH MODEL IN BRAZIL

PARAMETERS	EGARCH		
	Coefficient	Z - Value	p - value
Return Equation			
Intercept (c)	0.0006	1.8305	0.0672
AR (1)	0.0308	1.5071	0.1318
Variance Equation			
Intercept (ω)	-0.3658	-8.4014	0.0000
A	0.1321	9.3109	0.0000
B	0.9672	207.8423	0.0000
Asymmetry (γ)	-0.0879	-9.3302	0.0000
Diagnostic Statistics			
log likelihood	7244.9960		
Durbin waston statistic	2.0191		
Schwarz criterion	-5.1250		
Akaike Information criterion	-5.1377		

RUSSIA

Table 5 presents the results of GARCH model and GARCH-M model which shows that coefficient of variance in return equation is positive but insignificant which is consistent with ICAPM theory log likelihood of both model shows that after including variance term in return equation makes no improvement in model specification.

Coefficient of lagged squared residual and lagged conditional variance is positive and significant in case of both the model. Impact of lagged conditional variance on volatility is higher than impact of lagged squared residual.

TABLE 5: RESULTS OF GARCH AND GARCH-M MODELS IN RUSSIA

PARAMETERS	GARCH			GARCH – M		
	Coefficient	Z – Value	p - value	Coefficient	Z – Value	p - value
Return Equation						
Intercept (c)	0.0019	5.0807	0.0000	0.0019	3.6683	0.0002
AR (1)	0.0975	4.8207	0.0000	0.0978	4.8094	0.0000
Volatility	-	-	-	0.1763	0.1643	0.8695
Variance Equation						
Intercept (ω)	0.0001	8.0565	0.0000	0.0001	7.9942	0.0000
A	0.1249	12.5593	0.0000	0.1253	12.5073	0.0000
B	0.8598	81.4847	0.0000	0.8596	80.8548	0.0000
Diagnostic Statistics						
log likelihood	6922.0010			6921.5080		
Durbin waston statistic	1.9692			1.9686		
Schwarz criterion	-4.8606			-4.8575		
Akaike Information criterion	-4.8711			-4.8701		

Table 6 presents results of EGARCH model where coefficient of asymmetry is negative (-0.044375) and highly significant. It means asymmetry effect present in volatility of Russian stock market, i.e. tendency for volatility to rise more following a price fall than following a price rise of the same magnitude.

TABLE 6: RESULTS OF EGARCH MODEL IN RUSSIA

PARAMETERS	EGARCH		
	Coefficient	Z – Value	p – value
Return Equation			
Intercept (c)	0.0016	4.4191	0.0000
AR (1)	0.0985	5.1710	0.0000
Variance Equation			
Intercept (w)	-0.4289	-11.8162	0.0000
A	0.2372	14.9591	0.0000
B	0.9676	274.4145	0.0000
Asymmetry (γ)	-0.0444	-5.2320	0.0000
Diagnostic Statistics			
log likelihood	6913.7760		
Durbin waston statistic	1.9721		
Schwarz criterion	-4.8521		
Akaike Information criterion	-4.864631		

INDIA

Table 7 presents the results of GARCH and GARCH-M model. The coefficient of variance in return equation is negative and statistically insignificant for sensex index. This result is inconsistent with ICAPM theory .in other words, the market does not seems to price time varying volatility. The log likelihood value of GARCH-M model in comparison to GARCH model is not significant. Therefore including variance term in return equation does not make any improvement in model specification.

In both model coefficient of both lagged squared residual and lagged conditional variance term in variance equation are highly statistically significant. Also the sum of coefficient of lagged squared residual and lagged conditional variance is very close to unity. This implies that shock to the conditional variance will be highly persistent.

TABLE 7: RESULTS OF GARCH AND GARCH-M MODELS IN INDIA

PARAMETERS	GARCH			GARCH – M		
	Coefficient	Z – Value	p – value	Coefficient	Z – Value	p – value
Return Equation						
Intercept (c)	0.0143	5.7342	0.0000	0.0014	3.9674	0.0001
AR (1)	0.0789	3.9060	0.0001	0.0791	3.8967	0.0001
Volatility	-	-	-	-0.0581	-0.0353	0.9719
Variance Equation						
Intercept (w)	0.0001	7.5898	0.0000	0.0001	7.5875	0.0000
A	0.1324	14.3627	0.0000	0.1323	14.3370	0.0000
B	0.8500	93.1404	0.0000	0.8501	93.0647	0.0000
Diagnostic Statistics						
log likelihood	7766.8950			7766.9020		
Durbin waston statistic	2.0044			2.0050		
Schwarz criterion	-5.4983			-5.4954		
Akaike Information criterion	-5.5088			-5.5081		

Table 8 presents the results of EGARCH model which shows that the coefficient of asymmetry is (-0.109289) negative and highly significant. The results indicates a strong presence of the asymmetry effect in volatility i.e., volatility increase disproportionately with negative shock in stock return.

TABLE 8: RESULTS OF EGARCH MODEL IN INDIA

PARAMETERS	EGARCH		
	Coefficient	Z – Value	p – value
Return Equation			
Intercept (c)	0.0007	2.7641	0.0057
AR (1)	0.9723	0.0201	0.0000
Variance Equation			
Intercept (w)	-0.5616	-12.8031	0.0000
A	0.2484	16.1216	0.0000
B	0.9556	215.1066	0.0000
Asymmetry (γ)	-0.1093	-10.9850	0.0000
Diagnostic Statistics			
log likelihood	7796.1840		
Durbin waston statistic	2.043183		
Schwarz criterion	-5.516219		
Akaike Information criterion	-5.528874		

CHINA

Table 9 shows the results of GARCH and GARCH-M model presents that coefficient of variance in return equation is positive which is consistent with ICAPM theory means market price the time varying volatility. The log likelihood value of GARCH-M model in comparison to standard GARCH model is not significant. Therefore including variance term in return equation does not make any improvement in model specification.

In both model coefficient of lagged squared residual and lagged conditional variance is positive and highly significant and sum of both the coefficient is close to unity means shock to conditional variance will be persistent and impact of GARCH term on volatility is more than impact of ARCH term.

TABLE 9: RESULTS OF GARCH AND GARCH-M MODELS IN CHINA

PARAMETERS	GARCH			GARCH – M		
	Coefficient	Z – Value	p – value	Coefficient	Z – Value	p – value
Return Equation						
Intercept (c)	0.0003	1.3272	0.8440	-0.0007	-0.1862	0.8523
AR (1)	0.0132	0.7008	0.4835	0.0134	0.7029	0.4821
Volatility	-	-	-	2.1834	1.2829	10.1995
Variance Equation						
Intercept (ω)	0.0000	7.0562	0.0000	0.0000	6.7599	0.0000
A	0.0668	8.3594	0.0000	0.0672	17.4172	0.0000
B	0.9255	292.1904	0.0000	0.9252	264.5065	0.0000
Diagnostic Statistics						
log likelihood	7469.3440			7465.8410		
Durbin waston statistic	2.0124			2.0087		
Schwarz criterion	-5.5615			-5.5559		
Akaike Information criterion	-5.5725			-5.5691		

A table 10 shows result of EGARCH model which presents that coefficient of asymmetry is negative and highly significant. It proves that asymmetry presents in volatility means if there is negative news then volatility will be high in comparison to volatility rise as a result of positive news.

TABLE 10: RESULTS OF EGARCH MODEL IN CHINA

PARAMETERS	EGARCH		
	Coefficient	Z - Value	p – value
Return Equation			
Intercept (c)	0.0004	1.6177	0.1057
AR (1)	0.0097	0.5421	0.5877
Variance Equation			
Intercept (ω)	-0.1884	-14.2962	0.0000
A	0.1243	22.9289	0.0000
B	0.9882	619.5284	0.0000
Asymmetry (γ)	-0.0257	-5.7102	0.0000
Diagnostic Statistics			
log likelihood	7477.0330		
Durbin waston statistic	2.0052		
Schwarz criterion	-5.5643		
Akaike Information criterion	-5.577479		

MEXICO

Table 11 shows the results of standard GARCH model and GARCH-M model. The coefficient of volatility in return equation is positive and insignificant means as risk increase return also increase. The log likelihood value shows that after including variance term in return equation there is no significant improvement in the GARCH-M model in comparison to standard GARCH model. The coefficient of lagged squared residuals and lagged conditional variance is positive and highly significant and sum of both the coefficient is close to unity which shows that shock to conditional variance will persist in future volatility.

TABLE 11: RESULTS OF GARCH AND GARCH-M MODELS IN MEXICO

PARAMETERS	GARCH			GARCH – M		
	Coefficient	Z – Value	p – value	Coefficient	Z – Value	p – value
Return Equation						
Intercept (c)	0.0120	4.5502	0.0000	0.0008	1.9262	0.0541
AR (1)	0.0904	4.4838	0.0000	0.0909	4.4588	0.0000
Volatility	-	-	-	2.8992	1.4985	0.1340
Variance Equation						
Intercept (ω)	0.0000	5.6294	0.0000	0.0000	5.6164	0.0000
A	0.0739	10.3138	0.0000	0.0770	10.4422	0.0000
B	0.9148	126.8353	0.0000	0.9115	123.1356	0.0000
Diagnostic Statistics						
log likelihood	8188.7050			8187.6520		
Durbin waston statistic	1.9504			1.9482		
Schwarz criterion	-5.7145			-5.7109		
Akaike Information criterion	-5.7249			-5.7234		

Table 12 indicates result of EGARCH model. The coefficient of asymmetry is negative (-0.102642) and highly significant. It proves that asymmetry effect present in volatility of Mexico stock market.

TABLE 12: RESULTS OF EGARCH MODEL IN MEXICO

PARAMETERS	EGARCH		
	Coefficient	Z – Value	p – value
Return Equation			
Intercept (c)	0.0007	2.8261	0.0047
AR (1)	0.0990	5.0532	0.0000
Variance Equation			
Intercept (ω)	-0.2988	-9.5097	0.0000
A	0.1442	9.0446	0.0000
B	0.9782	341.2436	0.0000
Asymmetry (γ)	-0.1026	-11.2057	0.0000
Diagnostic Statistics			
log likelihood	8235.7140		
Durbin waston statistic	1.9679		
Schwarz criterion	-5.7446		
Akaike Information criterion	-5.757058		

CONCLUSION

This study investigated and modeled the stock market volatility in five developing stock markets using GARCH class of models; it is found that the sum of the GARCH coefficient is close to one in almost all the cases. That implies persistent of the conditional variance in all selected developing countries. The study shows positive relationship between expected stock return and conditional volatility prevails in Mexico, Russia and china, while such a relationship is insignificant in all the above said countries. This finding of the study is consistent with the literature using GARCH-M model (e.g., French et al, 1987; Choudhary 1996; De Santis, 1997; Lee et al., 2001; Jaeeun shin, 2005). Where the existence of week relationship between risk and return is documented. In Brazil it is found that relationship is positive and highly significant which support the literature (Hui Guo and Christopher J. Neely, 2006). India is the only country in selected countries where the relationship between risk and return is negative but this relationship is insignificant which support the literature (Christos Floros, 2008). Hence it is possible that investor in Brazil, Mexico, Russia and China are compensated for bearing relevant local market risk while investors in India are often penalized by bearing irrelevant local market risk. EGARCH model used in this study shows that a strong asymmetric reaction of conditional volatility in response to the positive and negative innovation in conditional returns in all the selected developing countries. This finding is consistent with the literature (Hojatallah Goudarzi, 2011)

REFERENCES

- Aggarwal, R., C. Inclan and R. Leal, (1999), "Volatility in emerging stock markets", *Journal of Financial and Quantitative Analysis*, 34, 33-55.
- Akgiray, V., (1989), "Conditional Heteroskedasticity in Time Series of Stock Returns: Evidence and Forecasts," *Journal of Business*, 62(1), 55-80.
- Black, F. and M. Scholes, (1973), "The pricing of options and corporate liabilities". *Journal of Political Economy*, 81 (3), 637-654.
- Bollerslev, T., (1986), "Generalized autoregressive conditional heteroskedasticity", *Journal of Econometrics*, 31, 307-327.
- Bollerslev, T., (1990), "Modelling the coherence in short-run nominal exchange rates: A multivariate generalized ARCH model", *Review of Economics and Statistics*, 72, 498-505.
- Cai, Charlie X., Faff, Robert W., Hillier, David J. and McKenzie, Michael D., (2006), "Modelling return and conditional volatility exposures in global stock markets", *Rev quant Finan Acc*, 27, 125-142.
- Choudhry, T., (1996), "Stock Market Volatility and the Crash of 1987: Evidence from Six Emerging Markets," *Journal of International Money and Finance*, 15, 969-981.
- Chun Liu, H., Hsien Lee, Y. and Chih Lee, M., (2009), "Forecasting China Stock Markets Volatility via GARCH Models Under Skewed-GED Distribution", *Journal of Money, Investment and Banking*, 7, 5-15.
- De Santis, G. and S. Imrohoroglu, (1997), "Stock Returns and Volatility in Emerging Financial Markets," *Journal of International Money and Finance*, 16, 561-579.
- Engle, R. F., (1982), "Autoregressive conditional heteroscedasticity with estimates of the variance of United Kingdom inflation", *Econometrica*, 50, 987-1007.
- Engle, R., (2001), "GARCH 101: The Use of ARCH/GARCH Models in Applied Econometrics", *Journal of Economic Perspectives*, Vol. 15, 157-168.
- Floros, C., (2008), "Modelling Volatility using GARCH Models: Evidence from Egypt and Israel", *Middle Eastern Finance and Economics*, issue 2, 31-41.
- French, K. R., G. W. Schwert, and R. F. Stambaugh, (1987), "Expected Stock Returns and Volatility," *Journal of Financial Economics*, 19(1), 3-29.
- Geyer, A L J (1994). "Volatility Estimates of the Vienna Stock Market," *Applied Financial Economics*, 4(6), 449-455.
- Goudarzi, H., (2011), "Modeling Asymmetric Volatility in the Indian Stock Market", *International Journal of Business and Management*, Vol. 6, No. 3, 221-231.
- Harvey, C. R., (2001), "The Specification of Conditional Expectations," *Journal of Empirical Finance*, 8(5), 573-637.
- Kaur, H (2002), *Stock Market Volatility in India*, New Delhi: Deep & Deep Publications.
- Koutmos, G. and R. Saidi R, (1995), "The asymmetric effect in individual stocks and the debt to equity ratio", *Journal of Business Finance and Accounting*, 7, 1063-1073.
- Koutmos, G. F., (1999), "Asymmetric price and volatility adjustments in emerging Asian stock market", *Journal of Business Finance & Accounting*, 26, 83-101.
- Kumar, K K and Mukhopadhyay, C (2002). "A Case of US and India," Paper published as part of the NSE Research Initiative, available at www.nseindia.com.
- Lee, C. F., G. Chen, and O. Rui, (2001), "Stock Returns and Volatility on China's Stock Markets," *Journal of Financial Research*, 24(4), 523-543
- Li, Q., J. Yang, and C. Hsiao, (2003), "The Relationship between Stock Returns and Volatility in International Stock Markets," *Working Paper*, Texas A & M University and University of Southern California.
- Mala, R. and Reddy, M., (2007), "Measuring Stock Market Volatility in an Emerging Economy", *International Research Journal of Finance and Economics*, issue 8, 126-133.
- Mollah, S. and Mobarek, A., (2009), "Market Volatility Across Countries-Evidence from International Markets", *Journal of Economics and Finance*, vol. 26, No. 4, 257-274.
- Neely, C. J. and Guo, H., (2006), "Investigating the Intertemporal Risk-Return Relation in International Stock Markets with the Component GARCH Model", Federal Reserve Bank of St. Louis, Research Division, Working Paper 2006-006A.
- Nicholls, D and Tonuri, D (1995). "Modelling Stock Market Volatility in Australia," *Journal of Business Finance and Accounting*, 22(3), 377-395.
- Pattanaik, S and Chatterjee, B (2000). "Stock Returns and Volatility in India: An Empirical Puzzle?" *Reserve Bank of India Occasional Papers*, 21(1), summer, 37-60.
- Rehman, K. and Rafique, A., (2011), Comparing the persistency of different frequencies of stock returns volatility in an emerging market: A case study of Pakistan, *African Journal of Business Management* Vol. 5(1), pp. 59-67.
- Shenbagaraman, P (2003). "Do Futures and Options Trading Increase Stock Market Volatility?" Paper published as part of the NSE Research Initiative, available at www.nseindia.com
- Shin, J., (2005), "Stock Returns and Volatility in Emerging Stock Markets", *International Journal of Business and Economics*, Vol. 4, No. 1, 31-43.
- Thomas, S (1995). "An Empirical Characterization of the Bombay Exchange," Ph.D Thesis, University of Southern California, KAP300, 3620 S Vermont, USC, LA, CA 90089-0253.
- Wu, G., (2001), "The Determinants of Asymmetric Volatility", *The Review of Financial Studies*, Vol. 14, No. 3, pp. 837-859.
- Xuejing, X., (2004), "Why Does Stock Market Volatility Differ across Countries? Evidence from Thirty Seven International Markets", *International Journal of Business*, 9(1), 83-102.

REQUEST FOR FEEDBACK

Dear Readers

At the very outset, International Journal of Research in Commerce, IT and Management (IJRCM) acknowledges & appreciates your efforts in showing interest in our present issue under your kind perusal.

I would like to request you to supply your critical comments and suggestions about the material published in this issue as well as on the journal as a whole, on our E-mails i.e. **infoijrcm@gmail.com** or **info@ijrcm.org.in** for further improvements in the interest of research.

If you have any queries please feel free to contact us on our E-mail **infoijrcm@gmail.com**.

I am sure that your feedback and deliberations would make future issues better – a result of our joint effort.

Looking forward an appropriate consideration.

With sincere regards

Thanking you profoundly

Academically yours

Sd/-

Co-ordinator

ABOUT THE JOURNAL

In this age of Commerce, Economics, Computer, I.T. & Management and cut throat competition, a group of intellectuals felt the need to have some platform, where young and budding managers and academicians could express their views and discuss the problems among their peers. This journal was conceived with this noble intention in view. This journal has been introduced to give an opportunity for expressing refined and innovative ideas in this field. It is our humble endeavour to provide a springboard to the upcoming specialists and give a chance to know about the latest in the sphere of research and knowledge. We have taken a small step and we hope that with the active co-operation of like-minded scholars, we shall be able to serve the society with our humble efforts.

Our Other Journals

