

# INTERNATIONAL JOURNAL OF RESEARCH IN COMPUTER APPLICATION & MANAGEMENT

I  
J  
R  
C  
M



A Monthly Double-Blind Peer Reviewed (Refereed/Juried) 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., Cabell's Directories of Publishing Opportunities, U.S.A.

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

Index Copernicus Publishers Panel, Poland with IC Value of 5.09 & number of libraries all around the world.

Circulated all over the world & Google has verified that scholars of more than 2022 Cities in 153 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

<http://ijrcm.org.in/>

## CONTENTS

Sr. No.	TITLE & NAME OF THE AUTHOR (S)	Page No.
1.	ASSESSING THE CONTRIBUTION OF MICROFINANCE INSTITUTION SERVICES TO SMALL SCALE ENTERPRISES OPERATION: A CASE STUDY OF OMO MFI, HAWASSA CITY, ETHIOPIA <i>GELFETO GELASSA TITTA &amp; DR B. V. PRASADA RAO</i>	1
2.	OPTIMAL RESOURCE ALLOCATION EARLY RETURNS BUSINESS USING GOAL PROGRAMMING MODEL (GP) <i>MOHAMMAD REZA ASGARI, AHMAD GHASEMI &amp; SHAHIN SAHRAEI</i>	10
3.	CORRELATION FOR THE PREDICTION OF EMISSION VALUES OF OXIDES OF NITROGEN AND CARBON MONOXIDE AT THE EXIT OF GAS TURBINE COMBUSTION CHAMBERS <i>LISSOUCK MICHEL, FOZAO KENNEDY F, TIMBA SADRACK M. &amp; BAYOCK FRANÇOIS N.</i>	19
4.	CORPORATE GOVERNANCE AND PERFORMANCE: THE RELATIONSHIP BETWEEN BOARD CHARACTERISTICS AND FINANCIAL PERFORMANCE AMONG COMPANIES LISTED ON THE NAIROBI SECURITIES EXCHANGE <i>JAMES O. ABOGE., DR. WILLIAM TIENG'O &amp; SAMUEL OYIKE</i>	25
5.	AN IMPACT ASSESSMENT OF THE CONTRIBUTORY PENSION SCHEME ON EMPLOYEE RETIREMENT BENEFITS OF QUOTED FIRMS IN NIGERIA <i>SAMUEL IYIOLA KEHINDE OLUWATOYIN, EZEGWU CHRISTIAN IKECHUKWU &amp; UMOGBAI, MONICA E.</i>	31
6.	IMPACT OF WORKING CAPITAL MANAGEMENT ON PROFITABILITY OF MANUFACTURING COMPANIES OF COLOMBO STOCK EXCHANGE (CSE) IN SRI LANKA <i>S.RAMESH &amp; S.BALAPUTHIRAN</i>	38
7.	THE RESPONDENTS PERCEPTION OF CUSTOMER CARE INFLUENCE ON CUSTOMER SATISFACTION IN RWANDAN COMMERCIAL BANKS - A CASE STUDY: BANQUE POPULAIRE DU RWANDA <i>MACHOGU MORONGE ABIUD, LYNET OKIKO, VICTORIA KADONDI &amp; NDAYIZEYE GERVAIS</i>	43
8.	TOWARDS CASH-LESS ECONOMY IN NIGERIA: ADDRESSING THE CHALLENGES, AND PROSPECTS <i>AGUDA NIYA A.</i>	50
9.	PERFORMANCE ANALYSIS: A STUDY OF PUBLIC SECTOR BANKS IN INDIA <i>DR. BHAVET, PRIYA JINDAL &amp; DR. SAMBHAV GARG</i>	54
10.	ANALYSIS OF MANAGEMENT EFFICIENCY OF SELECTED PRIVATE SECTOR INDIAN BANKS <i>SULTAN SINGH, NIYATI CHAUDHARY &amp; MOHINA</i>	59
11.	DETERMINANTS OF CORPORATE CAPITAL STRUCTURE WITH REFERENCE TO INDIAN FOOD INDUSTRIES <i>DR. U.JERINABI &amp; S. KAVITHA</i>	63
12.	AN OVERVIEW OF HANDLOOM INDUSTRY IN PANIPAT <i>DR. KULDEEP SINGH &amp; DR. MONICA BANSAL</i>	68
13.	CONTACT OF GLOBALISATION ON EDUCATION AND CULTURE IN INDIA <i>R. SATHYADEVI</i>	74
14.	A STUDY ON BRAND AWARENESS AND CUSTOMER PREFERENCE TOWARDS SAFAL EDIBLE OIL <i>DR. S. MURALIDHAR, NOOR AYESHA &amp; SATHISHA .S.D</i>	78
15.	COMPETENCY MAPPING: CUTTING EDGE IN BUSINESS DEVELOPMENT <i>DR. T. SREE LATHA &amp; SAVANAM CHANDRA SEKHAR</i>	89
16.	MANAGEMENT OF SIZE, COST AND EARNINGS OF BANKS: COMPANY LEVEL EVIDENCE FROM INDIA <i>DR. A. VIJAYAKUMAR</i>	92
17.	SELECTION OF MIXED SAMPLING PLAN WITH QSS - 3(n;cN,cT) PLAN AS ATTRIBUTE PLAN INDEXED THROUGH MAPD AND LQL <i>R. SAMPATH KUMAR, M.INDRA &amp; R.RADHAKRISHNAN</i>	98
18.	AN ANALYSIS ON MEASUREMENT OF LIQUIDITY PERFORMANCE OF INDIAN SCHEDULED COMMERCIAL BANKS <i>DR. SAMBHAV GARG, PRIYA JINDAL &amp; DR. BHAVET</i>	102
19.	IMPLEMENTATION OF MULTI AGENT SYSTEMS WITH ONTOLOGY IN DATA MINING <i>VISHAL JAIN, GAGANDEEP SINGH &amp; DR. MAYANK SINGH</i>	108
20.	THE INSTITUTIONAL SET UP FOR THE DEVELOPMENT OF COTTAGE INDUSTRY: A CASE STUDY OF MEGHALAY'S COTTAGE SECTOR <i>MUSHTAQ MOHMAD SOFI &amp; DR. HARSH VARDHAN JHAMB</i>	115
21.	AN EMPIRICAL STUDY ON THE DETERMINANTS OF CALL EUROPEAN OPTION PRICES AND THE VERACITY OF BLACK-SCHOLES MODEL IN INDIAN OPTIONS MARKET <i>BALAJI DK &amp; DR. Y.NAGARAJU</i>	122
22.	FINANCIAL PERFORMANCE EVALUATION OF PRIVATE SECTOR AND PUBLIC SECTOR BANKS IN INDIA: A COMPARATIVE STUDY <i>KUSHALAPPA. S &amp; SHARMILA KUNDER</i>	128
23.	A REQUIRE FOR MAPPING OF HR-MANAGERIAL COMPETENCY TO CONSTRUCT BOTTOM LINE RESULTS <i>DR. P. KANNAN &amp; DR. N. RAGAVAN</i>	133
24.	CORPORATE FRAUD IN INDIA: A PANORAMIC VIEW OF INDIAN FINANCIAL SCENARIO <i>AKHIL GOYAL</i>	136
25.	INCREASING PRESSURE OF INFLATION ON INDIA'S MACROECONOMIC STABILITY: AN OVERVIEW <i>DR. JAYA PALIWAL</i>	140
26.	A STRATEGIC FRAMEWORK FOR MANAGING SELF HELP GROUPS <i>AASIM MIR</i>	145
27.	A STUDY ON HUMAN RESOURCE PLANNING IN HEALTH CARE ORGANIZATIONS <i>S PRAKASH RAO PONNAGANTI &amp; M.MURUGAN</i>	149
28.	IFRS IN INDIA – ISSUES AND CHALLENGES <i>E.RANGAPPA</i>	152
29.	AWARENESS ABOUT FDI MULTI BRAND RETAIL: WITH SPECIAL REFERENCE TO BHAVNAGAR CITY <i>MALHAR TRIVEDI, KIRAN SOLANKI &amp; RAJESH JADAV</i>	155
30.	A STUDY OF CHANGING FEMALE ROLES AND IT'S IMPACT UPON BUYING BEHAVIOUR OF SELECTED HOUSEHOLD DURABLES IN BARODA CITY <i>DEEPA KESHAV BHATIA</i>	159
	REQUEST FOR FEEDBACK	167

## 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

## FOUNDER PATRON

**LATE SH. RAM BHAJAN AGGARWAL**

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

## CO-ORDINATOR

**DR. SAMBHAV GARG**

Faculty, M. M. Institute of Management, MaharishiMarkandeshwarUniversity, Mullana

## 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. S. L. MAHANDRU**

Principal (Retd.), MaharajaAgrasenCollege, Jagadhri

## EDITOR

**PROF. R. K. SHARMA**

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

## EDITORIAL ADVISORY BOARD

**DR. RAJESH MODI**

Faculty, YanbuIndustrialCollege, Kingdom of Saudi Arabia

**PROF. PARVEEN KUMAR**

Director, M.C.A., Meerut Institute of Engineering & Technology, Meerut, U. P.

**PROF. H. R. SHARMA**

Director, Chhatarpati Shivaji Institute of Technology, Durg, C.G.

**PROF. MANOHAR LAL**

Director & Chairman, School of Information & Computer Sciences, I.G.N.O.U., New Delhi

**PROF. ANIL K. SAINI**

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

**PROF. R. K. CHOUDHARY**

Director, Asia Pacific Institute of Information Technology, Panipat

**DR. ASHWANI KUSH**

Head, Computer Science, UniversityCollege, KurukshetraUniversity, Kurukshetra

**DR. BHARAT BHUSHAN**

Head, Department of Computer Science & Applications, Guru Nanak Khalsa College, Yamunanagar

**DR. VIJAYPAL SINGH DHAKA**

Dean (Academics), Rajasthan Institute of Engineering & Technology, Jaipur

**DR. SAMBHAVNA**

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

**DR. MOHINDER CHAND**

Associate Professor, Kurukshetra University, Kurukshetra

**DR. MOHENDER KUMAR GUPTA**

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

**DR. SAMBHAV GARG**

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

**DR. SHIVAKUMAR DEENE**

Asst. Professor, Dept. of Commerce, School of Business Studies, Central University of Karnataka, Gulbarga

**DR. BHAVET**

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

***ASSOCIATE EDITORS***

**PROF. ABHAY BANSAL**

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

**PROF. NAWAB ALI KHAN**

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

**ASHISH CHOPRA**

Sr. Lecturer, Doon Valley Institute of Engineering & Technology, Karnal

***TECHNICAL ADVISOR***

**AMITA**

Faculty, Government M. S., Mohali

***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; Management 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 address: [infoijrcm@gmail.com](mailto:infoijrcm@gmail.com).

## 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, crystal clear, 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.

**WEBSITES**

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



**INCREASING PRESSURE OF INFLATION ON INDIA'S MACROECONOMIC STABILITY: AN OVERVIEW**

**DR. JAYA PALIWAL**  
**ASST. PROFESSOR**  
**MIT SCHOOL OF MANAGEMENT**  
**KOTHRUD**

**ABSTRACT**

*In this phase of deep global recession, India is one of the economies around the world that are experiencing high pangs of inflation. Indian economy is facing the effects of severe inflation in the form of rising food and energy prices. An uncomfortably high level of inflation is one of the major pressures on India's macroeconomic climate following the global financial crisis. Between the period 2008-09 and 2011-12, inflation in India can be attributed to both microeconomic and macroeconomic factors. The microeconomic factors responsible for high inflation include adverse supply shocks coming from failure of monsoon and high volatility in global crude oil prices. The macroeconomic factors include the demand side mismanagement and failure in coordination between fiscal and monetary policies. This paper attempts to identify the factors including government's monetary and fiscal policies that are responsible for inflation in the country. This paper not only seeks to examine the relationship between inflation and output gap but also identifies possible policy challenges arising from high inflationary trends and their implication on Indian economy.*

**KEYWORDS**

CCPI (Composite Consumer price Index), GDP (Gross Domestic Product), Inflation, supply shock, WPI (Whole Price Index)

**INTRODUCTION**

In India, low and stable inflation remains a key objective of monetary policy along with growth and financial stability. Inflation dynamics in emerging economies like India are, however, relatively more complex than advanced economies in view of recurrent supply shocks and large weight of volatile components such as food items in the various price indices. These supply-side factors have exhibited significant volatility in the recent years and add complexity to inflation dynamics and its forecasting. A stagflation-type environment is emerging in India. GDP growth has slowed sharply to 6.5% in the fiscal year ending March 2012, from 8.5% in the previous year. Inflationary pressures remain persistent despite the Reserve Bank of India (RBI) hiking the repo rate 13 times by a cumulative 375 basis points since March 2010. Although the latest figures show headline inflation to have eased to 6%-7% in July 2012 from the highs of 9%-10% over the last two years, the moderation was mainly on account of the cooling in food and fuel prices. Inflation is still significantly above the RBI's comfort zone of 5%-6% and underlying inflationary pressures remain strong – the RBI has recently warned that inflation risks remain high in the short term owing to suppressed administered fuel prices as well as infrastructural bottlenecks in coal, minerals and power (Reserve Bank of India 2012). Poor monsoon conditions are also likely to have an adverse impact on food prices and, as a consequence, wages. This paper focuses on India's deteriorating growth-inflation trade off and also underlines the macroeconomic imbalances and structural weaknesses of the economy.

**REVIEW OF LITERATURE**

The impact of inflation on growth, output and productivity has been one of the main issues examined in macroeconomics. Theoretical models in the money and growth literature analyze the impact of inflation on growth focusing on the effects of inflation on the steady state equilibrium of capital per capita and output. There are three possible results regarding the impact of inflation on output and growth: i) none; ii) positive; and iii) negative. Recent cross-country studies, found that inflation affecting economic growth negatively, includes Fischer (1993), Barro (1996) and Bruno and Easterly (1998). Fischer (1993) and Barro (1996) found a very small negative impact of inflation on growth. Yet Fischer (1993: 281) concluded –however weak the evidence, one strong conclusion can be drawn: inflation is not good for longer-term growth. Barro (1996) also preferred price stability because he believed it to be good for economic growth. In the Indian context also, there are several studies analysing the nexus between government deficits, money supply and inflation. The findings of these studies generally point to a self-perpetuating process of deficit-induced inflation and inflation-induced deficit, besides the overall indication that government deficits represent an important determinant of inflation (for example, Sarma (1982), Jhadav (1994) and Rangarajan and Mohanty (1998)). The above results have been on the expected lines given that till the complete phasing out of the ad hoc treasury bills in 1997-98, a sizable portion of the government deficit which could not be financed through market subscription was monetized. Based on cross-country and panel regression, several studies have demonstrated in recent years, that there is negative correlation between inflation and growth in the long run due to the influence of the former on reducing investment and productivity growth. There is yet another set of studies (Bruno & Easterly, 1998, Sarel, 1996) which show that harmful effects of inflation are not universal, but appear only over the –threshold level of inflation.

**SIGNIFICANCE OF THE STUDY**

This paper is a moderate attempt to identify that the macroeconomic stability is one of the preconditions for sustained growth and the heavy bouts of inflation not only disturbs the macroeconomic climate of the economy but also impedes its growth. The paper is also significant as it pronounces that a prolonged high inflation even if originating from supply side would give rise to increased inflation expectations and cause general prices to rise. Poorly anchored inflation expectations make long-term financial planning more complex with potential adverse effects on investment and growth. The study also highlights the policy challenges arising due to economic slowdown in India following high inflationary trends and their implications on the macroeconomic climate of the country.

**STATEMENT OF THE PROBLEM**

One of the major pressures on India's macroeconomic climate following the global financial crisis is an uncomfortably high level of inflation. Thus it becomes imperative not only to study all the micro and macro economic factors including supply side problems and challenging demand side management, responsible for inflation in India, but also the policy challenges faced by the Indian economy following the inflationary trends and their implications on the macroeconomic stability of the country.

**OBJECTIVES**

1. To identify the inflationary trends and analyze the factors responsible for impeding the macroeconomic stability of India
2. To examine the relationship between inflation and output gap in India
3. To identify possible policy challenges arising from high inflationary trends and their implication on Indian economy

**HYPOTHESES**

1. Inflation and long term economic growth are negatively related.
2. The sensitivity of inflation to changes in growth rates is larger than that of growth to changes in inflation rates.

**RESEARCH METHODOLOGY**

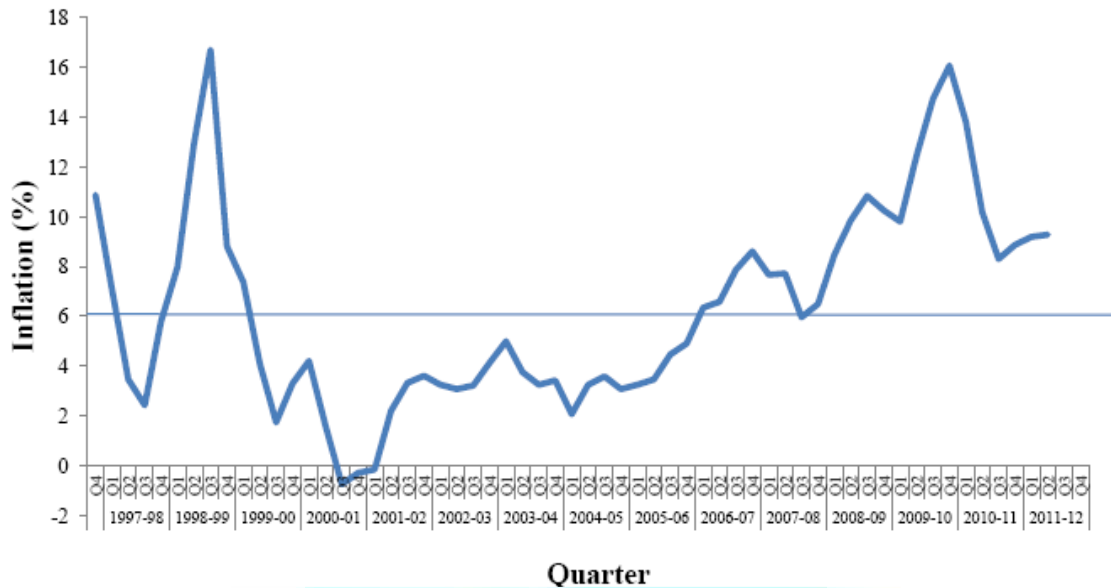
The research is descriptive and is based on secondary data collected from the bulletins of RBI. Even, data from earlier research studies have also been used. Research institutions, trade associations, universities and research scholars do collect data but they normally do not publish it. Such unpublished data have also been used wherever relevant. For an economically diverse country like India, a single measure of inflation does not suffice. Thus, the wholesale price and composite consumer price indices have been used to measure inflation. Besides, graphs have been used to indicate PLR (Prime Lending Rate), deposit rate and to depict the relationship between the output gap and inflation. Changes in Fiscal deficit as a percentage of GDP (Gross Domestic Product) have also been worked out.

**FINDINGS AND RESULTS**

**1. STATE OF INFLATION IN INDIA**

The rise in inflation expectations has been the key macro stability challenge. In the past, price levels as measured by WPI and CPI (industrial workers) usually tracked a similar trend — but over the last three years, a huge gap has opened up. The gap in price levels is not just because of higher weight of food in CPI and higher food inflation. Non-food CPI levels have also persistently been higher than WPI/non-food WPI. The following figure shows that inflation based on the Composite CPI (CCPI) is above 6 per cent since Q1 2006-07, the period after the Indian economy saw significant adverse supply shocks. The shock pertains to food and fuel.

**FIGURE 1: INFLATION IN CCPI (%) FROM Q4 1996-97 TO Q2 2011-12**



Source: Reserve Bank of India, WPS Jan 2012

During the post-crisis phase of 2008-12 while growth generally moderated, inflation rose complicating the task of monetary management. The Reserve Bank began exiting from the crisis-driven accommodative monetary policy stance in October 2009, first by phasing out all the unconventional measures and then raising interest rates. Overall, headline WPI inflation increased to an average of 7.6 per cent during 2008-12 largely reflecting near double digit inflation for most months during January 2010 - November 2011 period. WPI inflation has since moderated to around 7.0 per cent but remains above 5.5 per cent observed during the pre-crisis period. Growth moderation, coupled with signs of thawing of WPI inflation since December 2011, prompted the Reserve Bank to cut the repo rate by 50 basis points to 8.0 per cent in April 2012.

**TABLE 1: MONETARY AND INFLATION INDICATORS (%)**

	Pre-Crisis (2003-08)	Post Crisis (2008-12)	2012-13 (latest)
1	2	3	4
<b>Money &amp; Credit</b>			
1. Growth in Reserve Money (M <sub>0</sub> )	20.4	11.6	7.1
2. Growth in Broad Money (M <sub>3</sub> )	18.6	16.4	13.9
3. Growth in Non-food Bank Credit	26.7	18.3	16.2
4. Credit-GDP Ratio	39.3	50.8	-
5. Money Multiplier (M <sub>3</sub> /M <sub>0</sub> )	4.6	4.9	5.3
<b>Inflation</b>			
1. Wholesale Price Index	5.5	7.6	6.9
1.1 Food Articles	5.2	11.8	10.1
1.2 Fuel Group	7.3	9.0	6.0
1.3 Non-Food Mfg.	5.0	4.8	5.4
2. CPI-Industrial Workers(IW)	5.0	10.1	10.1
2.1 CPI-IW Food	5.5	10.9	10.5
GDP Deflator based Inflation	5.3	7.7	-

Source: Reserve Bank of India, WPS

**2. INFLATION AND INDIA'S MACROECONOMIC CLIMATE**

An uncomfortably high level of inflation is one of the major pressures on India's macroeconomic climate following the global financial crisis. Between the period 2008-09 and 2011-12, inflation in India can be attributed to both microeconomic and macroeconomic factors.

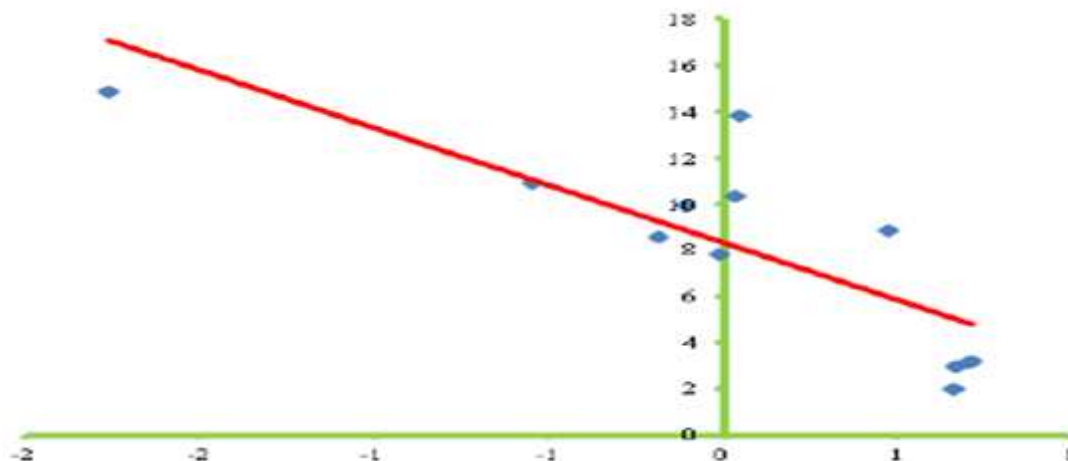
**i. MICROECONOMIC FACTORS**

The microeconomic factors are primarily supply side problems which refer to adverse supply shocks or cost-push inflation. Goyal and Pujari (2004) have found that the Indian economy is subject to large supply shocks. Inflation in India may be high due to negative supply shocks coming from two main sources- the failure of monsoon (kharif season production in 2008-09 and 2009-10) and high volatility in selected commodities in the global market, mostly fuel and basic metals or because of the residual term.



The following figure presents the linear relationship between the output gap and inflation.

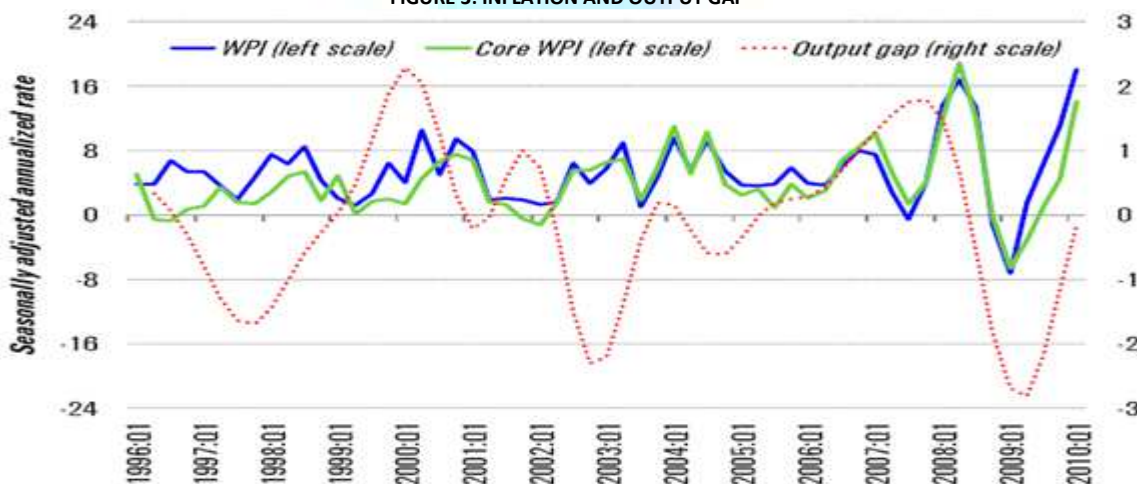
FIGURE 2: SUPPLY SHOCKS



Source: Reserve Bank of India, WPS Jan 2012

After the financial crisis, 2008-09 to 2011-12, the magnitude of the output gap in India was not at its minimum; at the same time, the inflation rate was also high. Available evidence supports that the government missed the macroeconomic objectives of output gap and inflation stabilization.

FIGURE 3: INFLATION AND OUTPUT GAP



Source: IMF Staff calculations

**ii. MACROECONOMIC FACTORS**

The macroeconomic factors relate to the effectiveness of demand management through fiscal and monetary policies. But in Indian context, Demand-side management had been a challenge during this period, not only because of the adverse spill over effect of global economic uncertainties on the Indian economy but also because of the political cycle (the general elections were held in 2009) that led to unsustainable fiscal expansion.

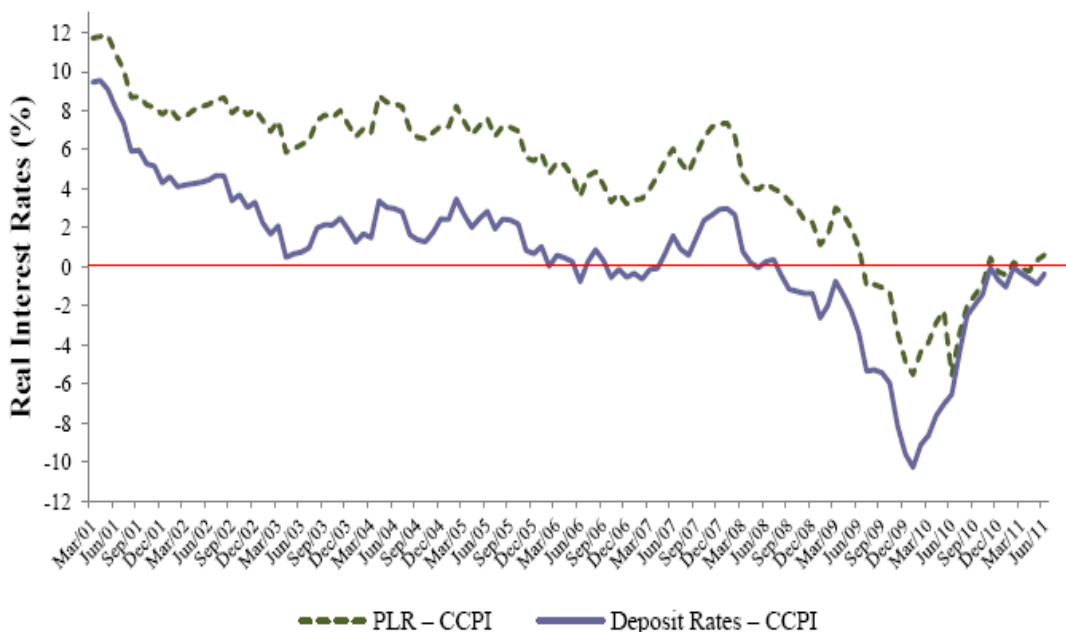
In 2008-09, the need to stimulate the economy following the global financial crisis dictated the stance on fiscal and monetary policy. Although there was coordination of monetary and fiscal policies during this phase, the co-ordination weakened when the government sought to exit the fiscal stimulus. After 2008-09, fiscal consolidation was achieved at the state and central government levels in 2010-11 but both the fiscal and monetary stances were loose during the financial years 2008-09 and 2011-12, and there was little or no indication that these would be tightened. Policy rates were raised several times in tiny doses that kept the real interest rate down; the interest rate was negative in 2010-11. In 2011-12, though the real interest rate finally reached a positive level in a few months, the slippage in fiscal consolidation proves that the fiscal-monetary policy co-ordination was a failure.

**iii. FAILURE IN CO-ORDINATION BETWEEN FISCAL AND MONETARY POLICIES**

**2008-09**

In the year 2008-09, the global financial crisis created turmoil in the Indian economy and worsened the slowdown in the domestic economy. As a result, the government introduced expansionary monetary and fiscal policies.

FIGURE 4: REAL INTEREST RATES – CCPI

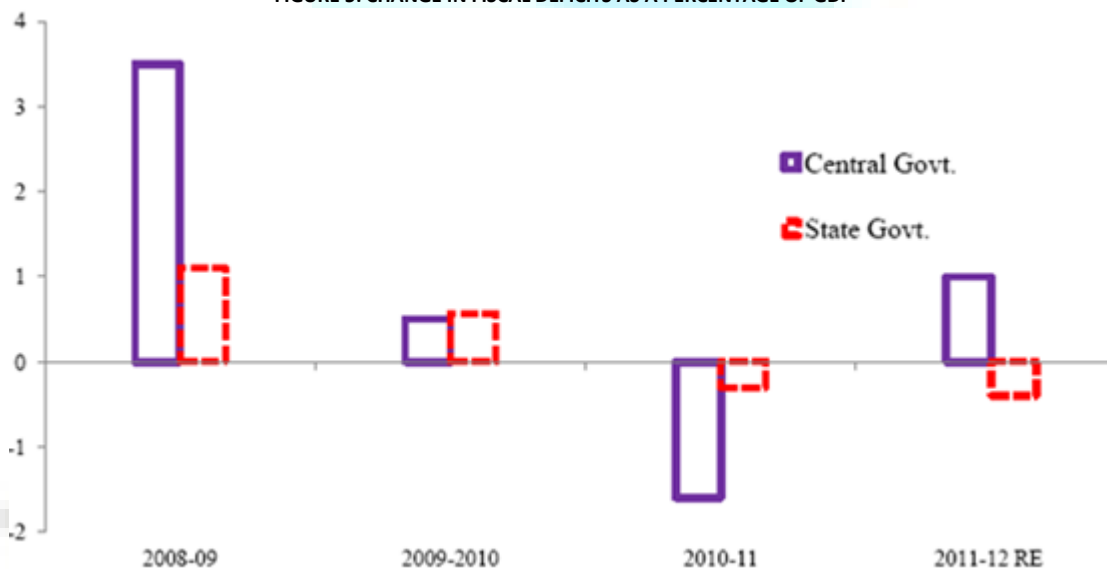


**Note:** 1. PLR – Prime Lending Rates for five major banks.  
 2. Deposit Rates – Rates on deposits of more than one year maturity

Source: Reserve Bank of India, WPS Jan 2012

On the monetary side, the real prime lending rate was brought down by 300 basis points (see figure 4), while on the fiscal side, the fiscal deficit of the central government and state governments was raised by 3.5 per cent and 1.1 per cent of the GDP respectively (see Figure 5). The central government’s fiscal stimulus was stronger partly because the slowdown occurred just before general elections to Parliament. Since a monetary policy makes its effects felt with a lag, the monetary policy of 2008-09 would have had an impact on the growth of the following year. As a result, 2008-09 did not witness a problem of overheating. However, in Q3 2008-09, there was an adverse supply shock because of the failure of food grains production in the kharif season, which caused inflationary pressure.

FIGURE 5: CHANGE IN FISCAL DEFICITS AS A PERCENTAGE OF GDP



Source: Macroeconomic and Monetary Developments (July 2011, RBI)

**2009-10**

Inflationary pressures were much more visible in 2009-10 when the economy began to overheat because of the impact of monetary policies and the extended second round of fiscal stimulus. The output gaps for Q2 and Q4 2009-10 touched 1.7 per cent and 1.2 per cent respectively. This was worsened by an adverse supply shock arising from a second successive year of kharif crop failure in the third quarter of the year. The crop failure was more severe than that of 2008-09.

**2010-11**

In 2010-11, fiscal tightening happened at both the central and the state level, but overheating continued because of the impact of monetary policy – real prime lending rates had been negative from June 2009 to September 2010 after which they began moving closer to zero.

**2011-12**

In the first half of the 2011-12, real prime lending rates reached a positive level, but the central government’s failed attempt at fiscal consolidation for a second year has caused overheating of the economy.

**POLICY CHALLENGES AND RECOMMENDATIONS**

Following are the policy challenges for the Indian economy to regain the growth momentum.

- Though supply shocks are temporary in nature, monetary tightening is required.

- The major challenge is to dampen inflation and focus on removing supply side bottlenecks and adopting policies that would improve productivity.
- Indian economy that is not fully adjusted to a given rate of inflation may suffer from relative price distortions caused by inflation. Policy makers need to make a provision for this as well.
- Though the output gap is an unknown variable, stabilisation of the output gap may help lower inflation and hence, should be the major macroeconomic policy objective.
- There is an urgent need to coordinate the fiscal and monetary policies. Rule-based fiscal policy becomes absolutely important to afford the space for monetary policy to contribute to the improved macroeconomic performance. Fiscal prudence is also required to alleviate the resource constraints by boosting domestic saving crucial for raising domestic investment rate.
- Monetary policy needs to focus on containing inflation and anchoring inflation expectations. This is essential to usher in a low interest rate environment which is crucial for raising the overall investment.
- The major policy challenges arise from higher money growth on account of persistent fiscal constraint, revival in private credit demand and surges in capital flows, on the one hand, and higher policy interest rate chasing higher inflation on the other.
- Nominal interest rates are often controlled, and hence real interest rates may become negative and volatile, discouraging savings. This may pose a great challenge for the policy makers.
- Depreciation of exchange rates may lag behind inflation, resulting in variability in real appreciations and exchange rates.
- Real tax collections do not keep up with inflation, because collections are based on nominal incomes of an earlier year (the Tanzi effect) and public utility prices are not raised in line with inflation. For both reasons, the fiscal problem is intensified by inflation, and public savings may be reduced. This may adversely affect public investment and thus a provision is required to be made for it.
- Policy makers also need to see that the high inflation is unstable. There is uncertainty about future rates of inflation, which reduces the efficiency of investment and discourages potential investors.

## CONCLUSION

India's current economic slowdown reflects both cyclical and structural factors. A slowdown in the investment cycle, combined with supply constraints and a subdued external environment has caused growth to slow to below trend. The post-crisis policy environment suggests that the supply shock was handled inappropriately. Fiscal and monetary stimuli were not designed to achieve macroeconomic stability. While fiscal tightening was hindered by the impending elections, there was also a delay in tightening the monetary policy. In view of long and variable transmission lags, it is important for monetary policy to respond to expected inflation and output dynamics. Reliable forecasts of growth and inflation are, therefore, important for effective monetary management.

## REFERENCES

3. Ashra, S., Chattopadhyay, S., and Chaudhuri, K. (2004), "Deficit, Money and Price – the Indian Experience", *Journal of Policy Modeling*, 26, 289-99.
4. Ball, Laurence and Sandeep Mazumder (2011), "Inflation Dynamics and the Great Recession", Working Paper 17044, National Bureau of Economic Research.
5. Barro, R. J. (1996). "Inflation and Economic Growth", NBER Working Paper 5326. Cambridge
6. Biswas, Dipankar, Sanjay Singh and Arti Sinha (2010), "Forecasting Inflation and IIP Growth: Bayesian Vector Autoregressive Model", *Occasional Papers*, Vol. 31 (2), Monsoon, Reserve Bank of India, pp. 31-48.
7. Bruno, M and W Easterly (1998): "Inflation Crisis and Long Run Growth", *Journal of Monetary Economics*, Vol 41.
8. Calvo, Guillermo and Vegh, Carlos (1999), "Inflation Stabilisation and BOP Crisis in Developing Countries," in John Taylor and Michael Woodford (Ed)., *Handbook of Macroeconomics*, Volume C, North Holland.
9. Catao Luis and Marco Terrones (2001), "Fiscal Deficits and Inflation: A New Look at the Emerging Market Evidence", IMF Working Paper WP/01/74.
10. Cochrane, John H. (2009), "Fiscal Stimulus, Fiscal Inflation, or Fiscal Fallacies?", University of Chicago Booth School of Business, February 27.
11. Davig, Troy and Erie M. Leeper (2009), "Monetary-Fiscal Policy Interactions and Fiscal Stimulus", NBER Working Paper Series 15133, July.
12. Fischer, S (1993): "The Role of Macro-economic Factors in Growth", *Journal of Monetary Economics*, Vol 32(3).
13. Goyal, A. and Pujari, A.K. 2004. "Identifying long run supply curve in India". Available at SSRN: <http://ssrn.com/abstract=609323> (accessed 9 April 2012).
14. IMF (2009), "The State of Public Finances Cross-Country Fiscal Monitor", IMF Staff Position Note (SPN/09/25), November.
15. Jadhav, N. (1994). *Monetary Economics for India*. Delhi: Macmillan India Limited.
16. Kapur M (2012), "Inflation Forecasting: Issues and Challenges in India", RBI working paper series.
17. Khundrakpam J.K. and Pattanaik S (2010), "Global Crisis, Fiscal Response and Medium-term Risks to Inflation in India", Reserve Bank of India Occasional Papers, Vol. 31, No.2, Monsoon 2010.
18. Khundrakpam J.K. and Rajan Goyal (2009), "Is the Government Deficit in India Still Relevant for Stabilization?," RBI Occasional Papers, Vol.29 (3), Winter 2008.
19. Rangarajan, C., and Mohanty M.S. (1998), "Fiscal Deficit, External Balance and Monetary Growth", Reserve Bank of India Occasional Papers, 18, 635-653.
20. Reserve Bank of India (2006), *Handbook of Monetary Statistics of India*.
21. Reserve Bank of India (2009), *Handbook of Statistics of the Indian economy, 2008-09*.
22. Sarel, M. (1996). "Nonlinear effects of inflation on economic growth", IMF Working Staff Papers, 43(1), 199–215.
23. Sargent, Thomas J. and Neil Wallace (1981), "Some Unpleasant Monetarist Arithmetic", *Federal Reserve Bank of Minneapolis Quarterly Review*, Vol. 5(3), 1-17.
24. Sarma, Y.S.R. (1982), "Government Deficits, Money Supply and Inflation in India", Reserve Bank of India Occasional Papers. Mumbai, India.
25. Singh K (2012), "Assessment of Inflation Modelling in India" Working Paper, Indian Council for Research on International Economic Relations.
26. Vinals, Jose and Paolo Mauro (2010), "A Strategy for Renormalising Fiscal and Monetary Policies in Advanced Economies", KDI/IMF Workshop, Seoul Korea, February 25, 2010.
27. Woodford, Michael (2001), "Fiscal Requirements for Price Stability", National Bureau of Economic Research, Working Paper, 8072.

## **REQUEST FOR FEEDBACK**

**Dear Readers**

At the very outset, International Journal of Research in Computer Application 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-mail [infoijrcm@gmail.com](mailto:infoijrcm@gmail.com) 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](mailto: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*

