

## Knowledge Initiatives

Several initiatives have been taken over the last few years with a view to develop the skills of market intermediaries, educate the investors and promote high quality research in the securities market.

### Quality Intermediation

In some of the developed and developing markets, there is a system of testing and certification for persons joining market intermediaries. This ensures that these personnel have a minimum required knowledge about the market and the existing regulations. The benefits of this system are wide spread. While the intermediaries are assured of qualified staff, the employees get an opportunity to improve their career prospects. This in turn instills confidence in the investors to be associated with the securities market. The formal educational or training programme on securities markets is not adequate to cover their areas of operations. As a result, a need for certification was being increasingly felt by the regulators as well as by the securities industry.

### NSE's Certification in Financial Markets [NCFM]

National Stock Exchange's Certification in Financial Markets (NCFM), a testing and certification mechanism, has become extremely popular and is sought after by the candidates as well as employers due to its unique on-line testing and certification programme. It offers all the certifications mandated by SEBI, NSDL, AMFI, FIMMDA and NSE itself. The entire process from generation of question paper, testing, assessing, scores reporting and certifying is fully automated and there is absolutely no human intervention. It allows tremendous flexibility in terms of testing centres, dates and timing by providing easy accessibility and convenience to candidates as they can be tested at any time and from any location. The purpose is to test the practical knowledge and skills that are required to operate in the financial markets, in a very secure and unbiased manner.

NCFM offers a comprehensive range of modules covering many different areas in finance. NCFM currently tests expertise in the modules mentioned below in Table 9-1.

During the year 2009-10, NCFM introduced the AMFI – Mutual (Advisors) Module Test and Financial Markets Module Test in Gujarati and Hindi languages. Various new modules were also launched. The 'Currency Derivatives: A Beginner's Module' was launched in September 2009 with a view to improve awareness about the 'Currency Derivatives' product. The course content is structured to help a beginner understand what the product is, how it is traded and what uses it can be put to. On November 19, 2009 the module on 'Equity Derivatives: A Beginner's Module': was launched to equip candidates with basic but essential information and concepts regarding the equity derivatives markets. On January 11, 2009 a module on 'Interest Rate Derivatives: A Beginner's Module' was introduced. This module aims at creating a better understanding of the concepts underlying the money market and giving insights into the motives of and operations related to the trading of interest rate derivatives. The Investment Analysis and Portfolio Management Module was launched on March 19, 2010 which aims at providing an overview of the various investment instruments in the financial markets with details on evaluating investment opportunities to satisfy risk-return objectives of investors.

Table 9-1: NCFM Module Test Details

Sr. No.	Name of Module	Fees (Rs.)	Test Duration (in minutes)	No. of Questions	Maximum Marks	Pass Marks (%)	Certificate Validity (in years)
1	Financial Markets: A Beginner's Module	1500	120	60	100	50	5
2	Mutual Funds : A Beginner's Module	1500	120	60	100	50	5
3	Currency Derivatives: A Beginner's Module	1500	120	60	100	50	5
4	Equity Derivatives: A Beginner's Module	1500	120	60	100	50	5
5	Interest Rate Derivatives: A Beginner's Module	1500	120	60	100	50	5
6	Securities Market (Basic) Module	1500	105	60	100	60	5
7	Capital Market (Dealers) Module	1500	105	60	100	50	5
8	Derivatives Market (Dealers) Module	1500	120	60	100	60	3
9	FIMMDA-NSE Debt Market (Basic) Module	1500	120	60	100	60	5
10	Investment Analysis and Portfolio Management	1500	120	60	100	60	5
11	NISM-Series-I: Currency Derivatives Certification Examination	1000	120	60	100	60	3
12	NISM-Series-II-A: Registrars to an Issue and Share Transfer Agents – Corporate Certification Examination	1000	120	100	100	50	3
13	NISM-Series-II-B: Registrars to an Issue and Share Transfer Agents – Mutual Fund Certification Examination	1000	120	100	100	50	3
14	NSDL–Depository Operations Module	1500	75	60	100	60 #	5
15	Commodities Market Module	1800	120	60	100	50	3
16	AMFI-Mutual Fund (Basic) Module	1000	90	62	100	50	No limit
17	AMFI-Mutual Fund (Advisors) Module	1000	120	72	100	50	5
18	Surveillance in Stock Exchanges Module	1500	120	50	100	60	5
19	Corporate Governance Module	1500	90	100	100	60	5
20	Compliance Officers (Brokers) Module	1500	120	60	100	60	5
21	Compliance Officers (Corporates) Module	1500	120	60	100	60	5
22	Information Security Auditors Module (Part-1)	2250	120	90	100	60	2
	Information Security Auditors Module (Part-2)	2250	120	90	100	60	
23	FPSB India Exam 1 to 4	2000 per exam	120	75	140	60	NA
24	Options Trading Strategies Module	1500	120	60	100	60	5

Candidates have the option to take the Capital Market (Dealers) Module (CMDM) test in English, Gujarati or Hindi language. The workbook for the module is presently available in ENGLISH.

Candidates have the option to take the Derivatives Market (Dealers) Module (DMDM) test in English, Gujarati or Hindi language. The workbook for the module is also available in ENGLISH, GUJARATI and HINDI languages.

Candidates securing 80% or more marks in NSDL-Depository Operations Module ONLY will be certified as 'Trainers'.

Candidates have the option to take the AMFI (Adv) test in English, Gujarati or Hindi languages. The workbook for the module, which is available for a fee at AMFI, remains in ENGLISH.

Modules of Financial Planning Standards Board India (Certified Financial Planner Certification) i.e. (i) Risk Analysis & Insurance Planning (ii) Retirement Planning & Employee Benefits (iii) Investment Planning and (iv) Tax Planning & Estate Planning.

The curriculum for each of the module (except FPSB India Exam 1 to 4) is available on our website: [www.nseindia.com](http://www.nseindia.com) > NCFM > Curriculum & Study Material.



## NSE Certified Market Professional (NCMP)

NSE Certified Market Professional (NCMP) certificate is issued to those candidates who have cleared NCFM modules as prescribed by the exchange. This certification was launched on August 17, 2009 as per the below eligibility criteria. This hierarchy of certifications is aimed at enabling the candidates to better demonstrate their domain knowledge relating to financial markets. Thus, a candidate clearing 3 – 4 modules would be given “NCMP Level 1” certificate and so on. Currently there are 13 modules qualifying for the NCMP certification which are available on the NSE website.

- **NCMP Level 1** : 3 – 4 modules
- **NCMP Level 2** : 5 – 6 modules
- **NCMP Level 3** : 7 – 8 modules
- **NCMP Level 4** : 9 or more modules

## CBSE – NSE joint certification in Financial Markets

CBSE and NSE introduced a joint certification in Financial Markets for Std. XI and XII. The course, titled “Financial Markets Management” had been introduced by CBSE for academic year 2007 - 2008. The course comprises of various subjects, such as Languages, Economics, Business Studies, Accounting for Business etc. Besides these, two financial market related subjects, “Introduction to Financial Markets – I” and “Introduction to Financial Markets – II” are taught in Std. XI and XII respectively. Students opting for the course are required to take the NCFM on-line tests in “Financial Markets : A Beginners Module” in Std. XI and both “Capital Markets (Dealers) Module and Derivatives Markets (Dealers) Module”, in Std. XII. The course is in its third year and over 1500 students are enrolled for the course. This is the first such attempt to introduce financial literacy in a formal way in schools.

## Research Initiatives

Knowledge management is very important in today’s competitive world. It acts as a tool which helps to acquire the cutting edge in a globalised financial market. The regulators and SROs have been actively promoting academicians and market participants to carry out research about various topics in the various segments of securities market. During the year 2009 nine research papers were completed under the NSE Research Initiative. While the completed papers are available on the NSE website, we present here non-technical abstracts of these papers

### 1. ***Dynamic Interaction among Mutual Fund Flows, Stock Market Return and Volatility***

*BY M.Thenmozhi, Professor, Department of Management Studies, IIT Madras and Manish Kumar*

*Research Scholar, Department of Management Studies, IIT Madras*

This study examines the dynamic interaction between mutual fund flows and security returns and between mutual fund flows and volatility. The results based on the contemporaneous relationship using daily data suggest that a positive relationship exist between stock market returns and mutual fund flows measured as stock purchases and sales. This positive concurrent relationship continues to exist even after controlling for volume. The analysis of causal relationship between mutual fund flows and market returns show that mutual fund outflows (sales) are significantly affected by return in the equity market. However, the latter is not significantly influenced by variation in these flows which suggests negative feedback trading behavior in the Indian market. The results show that a strong positive relationship exists between stock market volatility and mutual fund flows measured as stock purchases and sales. This positive concurrent relationship continues to exist even after controlling for volume. The analysis on the direction of relationship between volatility and mutual fund flows suggests that market volatility is positively related to lag flow, and that shock inflow has a positive impact on market volatility. The results provide evidence that the relationship is stable even after including these exogenous variables such as volume and market fundamental variables such exchange rates, dividend and short term interest rates in the model. Increase in the aggregate inflows and outflows are associated with more volatile market.

## 2. **Correlation Dynamics in Equity Markets: Evidence from India**

By S. Raja Sethu Durai and Saumitra N Bhaduri, Madras School of Economics

Equity market integration has wider notion in finance literature. Markets are said to be highly integrated only if irrespective of the market, assets with similar risk have identical expected return. Albeit this, understanding the correlation structure and dynamics of the equity markets of the world is the first step in getting the bigger picture of market integration. Without a good correlation structure, other aspects of market integration are not theoretically reflective. Keeping that in mind this study analyzes the correlation structure of the Indian equity markets with that of world markets. This paper uses daily data from 1st July 1997 to 18th August 2006 of the following 11 world indices: NASDAQ Composite (USA), S&P 500 (USA), FTSE 100 (UK) and DAX 30 (Germany) are classified as developed markets, whereas KLSE Composite (Malaysia), Jakarta Composite (Indonesia), Straits Times (Singapore), Seoul Composite (South Korea), Nikkei (Japan), Taiwan Weighted Index (Taiwan) and the S&P CNX Nifty (India) are considered as Asian markets.

The following three generic correlation measures are derived. *All markets* considered the entire 11 markets specified, *Asian markets* considered only the 7 markets classified, *developed markets* considered only the 4 markets classified. Further to get deeper insight on the individual correlation structure between S&P CNX Nifty with world markets two other measures are derived. *S&P CNX Nifty-Asian* considered S&P CNX Nifty with other 6 Asian markets and *S&P CNX Nifty-Developed* considered S&P CNX Nifty with the 4 developed markets. Estimates of correlations indicate poor correlation with an average correlation being below 30 percent. The highest correlation is seen for 4 developing countries specified with around 60 percent. The individual correlation structures between S&P CNX Nifty with other markets are fairly lower than other estimates.

Tests to see if there have been any potential regime shift in the correlation dynamics and to categorize the phase of integration across these markets, for *S&P CNX Nifty-Asian* and *S&P CNX Nifty-Developed* indices show that there is a significant regime shift in the year 2000 and there is a considerable increase in integration in the second regime. This indicates that the S&P CNX Nifty index is moving towards a better integration with other world markets but not at a very noteworthy phase. The high volatility in recent years faced by the Indian equity markets can be attributed to this low level of correlation and market integration with other world markets as it provides space for the global funds to diversify risk.

## 3. **Price Discovery and Arbitrage Efficiency of Indian Equity Futures and Cash Markets**

By Kapil Gupta and Dr. Balwinder Singh

This study investigates the price discovery efficiency and validity of Law of One Price in the Indian equity market by using tick-by-tick data available of NSE. The study finds that strong and stable long-run relationship exists between Indian equity futures and cash markets. However, during short-run significant deviations from equilibrium relationship have been observed. Empirical findings in the study suggest that price discovery takes place in both markets, whereas, the Indian equity futures market dominates the information transmission process and the duration of lead-lag between two markets has been found to be varying in the range of five to fifty five minutes.

The study further finds that days to expiry do not play significant role in the price discovery mechanism of Nifty futures contracts. However, mispricings for individual stock futures contracts are found to be significantly negatively associated with days to expiry. This implies that near to the expiration date more arbitrage opportunities are available and these findings support the early liquidation option. Regulatory restriction on the participation of institutional traders may be a significant factor leading to negative association between mispricings of futures contracts and days to expiry. Therefore, there is a tendency for institutional traders to either unwind or rollover their positions before maturity date, which not only makes money available to them but also enables them to take new positions.

## 4. **Stock Market Seasonality: A Study of the Indian Stock Market**

By Ash Narayan Sah, Assistant Professor, University of Petroleum & Energy Studies

Seasonality refers to regular and repetitive fluctuation in a time series which occurs periodically over a span of less than a year. The existence of seasonality in stock returns however violates an important hypothesis in finance, that is, efficient



market hypothesis (EMH). According to this hypothesis, security prices reflect fully all the information that is available in the market. Since all the information is already incorporated in prices, a trader is not able to make any excess returns.

This study examines the seasonality of stock market in India. It considers the S&P CNX Nifty as the representative of stock market in India and tests whether seasonality is present in Nifty and Nifty Junior returns using daily and monthly data sets. The study finds that daily and monthly seasonality is present in Nifty and Nifty Junior returns. The analysis of stock market seasonality using daily data, reveals Friday Effect in Nifty returns while Nifty Junior returns were statistically significant on Friday, Monday and Wednesday. In case of monthly analysis of returns, the study finds that Nifty returns are statistically significant in July, September, December and January. In case of Nifty Junior, June and December months are statistically significant. The results establish that the Indian stock market is not efficient and investors can improve their returns by timing their investment.

#### **5. *The Dynamic Relationship between Stock Returns, Trading Volume and Volatility: Evidence from Indian Stock Market***

*By Brajesh Kumar and Priyanka Singh*

This paper empirically examines the relationship between returns, volatility and trading volume for 50 Indian stocks. Three measures of trading volume namely number of transactions; number of shares traded and value of shares traded are used. The contemporaneous correlation between returns and trading volume and asymmetric relation between level of trading volume and returns is examined. The dynamic relation as marked by lead-lag relationship is also investigated between the returns and volume. In case of volatility, the contemporaneous and asymmetric relation is examined between unconditional volatility and volume. The evidence for positive contemporaneous relation between returns and volume as well as conditional and unconditional volatility and volume is found. The results indicate that the level of volume is dependent on the direction of price change only in case of 60% of the stocks in the sample. Further empirical tests indicate that for some stocks returns cause trading volume, which is easily conceivable in the context of an emerging market where development of the market causes sequential information dissemination. It is also found that in Indian stock market, the number of transactions may be a better proxy of information than the number of shares traded and the value of shares traded.

#### **6. *Optimal investment horizons for S&P CNX Nifty and its components***

*By Dr. Pradeep Raje, Adfactors PR Pvt. Ltd.*

The distributions of the first passage time for the S&P CNX Nifty and its 50 constituent stocks are examined. Numerical analysis shows the 'optimal' investment horizon at 5% return level is about 15 days for the index and is most frequently distributed at seven days (range: 5 to 15 days) for the 50 constituent stocks. This suggests a complex dynamics between the index and its constituents in terms of feedback and feed-forward loops. The paper also examines the distribution of first passage times for six world indices, the Dow Jones Industrial, Hang Seng, FTSE, SSEC, Kospi and the Nikkei. These range between 13 days (for the Kospi) to 47 days for the FTSE. Two distinct regimes, for both positive and negative returns) are observed in the evolution of the optimal investment horizon over different return levels.

#### **7. *Global Stock Futures: A Diagnostic Analysis Of A Selected Emerging And Developed Markets With Special Reference To India***

*By Dr. Debasis Bagch, Professor of Finance, IILM Graduate School of Management*

This paper investigates the nature of dynamic relationship that exists amongst selected futures indexes in American, European and Asian continents. A total of nine futures indexes are selected for investigation. The correlations among the future indexes on regional account are found to be strongly positive which is suggestive that the indexes are affected more on regional news rather on world news. The futures indexes are found to be non-stationary and American and Asian futures markets are not cointegrated, while European futures markets are found to be cointegrated. It implies that diversification and risk reduction is possible in American and Asian futures markets, but not likely in European futures markets on individual regional basis. However, the futures markets are cointegrated on inter-region basis, meaning thereby that long-term dynamic equilibrium relationship exists amongst the inter-region futures indexes, for

instance, American and European, American and Asian, Asian and European futures markets. The results suggest risk diversification is less possible between regions, yet arbitrage opportunity may exist due to short-term deviation from the long-term equilibrium.

Further tests indicate that the longrun equilibrium is affected by short-run deviations, but such deviations are small that quickly revert to equilibrium condition. Also, emerging market in American continent, i.e., Mexico has a reflective effect on US Futures market while in Europe, the FTSE 100 Futures index has a predominating character. For the European futures, the France and UK futures indexes are dynamically deviating in short-run period as the shock is found to transmit in a powerful manner over the time horizon, while it is found to be low for S&P MIB (Italian futures index), revealing short-term deviations are less in this case. In Asian region, Kospi 200 Futures is found to respond comparatively higher with respect to Nifty Futures and MSCI SGX Futures. The results of the study are useful for the global fund managers in their effort to diversify risk, as cointegrated markets give little opportunity to minimize the risk through diversifications, while the non-cointegrated markets do. Nevertheless, since the cointegration is also useful to analyze arbitrage opportunity, the fund managers can utilize such opportunities available in the futures markets to their advantages by understanding the nature and extent of short-run deviations from equilibrium. The results are also important for the policy makers as the desired impact of introduction of regulatory or deregulatory measures could be affected due to underlying linkages, whose cumulative effect may remain hidden and which could jeopardize the policy framework. The policy makers may incorporate these linkages into their policy decisions model to make their implementation process successful.

#### 8. *Examining Associations between S&P CNX Nifty and selected Asian & US Stock Markets*

*By Dr Saif Siddiqui, Assistant Professor-Finance, Centre for Management Studies, Jamia Millia Islamia*

In a dynamic economic environment, knowledge of the international stock market structure is important for both investors and portfolio managers. Various theories in finance, suggest that individual and institutional investors should hold a well-diversified portfolio to reduce risk. From the perspective of an international investor who is willing to make portfolio investments in different stock markets, it is important to know if diversification can give some gain or not. International diversification is sought due to differences in the levels of economic growth and timing of business cycles among various countries. But, if the stock markets of different countries move together, then investing in different national stock markets would not generate any long-term gain to portfolio diversification.

This paper examines the interdependence between different Asian markets, including S&P CNX Nifty and its relation with other markets. Stock Indices under study are BSE 30 (BSE), S&P CNX Nifty (NIFTY), Shanghai Composite (SC), Hang Seng (HS), Jakarta Composite (JC), KLSE Composite (KLSE), Nikkei 225 (NIKKEI), Straits Times (ST), Seoul Composite (SEOUL), Taiwan Weighted (TAIWAN), TA-100 (TA), DJIA (DJIA) and S&P 500 (S&P). The study is based on secondary data, which covers the period using daily closing figure from 01/06/1999 to 01/06/2009. For better understanding and to judge time varying results the time period is divided into two equal parts. Period-I starts from 01/06/2009 to 02/06/2004 and Period –II is ranged between 01/06/2004 to 01/06/1999

Interdependency among global stock markets is studied primarily through correlation of returns, Co-integration and the Granger Causality. It is observed that a significant change took place in results derived from the analysis of data of Period- I and II. The results show that volatility has gone down in Period-II. Change in correlation between the indices is also widespread in Period-II. It can further be derived that the interdependencies among the indices understudy has increased in Period-II. No very clear direction of relationships exists in the sense of Granger Causality indicating the fact that influence of few markets, especially that of the US, has eroded over a period of time. Both the US markets are unable to cause impacts in various Asian markets.

It can be concluded that stock market integration and causation between different markets and indices have changed. These developments in the international stock markets will pose great challenges before the investors to look for the markets with low correlation (study suggest that correlation of returns has increased in most of the cases in Period –II) with that of the domestic markets so as to exploit the gains of diversification as well as before policy makers because these growing interdependencies will infuse crisis in the domestic economy from other economies.



## 9. *Does the stock market overreact? : Empirical evidence of contrarian returns from Indian Markets*

By Dr. Mayank Joshipura, Associate Professor, Finance, S. P. Jain Institute of Management & Research

The study documents the presence of contrarian returns in Indian markets. The study is based on the monthly return data of listed companies on NSE for the period of 1995 to 2008. The results show an evidence of momentum profits for shorter periods of six months and one year, whereas contrarian returns are evident in a longer test period of three years. It is also found that the presence of momentum and contrarian returns cannot be associated with risk adjustments only. The study provides enough evidence against weak form of market efficiency-which claims that superior returns cannot be produced on the basis of investment strategies based on historical data and if any such returns are earned it may be a mere compensation for the higher risk taken. The study confirms the behavioral explanation of overreaction due to activity of momentum traders followed by reversal in long run. The results of the study find evidence in favour of overreaction hypothesis and short term momentum followed by reversal. The study provides evidence of overreaction led momentum profits in short run followed by contrarian profits in long run.

### Data Dissemination

NSE compiles, maintains and disseminates high quality data to market participants, researchers and policy-makers. This acts as a valuable input for formulating strategy, doing research and making policies. NSE has been maintaining the historical database of all the details of every order placed on its trading system and every trade executed. This data is disseminated through monthly CD/DVDs releases which are priced at a nominal rate. The following information is available on CDs/DVDs:

- Summary information about each security's high price, low price, closing price and last traded price, turnover (value and volume), and number of trades for each trading day.
- Database of stock market indices computed by IISL. Both intra day and end of day information is available for Nifty, CNX Midcap and Defty.
- Snapshots of limit order book of NSE at different points during a day.
- Database of circulars issued during the month. Every development in the market in terms of market design is documented in these circulars.

### Investor Awareness and Education

NSE has been carrying out investor awareness and education seminars on a regular basis in various centres across the country. Informative brochures and booklets have been prepared for educating investors which are distributed free of cost at the seminars. 900 Investor Awareness Programmes were conducted during the year 2009.

### 'Visit to NSE' Program

It has been the endeavor of NSE to spread knowledge about financial markets as widely as possible. As part of this endeavor, NSE has been organizing the 'Visit to NSE' Program, under which groups of students visit NSE to attend a 2-hour session. The sessions are based on different topics where the students learn about stock exchange structure, its operations, products traded on it and so on. They also learn about NSE's NCFM certification which not only expands their knowledge base, but also improves their career prospects. This program is conducted in the Mumbai office as well as the regional offices located at Delhi, Kolkata and Chennai. More than 45 colleges have visited the Exchange since August 2009.

## Investor awareness efforts for Currency Derivatives

The Exchange has been in the forefront of the securities market reforms including creation of a vibrant derivatives market. Over the years, NSE has taken many new initiatives to strengthen the securities industry. With active participation from all market participants, NSE has launched several new products in the last couple of months like Mini Nifty, Long Dated Options, Cross Margining, Currency and Interest Rate Futures, Mutual Fund Service System to name a few.

Focused efforts have been made to enhance the awareness and understanding of the new products introduced by NSE for its members. The efforts have been well received and have helped in driving volumes in these product categories. The daily average turnover in Currency Futures has increased from Rs 262 Crs in Sep'08 to Rs 11981 Crs in Feb'10.

To spread awareness on the new products introduced in the recent past, such as Currency Derivatives/ Interest Rate Derivatives more than 755 interactive sessions have been organized in association with NSE members, trade associations and professional groups at in more than 100 locations, most of which are tier II towns and cities.

Some of the highlights of the Awareness program conducted are

- Seminars and workshops with more than 100 NSE members and their network across regions.
- Seminars on Currency and Interest Rate Futures with more than 42 trade promotion councils, export promotion councils, Chambers of Commerce and professional bodies.
- Programs conducted at more than 100 locations across tier I and tier II locations.
- Faculties include academicians, experts from Banking industry, Forex market and senior officials from top AMCs and Exchange officials.



