Investor sentiment antecedents

A structural equation modeling approach in an emerging market context

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Abstract

Purpose – The determinants of investor sentiment based on stock market proxies are found in numbers in empirical studies. However, investor sentiment antecedents developed from primary survey measures by constructing an investor sentiment index (ISI) are not done till date. The purpose of this paper is to fill this research gap by first developing an ISI for the Indian retail investors and then examining the investor-specific, stock market-specific, macroeconomic and policy-specific factors’ individual impact on the investor sentiment.

Design/methodology/approach – First, the authors develop the ISI by using the mean scores of six statements as formulated based on popular direct investor sentiment surveys undertaken throughout the world. Then, the authors employ the structural equation modeling approach on the responses of 576 respondents on 40 statements (representing the index and four study hypotheses) collected in 2016 across the country.

Findings – The results show that investor- and stock market-specific factors are the major antecedents of investor sentiment for these investors. However, interestingly macroeconomic fundamentals and policy-specific factors have no role to play in driving their sentiment to invest in the stock market.

Practical implications – The major implication of the results is that the Indian retail investors are showing a mixed approach of Bayesian and behavioral finance decision making. So, these implications can guide the investment consultants, regulators, other stakeholders in markets and overwhelmingly the retail investors to introspect their investment decision making across time horizons.

Originality/value – The formulation of ISI in an emerging market context and thereafter examining possible antecedents to influence retail investors in their investment decision making are not done till date. So, the study is unique in its research issue and findings and will have significant implication for the retail investors at least in emerging market contexts.

Keywords Investor sentiment determinants, Investor sentiment index, Investor-specific factors, Stock market-specific factors, Structural equation modelling approach

Paper type Research paper

1. Introduction

Keynes (1936) in his General Theory of Employment, Interest and Money first portrayed the significance of investor sentiment in the “prospective yield of an asset.” He believed that human emotions play a large part in economic activity and asserted that investments are driven by “animal spirits.” More recently, Akerlof and Shiller (2009) stated “to understand how economies work and how to manage them and prosper, we must pay attention to the thought patterns that animate people’s ideas and feelings, their animal spirits. We will never really understand important economic events unless we confront the fact that their causes are largely mental in nature.”

One of the first theoretical models formalizing the role of investor sentiment is that of De Long et al. (1990) which describes the situation as if noise traders base their investment decisions on sentiment, risk-averse arbitrageurs encounter limits-to-arbitrage. Thus, “investor sentiment” is built on two micro foundations: “limits-to-arbitrage” (Brealey et al., 2008; De Long et al., 1990; Shleifer, 2000) and “investor irrationality.” Thus, in the real world, retail investors make decisions not only based on facts and fundamentals and acquired or hearsay information, but also and most often, based on their gut-feeling, comments and opinions of peers and such other investors, and many more psychological traits and biases.
Recent research in behavioral finance also provides strong evidence that such investors’ financial decisions are also affected by internal and external behavioral factors (Shefrin, 2000; Shleifer, 2000). Therefore, it is extremely critical to find and assess which information, state-dependency and psychological and other factors have the greatest influence on their investment decision making in stock markets.

However, empirical research suggests that it is not yet clear how to define and then measure “investor sentiment” properly. As Baker and Wurgler (2006) stated, it is no longer the question whether sentiment affects stock prices, but rather “how to measure investor sentiment and how to quantify its effects.” The theory of investor sentiment tries to provide answers to these questions (Burghardt, 2011), but with limited and contextual success.

So, it is extremely important to define what we mean by “investor sentiment” here before formulating our investor sentiment index (ISI). Some researchers accredit investor sentiment as an inclination of the individual investors to trade on noise instead of information while some others have employed it particularly to refer to investor optimism or pessimism (see e.g. Barberis et al., 1998; Brown and Cliff, 2004; Daniel et al., 1998, etc.). Barberis et al. (1998) presented a model of investor sentiment to exhibit how investors form beliefs about expectation of future earnings. Daniel et al. (1998) put more emphasis on investor overconfidence and its impact on trading. Brown and Cliff (2004) found that many commonly cited indirect measures of sentiment are related to direct measures (surveys) of investor sentiment. They used the direct (survey) data on sentiment to examine the (statistical) causal relation among the indirect variables, and finally investigated the relation between such sentiment and subsequent market returns. Their evidence, however, does not support the conventional wisdom that sentiment primarily affects individual investors.

We, however, like and follow Shleifer (2000) who defined “investor sentiment” as heuristic behavior-based belief or rules of thumb rather than Bayesian rationality in making investment decision. It thereby happens when retail investors’ preferences and beliefs complied with the psychological evidence rather than the standard economic model. We also follow Zhang (2008) – “any erroneous beliefs that individuals have about an economic variable, such as asset prices” and Lee et al. (1991) – “part of their expectations about the returns of assets which are not justified by economic fundamentals” in formulating our definition of “investor sentiment” as follows – investor sentiment is the heuristic behavior-based erroneous belief about an economic variable (fundamental value of it), i.e. stock market prices based on his/her expectations from macroeconomic fundamentals and future stock market condition, backed by private information awareness and knowledge (i.e. Bayesian updating), attitude and approach.

The issues of quantifying investor sentiment and then examining the possible drivers for such sentiment are also not dealt with in detail in the existing empirical literature in relation to investor sentiment. Few studies have used secondary market or publicly available data (Baker and Wurgler, 2006; Baker et al., 2012; Huang et al., 2015) or online ticker searches or internet message postings (see Joseph et al., 2011; Kim and Kim, 2014) to develop an ISI and then use this index to predict future market returns or cross-sectional stock returns or the relationship with such returns mostly in the USA and sometimes in other (see Chen et al., 2010; Corredor et al., 2013) country contexts. However, no study till date has used survey data to formulate an ISI and then use its mean scores to investigate the determinants driving such sentiment through the advanced methodology of structural equation modeling (SEM).

So, our study has filled the existing research gaps in all these regards.

More specifically, we attempt to quantify investor sentiment initially with the formulation of a direct survey measure of investor sentiment (i.e. the ISI) and then it is tested with the drivers influencing investor sentiment. Thus, here we want to investigate the driving factors for the Indian retail investors which influence them to invest in the stock market. We work with investor-specific, stock market-specific, macroeconomic and policy-specific factors to find out which or what combination of them is the major determinant(s) of investor sentiment in this
We focus on investment objectives and associated constraints, awareness and knowledge of the retail investors about market and information asymmetry to represent investor-specific variable, his/her psychological and emotional state and biases as dependent on trading volume, momentum effect, stock market’s nature and price moves and the IPO activity/issue from the stock market-specific viewpoint, and macroeconomic and policy-specific factors as proxied by the regulatory framework of the financial market and strong macroeconomic fundamentals, and monetary and fiscal policy shocks, respectively, under this study. Thus, the instrument used for this study consists of four constructs (independent variables), namely, investor-specific factors, macroeconomic factors (MEF), stock market-specific factors and policy-specific factors, and the ISI is taken as a dependent variable (another construct). The five constructs are already developed and validated by Shiller’s (2000) study and used by Sehgal and Singh (2012) among others with required modifications.

We contribute to the existing literature specifically in three regards. First, we try for the first time in an emerging market context to develop an ISI by a direct survey approach based on internationally validated survey questions. Study results will generalize the drivers of Indian retail investors in influencing their investment decisions in the stock market and can be used in other emerging market contexts. Second, we find that investor-specific and stock market-specific factors drive the Indian retail investors to invest in the Indian stock market. However, macroeconomic and policy-specific factors have no role to play to influence such investors in their investment decisions. Finally, earlier studies (e.g. Baker and Wurgler, 2006; Chen et al., 2010, etc.) have used the principal components analysis to construct the ISI from secondary data mostly for the USA. But, our study for the first time has used the more advanced SEM methodology to investigate the drivers of investor sentiment in an emerging market context.

To fulfill our objectives, we first construct the ISI for the Indian retail investors with six close-ended five-point Likert scale type questions based on well-known consumer and investor sentiment indices (discussed in methodology). We also prepare and run a 34 statements questionnaire based on our hypotheses developed in line with empirical studies among the 576 respondents who are actively investing in the Indian stock market selected on a stratified random basis throughout the country but keeping heterogeneity factor in mind. Data are collected during 2016 in which Indian stock market is steady. Table I exhibits that the benchmark indices, their PE and price-to-book value (PBV) ratios, market capitalizations, cash turnovers, etc., all have increased from the earlier year to study year (i.e. 2016). It is also evident from Table I that annualized volatility has decreased significantly during the same period. Also, SEBI (Annual Report, 2016-2017) point out that in 2016-2017, volatility in Indian benchmark indices NIFTY 50 and S&P Bombay Stock Exchange (BSE) Sensex was 12.3 and 12.1 percent (see Table I), respectively, which was substantially lower as compared to other emerging market economies. So, the Indian market is steady during the study period. The data in Table I also substantiate that though sometimes volatility may creep in Indian stock market like that in 2007-2009 during international crisis periods, but overall due to its increasing trend of development the Indian stock market always attracts own and international investors’ attraction.

So, there is no scope of extreme investor sentiment in either way. The remaining portion of our paper is organized as follows – the next section talks about the literature review, Section 3 depicts data and detailed methodology, Section 4 talks about the results followed by discussions in Section 5 and Section 6 concludes the discussion, followed by references.

2. Literature review and hypotheses development

2.1 Investor-specific factors and investor sentiment index (ISI)

The starting point for any retail investor in formulating his/her investment strategies is the respective investment objectives and associated constraints. The importance of investment
objectives and different objectives-based investment instruments driving retail investors’ sentiment is cited in empirical studies of Al-Tamimi (2005), Bennet et al. (2011, 2012), Sultana and Pardhasaradhi (2012), etc.

The demographic characteristics (see Cohen et al., 1975), socio-economic influence (see e.g. Baker and Haslem, 1974; Sharma and Gupta, 2011), and approach and attitude, specifically their risk-tolerance levels and risk-attitudes, are the key constraints in this regard. Risk-tolerance level or risk-taking ability (Bennet et al., 2012; Sultana and Pardhasaradhi, 2012) is one of the most critical drivers in influencing investors’ attitude as the general belief among them is “higher the risk, higher the return.” However, this risk-attitude of the retail investors is also impacted by their demographic profiles as observed by Baker and Haslem (1974), Gabhane and Kishor (2013), SEBI-NCAER (2000), etc.

Awareness and knowledge of the retail investors about market and their past experiences (successes/failures) contribute a lot toward the investment approach, attitude and behavior thereby (see e.g. Das, 2012; Dhar and Zhu, 2006; Nicolosi et al., 2009). The theoretical model of Daniel et al. (1998) predicts that investors are overconfident about their private information. Additionally, they also claimed that investor becomes even more overconfident under conditions of information uncertainty. So, it is also very critical to find whether he/she takes his/her investment decisions based on some concrete information or based on psychological influence and/or just some hearsay:

\[ H1. \text{ Investor-specific factors drive the retail investor sentiment to invest in the Indian stock market.} \]

2.2 Stock market-specific factors and investor sentiment index (ISI)

From a psychological viewpoint, an investor's decision to buy, sell or hold is influenced by his/her psychological and emotional state, and mood variations (due to weather, sunny hours in day, season of the year, soccer results, etc.; Shu, 2010; Yoshinaga and de Castro, 2012) at that point in time. Thus, individual decision making is not undertaken in isolation,
but with cognitive and emotional biases that may lead him/her to deviate from fully rational behavior. Biases such as overconfidence, representativeness, conservatism and informational inferiority complex (Hirshleifer, 2001) can cause irrational behavior on part of the retail investors. An investor may systematically overweight information that supports his/her initial decisions and down-play or ignore information that contradicts him/her or is inconsistent with his/her beliefs (Daniel and Titman, 1999). Research has also proved that such overconfident investors trade more (Odean, 1998; Vagenas-Nanos, 2010).

Baker and Stein (2004) argued that market liquidity measured by trading volume can be an indicator of investor sentiment. Thus, increase in trading volume reflects the participation of overconfident investors in the market, and indicates an increase in investor sentiment. Avramov and Chordia (2006) showed that investor sentiment is closely related to business cycle, and it has potential to explain not only the size and value effects but also the momentum effect. However, Chordia and Shivakumar (2002) argued that momentum profits are conditional on fundamental factors.

However, irrespective of anything concerning retail investors, their sentiment follows the stock market’s nature and price moves most closely. Empirical literature suggests that retail investors’ sentiment is driven by daily stock returns (Glaser et al., 2009) and/or predictability of future returns because of over-pricing or underpricing at present (Baker and Wurgler, 2006; Dash and Mahakud, 2012; Finter et al., 2011; Lemmon and Portniaguina, 2006). For the Indian market, Sehgal et al. (2009, 2010) have made an early attempt to develop a sentiment index to test the causality between investor sentiment and index return, but their index is not orthogonal to fundamental factors.

Along with the secondary markets returns, the IPO activity/issue is often associated with market tops and is considered a measure of sentiment because of information asymmetries between managers and investors (see Ibbotson and Ritter, 1995). Baker and Wurgler (2006) further suggested that IPO volume can also be used as a sentiment proxy as they observed that the underlying demand for IPOs is perceived to be extremely sensitive to the prevailing sentiment in the stock market. Thus, based on above discussion, we can hypothesize that:

H2. Stock market-specific factors drive the retail investor sentiment to invest in the Indian stock market.

2.3 Macroeconomic factors and investor sentiment index (ISI)
Elton et al. (1998) earlier indicated that investor sentiment does not exist even in a market whose environment is expected to be more prone to investors’ sentiment than in other developed markets. So, the regulatory framework of a financial market does seem to have a strong bearing on investors’ sentiment especially the legal provisions relating to corporate governance and Grievance Redressal Mechanism (Sehgal et al., 2009). Bordo et al. (2006) pointed out that various domestic financial regulations, such as margin requirements and ownership restrictions, may also affect the observed associations between stock prices and macroeconomic conditions and monetary policy.

It is noteworthy that both economists and market practitioners consider stock market as the leading indicator of economic activity (Bosworth et al., 1975). Most of the empirical studies throughout the world (see e.g. Bordo et al., 2006; Flannery and Protopapadakis, 2002; Simpson, 2013, etc.) observe influence of strong macroeconomic fundamentals in driving retail investors’ sentiment. According to the study of Bennet et al. (2012), variables under MEF, namely, interest rate, rate of inflation and strength of Indian economy influence investors’ attitude toward investing in India. This finding is in line with the study of Flannery and Protopapadakis (2002). Sehgal et al. (2009) also observed that the important economic factors in this regard are – real GDP, corporate profits, rate of inflation, level of interest rate and liquidity in the economy. Along with that, the exchange rate and
international commodity prices are also important drivers for the retail investors to invest/withdraw from stock markets. However, in recent years, researchers by allowing the decomposition of stock price movements debate on the weakening link between stock return and real economic activity in developed economies during the stock market boom in 1990s (Laopodis, 2011):

**H3.** MEF drive the retail investor sentiment to invest in the Indian stock market.

2.4 Policy-specific factors and investor sentiment index (ISI)

The macroeconomic fundamentals have close association with the policy-specific drivers specifically the monetary and fiscal policy shocks. Bernanke and Kuttner (2005) argued that the large effect of monetary shocks on expected excess returns may be related to the influence of monetary policy on the riskiness of stocks or on investors’ risk-aversion. In other words, investor psychology may play a significant role in the response of equity investors to monetary news. Bernanke and Kuttner (2005) concluded that an unexpected increase in the fed funds rate leads to a decrease in stock returns. Lutz and Welcome (2013) further found that a surprise monetary policy shock leads to a decrease in investor sentiment even after controlling for equity market fundamentals and returns. Fiscal policy stances can also influence stock market performance. Fiscal policy used in a Keynesian manner can support aggregate demand, boosting the economy and potentially driving stock prices higher. However, from a Ricardian perspective (see Barro, 1974, 1979) fiscal policy is impotent and as such will have no effect on stock markets. Afonso and Sousa (2011) emphasized the importance of integrating monetary and fiscal policy analysis into one framework in which the interactions and effects of both can be analyzed:

**H4.** Policy-specific factors drive the retail investor sentiment to invest in the Indian stock market.

These hypotheses are depicted in Figure 1.

3. Research methodology

3.1 Sample and data collection

Research methodology provides the framework for data collection and analysis (Ghauri and Gronhaug, 2010; Bryman and Bell, 2007). To formulate the ISI and thereafter investigate the sentiment drivers of the Indian retail investors, we employ a cross-sectional design and not others like case study or experimental or longitudinal design. This is because it fits the nature of this study to describe a common trend of investors’ sentiment determinants rather than one specific case, and in this study, we have collected data in a single time, i.e. during 2016 and not in different stages (see Bryman and Bell, 2007). To collect the data, structured interviews are conducted face to face. In some cases, however, we deliver the questionnaire by hand/mail to that respondent and collect/receive right after he/she completes it (in line with Saunders et al., 2009). This process is undertaken for all 576 respondents selected based on stratified random sampling technique with due consideration of heterogeneity in mind. Stratified random sampling allows us to stratify the population by a criterion (in this case, the brokerages’ market share[1]), then choose random sample or systematic sample from each stratum (see Bryman and Bell, 2007). This process ensures that the sample is distributed in the same way as the population (in line with Bryman and Bell, 2007). Also, Saunders et al. (2009) observed that the larger the sample size is, the more representative it can be, thus, the more reliable the result is.

The structured questionnaire is divided into three parts – demographic and personal information, 6 statements forming ISI and 34 statements in relation to drivers of retail investor sentiment as composite scores were taken undertaken here for different dimensions
under each factor (see Table V). In the part of demographic and personal information (see Table IV), nominal (gender, marital status, etc.) and ordinal (age, educational level, income, amount of investment, etc.) scales/measurements are used. Nominal scales are used to classify respondents while ordinal scales are necessary for both classifying and ranking order of respondents or observations (Ghauri and Gronhaug, 2010). For the second and third parts, the five-point Likert scale, which is most widely used for asking respondents’ opinions and attitudes (Fisher, 2010), is utilized here to ask the retail investors to form their individual ISI scores and put their opinions about the four investor sentiment drivers represented by 40 statements in Parts 2 and 3. In the questionnaire survey, the sample respondents are asked to rate each item on a 1 (strongly disagree) to 5 (strongly agree) point scale indicating the extent to which they thought each of the item is likely to influence the individual retail investor’s decision to invest in the Indian stock market. The idea is to get the relative importance of the ISI and the drivers likely to influence investor sentiment.

To collect the required information from the retail investors, the sampling design is carefully decided and properly chosen by us for this study. The survey questionnaire is pretested with 50 retail investors across the cities during late 2015 to ensure the meaning and wording of the questions and then adjusted accordingly before the final survey. In the final survey, the sample size initially covers 750 retail investors who are spread through five different cities including Kolkata, Delhi, Mumbai, Bangalore and Ahmedabad throughout the country, clients of big five brokerage houses (based on market share (see Table II)). However, only 576 of them (i.e. 76.8 percent), who are ultimately the study respondents here, responded to all answers. We select the top 5 cities based on total turnover by the investors in the Cash Segment of the National Stock Exchange (NSE) in the previous year (i.e. 2015–2016) (see Table III). Only in place of Hyderabad, we take Ahmedabad due to

Figure 1.
Hypothesized model
unavailability of resource persons. The cities are also showing similar investment trend in the study year (i.e. 2016) (see Table III).

3.2 Measurement of constructs

In the behavioral finance literature, we find two measures of “investor sentiment” – a direct measure based on surveys (see e.g. Brown and Cliff, 2005) and an indirect measure constructed with the use of market-related implicit sentiment proxies (see e.g. Baker and Wurgler, 2006; Baker et al., 2012; Brown and Cliff, 2004).

The second approach comes from Baker and Wurgler (2006) and proposes an indirect measure of investor sentiment with use of six inputs[2]. While the inputs are readily available, a shortcoming of this market-based measure is that the outcome is the result of many other economic forces other than investor sentiment (Da et al., 2010).

The first approach to measure investor sentiment directly is by using survey-based indices. As opposed to the indirect measure, this direct approach shows a clear theoretical link to investor sentiment; however, taking surveys is time consuming and creates a lag (Qiu and Welch, 2006). In addition, respondents are often biased when responding to questionnaires, so it proves to be a difficult task to obtain truthful and careful answers from the respondents (Podsakoff et al., 2003).

However, we opine that although subject to methodological issues and response biases, a measure of investor sentiment based on survey results can at best capture what we think of as “investor sentiment” here. The definition of sentiment used here is, i.e. the erroneous beliefs of retail investors relative to the benchmark of fundamental value and Bayesian updating imply two main components – an individual’s subjective beliefs, and the objective benchmark of fundamental value. A natural way to quantify the first component of personal

<table>
<thead>
<tr>
<th>Name</th>
<th>Number of client’s accounts</th>
<th>Ranking</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICICI Securities Ltd</td>
<td>591,504</td>
<td>1</td>
</tr>
<tr>
<td>HDFC Securities Ltd</td>
<td>468,844</td>
<td>2</td>
</tr>
<tr>
<td>Sharekhan Ltd</td>
<td>350,509</td>
<td>3</td>
</tr>
<tr>
<td>Angel Broking Ltd</td>
<td>208,545</td>
<td>7</td>
</tr>
<tr>
<td>Motilal Oswal Securities Ltd</td>
<td>192,095</td>
<td>8</td>
</tr>
</tbody>
</table>

Notes: The table shows the studied brokerage houses client’s active accounts in the year 2016 in pan India basis. However, city-wise market share is not available in secondary data sources and such internal data (insider information based) are not disclosed here on confidential ground.

Sources: NSE, BSE, SEBI

<table>
<thead>
<tr>
<th>City</th>
<th>Turnover (Rs billions)</th>
<th>% Share in cash turnover</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mumbai</td>
<td>24,624.28</td>
<td>30,321.64</td>
</tr>
<tr>
<td>Delhi–Gurgaon</td>
<td>6,095.55</td>
<td>5,512.93</td>
</tr>
<tr>
<td>Bangalore</td>
<td>1,933.52</td>
<td>3,187.36</td>
</tr>
<tr>
<td>Kolkata</td>
<td>2,355.04</td>
<td>2,421.77</td>
</tr>
<tr>
<td>Hyderabad</td>
<td>1,722.54</td>
<td>1,812.08</td>
</tr>
<tr>
<td>Ahmedabad</td>
<td>1,133.16</td>
<td>1,511.22</td>
</tr>
</tbody>
</table>

Notes: The table shows the city-wise turnover in the Cash Segment of the National Stock Exchange (NSE) for the two consecutive years (including our study year). Out of these six top cities, we have selected five to undertake our study. Hyderabad is dropped because of unavailability of resource persons.


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Investor sentiment antecedents
beliefs of them is to ask the investors what they believe the economy or stock market will be like in each future period and their market actions accordingly. In effect, the responses to these questionnaire surveys can be used to construct a measure of sentiment, i.e. the ISI.

There are many types of surveys conducted throughout the world to fall upon to construct our questionnaire to form the ISI and its determinants of the nature studied here. University of Michigan Consumer Confidence Index (MCCI) started in 1978 is the pioneering one in judging consumer confidence, but on the economic front. However, studies like Lemmon and Portniaguina (2006) and Baker and Wurgler (2006) use this consumer confidence surveys to measure the investor sentiment. Although the MCCI has its merits in being a popular economic indicator (Acemoglu and Scott, 1994), the index as a potential investor sentiment proxy faces many problems like its backward-looking approach and consumer confidence surely may not represent investor sentiment in the stock market. The India Index of Consumer Sentiment by Centre for Monitoring Indian Economy in collaboration with BSE and Survey Research Center of University of Michigan’s survey although is forward looking but mostly economy oriented and not stock market focused. This is because confidence in the stock market reflects a variety of things including macroeconomic fundamentals, regulatory/legal, policy (tax) related, institutional, stock market related and psychological, and thus be less straight-forward to measure than consumer confidence (Zhang, 2008). The American Association of Individual Investors surveys (see Brown, 1999) and National Association of Active Investment Managers’ Exposure Index have a short-term focus up to six months in the future. The Montgomery Investor Sentiment Survey (Montgomery Investment Management Pty Ltd, 2016) conducted for Australian investors and Yale School of Management’s Stock Market Confidence Index (refer www.icf.som.yale.edu/financialdata/confidenceindex/) are the indices that suit our objectives and thereby our study questions are in line with these surveys. The random selection of individual retail investors who are subject of this study is also done on the methodological basis of these surveys. Survey results are then used to form the ISI score which is the dependent variable of this study to further investigate the drivers of investor sentiment.

Unlike amateur surveys common in investment newsletters, this survey in line with Yale’s survey is careful not to ask respondents of their precise expectations for the future. This is because there is evidence that most people do not in fact have precise estimates for future changes over specific horizons, and when asked for numerical values merely make them up to please the interviewer (Shiller, 2000). Furthermore, unlike the Michigan survey, the Yale survey focuses exclusively on forward-looking beliefs. It also asks about expectations for the stock market, rather than the economy in general. So, our survey questions and subsequent formation of the ISI are robust in nature.

3.3 Data analysis

In this study, we employ SEM to test the unidimensionality of the constructs and to analyze the antecedents of investor sentiment. The SEM is used here because of its several privileges over other approaches (see e.g. Gefen et al., 2011; Byrne, 2010). This technique is also favorable for investigating a newfound theory and model (as it is here), as it can be appropriate for exploratory and confirmatory research (Gefen et al., 2011). This is because it simultaneously tests the entire system of variables which we have conceptualized in this model. The SEM approach has also the capability to explain both direct and indirect as well as total effects (Keith, 2006; Westland, 2012).

There are two approaches to SEM, the covariance methods and PLS path modeling. Covariance methods make rigid assumptions about the distribution of variables (multivariate normality) and the sample size (at least 200). Another criterion is the degrees of freedom, which means that each construct should have at least three indicators
for it to be identified. These three indicators do not make any assumptions about the
distribution of the data, and the sample size needed for model validation and testing is much
smaller. The convergent validity of each construct is checked by examining the average
variance extracted (AVE) values. Constructs, which have AVE values greater than 0.5,
are said to have convergent validity or unidimensionality. In some cases, values up to 0.4 are
also considered if they are central to the model (Chin, 1998; Chin et al., 2003). The
discriminant validity of constructs is ascertained by comparing the AVE scores of the two
constructs, with the square of the correlation between the two constructs. If both the AVE
values are larger than the square of the correlation, the constructs can be considered to show
discriminant validity (Fornell and Larcker, 1981).

We have also analyzed the scales after the collection of data to test the purification of
scales, reliability of scales, unidimensionality of scales and validity of the scales. The
purification is done using Corrected Item Total Correlation (CITC), reliability is tested using
Cronbach’s $\alpha$ while validity and unidimensionality are tested using PLS path modeling. It is
also extremely essential to purify the measuring instruments of variables that do not
correlate to the constructs (Churchill et al., 1979) before any type of factor analysis is done
(i.e. exploratory factor analysis or confirmatory factor analysis (CFA)). The purification is
carried out here by inspecting the CITC values of each variable with respect to the construct
to which it belongs. CITC indicates whether the variable belongs to the construct or not. The
variables showing scores lower than 0.5 are deleted, unless there is a compelling reason to
keep them in the construct.

Reliability of constructs refers to the accuracy with which the constructs repeatedly
measure the same phenomenon without much variation. Validity refers to the accuracy of
the research instrument. There are three types of validity, which are commonly examined in
research projects, namely, content validity, construct validity and predictive validity
(Gaur and Gaur, 2006). We use convergent validity under his study. The convergent validity
of each construct, modeled in the reflective mode, is verified by examining the AVE values.
Generally, constructs which have AVE greater than 0.50 and composite reliability greater
than 0.70 are considered to have a good convergent validity (Chin, 1998; Chin et al., 2003).

4. Results
4.1 Sample respondents characteristics
Table IV provides sample respondents characteristics. Among the surveyed 576 respondents,
86 percent (approximately) are male and remaining female. Approximately 60 percent of the
respondents are experienced investors who are falling in the age group of 35–60 years. Most of
the respondents (approximately 88 percent) are married and having a family with dependents.

Thus, presumably they are sensible and responsible enough to judge the pros and cons
before investing in the stock market. The educational qualification also evidences that most
of the studied investors (approximately 89 percent) are at least graduate, which can imply
that they take their investment decisions based on awareness and knowledge. Also,
approximately 81 percent of the respondents are falling into middle-income category and
approximately 83 percent are saving approximately 40 percent of their monthly income.
In total, 88 percent (approximately) of the sample respondents are also inclined toward the
Indian stock market as their primary investment avenues/instruments are that of equity,
mutual funds and/or commodities. It is also evident from Table IV that approximately
71 percent of the 576 respondents are investing 50 percent or more of their monthly savings
in the Indian stock market. This is since 97 percent of the total sample respondents are
earning up to 25 percent ROI on their stock market investment monthly. All these facts are
evident of the heterogeneity of the sample respondents chosen under this study. They also
imply the necessity to investigate what factor or combination of factors drives them to
invest in the Indian stock market regularly and in such voluminous manner.
<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Frequency</th>
<th>In % of total respondents (576)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>497</td>
<td>86.28</td>
</tr>
<tr>
<td>Female</td>
<td>79</td>
<td>13.72</td>
</tr>
<tr>
<td><strong>Age (years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 25</td>
<td>23</td>
<td>3.99</td>
</tr>
<tr>
<td>25–34</td>
<td>166</td>
<td>28.82</td>
</tr>
<tr>
<td>35–44</td>
<td>116</td>
<td>20.14</td>
</tr>
<tr>
<td>45–60</td>
<td>229</td>
<td>39.76</td>
</tr>
<tr>
<td>More than 60</td>
<td>42</td>
<td>7.29</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>512</td>
<td>88.89</td>
</tr>
<tr>
<td>Unmarried</td>
<td>64</td>
<td>11.11</td>
</tr>
<tr>
<td>Single/Others</td>
<td>00</td>
<td>00.00</td>
</tr>
<tr>
<td><strong>Educational qualification</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than graduate</td>
<td>64</td>
<td>11.11</td>
</tr>
<tr>
<td>Graduate</td>
<td>442</td>
<td>76.74</td>
</tr>
<tr>
<td>Post-graduate and more</td>
<td>59</td>
<td>10.24</td>
</tr>
<tr>
<td>Professional qualifications</td>
<td>11</td>
<td>1.91</td>
</tr>
<tr>
<td><strong>Monthly income (Rs)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 25,000</td>
<td>20</td>
<td>3.48</td>
</tr>
<tr>
<td>25,000–49,999</td>
<td>303</td>
<td>52.60</td>
</tr>
<tr>
<td>50,000–79,999</td>
<td>161</td>
<td>27.95</td>
</tr>
<tr>
<td>80,000 and above</td>
<td>92</td>
<td>15.97</td>
</tr>
<tr>
<td><strong>Monthly savings (Rs)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 10,000</td>
<td>207</td>
<td>35.94</td>
</tr>
<tr>
<td>10,000–19,999</td>
<td>271</td>
<td>47.05</td>
</tr>
<tr>
<td>20,000–39,999</td>
<td>94</td>
<td>16.32</td>
</tr>
<tr>
<td>40,000 and above</td>
<td>4</td>
<td>0.69</td>
</tr>
<tr>
<td><strong>Investment avenues/instruments</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100% in equity and mutual funds and/or commodities</td>
<td>439</td>
<td>76.22</td>
</tr>
<tr>
<td>More in equity and mutual funds and/or commodities and a portion in FDs and MIS</td>
<td>69</td>
<td>11.98</td>
</tr>
<tr>
<td>More in FDs and MIS and a portion in equity and mutual funds and/or commodities</td>
<td>54</td>
<td>9.37</td>
</tr>
<tr>
<td>More in any other (like real estate)</td>
<td>14</td>
<td>2.43</td>
</tr>
<tr>
<td><strong>Monthly investment (Rs)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 5,000</td>
<td>152</td>
<td>26.38</td>
</tr>
<tr>
<td>5,000–9,999</td>
<td>259</td>
<td>44.97</td>
</tr>
<tr>
<td>10,000–24,999</td>
<td>157</td>
<td>27.26</td>
</tr>
<tr>
<td>Equal to or more than 25,000</td>
<td>8</td>
<td>1.39</td>
</tr>
<tr>
<td><strong>Monthly ROI (%)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Up to 10</td>
<td>378</td>
<td>65.63</td>
</tr>
<tr>
<td>10–25</td>
<td>180</td>
<td>31.25</td>
</tr>
<tr>
<td>25–50</td>
<td>18</td>
<td>3.12</td>
</tr>
<tr>
<td>50 and more</td>
<td>00</td>
<td>00.00</td>
</tr>
</tbody>
</table>

**Notes:** The table provides the demographic and economic characteristics of the 576 respondents studied here including their gender, age, marital status, educational qualification, monthly income, monthly savings, investment avenues/instruments, monthly investment in the Indian stock market and monthly return on investment (ROI) from the market.
4.2 Reliability and validity of the measures

In the first stage of data analysis, our first objective is to measure the convergent validity of our five different constructs and how they are distinct from each other (i.e. discriminant validity). So, we conducted a CFA based on 22 variables. For our measurement model, the values of different indices with ($\chi^2$/df) value of 1.19 ($p < 0.05$), RMSEA < 0.05; CFI = 0.986, GFI = 0.933 and NFI = 0.922. The convergent validity is examined by looking at each item loadings and the AVE.

Composite reliability and the AVE estimates are shown in Table V. The values for composite reliability and AVE greatly exceed the minimum acceptable values of 0.70.

<table>
<thead>
<tr>
<th>Items</th>
<th>Variables</th>
<th>$\alpha$</th>
<th>CR</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Investor sentiment index (ISI)</strong></td>
<td></td>
<td>0.862</td>
<td>0.528</td>
<td></td>
</tr>
<tr>
<td>ISI1</td>
<td>Considering the current state of the Indian economy, do you think that it is the right time in investing in Indian stock market?</td>
<td>0.884</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISI2</td>
<td>Considering your investment objectives and future expectations, do you want to invest in Indian stock market for next 5 years?</td>
<td>0.791</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISI3</td>
<td>Do you think that the Indian stock market will give maximum returns on your investment in future in short and long term?</td>
<td>0.866</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISI4</td>
<td>Do you think that due to excessive volatility in Indian stock market, you should not invest in stocks or related financial instruments?</td>
<td>0.805</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISI5</td>
<td>What overall investment return (i.e. ROE) do you think you are achieving/will achieve in your stock market investment portfolio per annum now/during the next 3–5 years (after paying investment fees)?</td>
<td>0.610</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISI6</td>
<td>I am investing and/or want to invest in Indian stocks through different modes</td>
<td>0.650</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Macroeconomic factors</strong></td>
<td></td>
<td>0.835</td>
<td>0.576</td>
<td></td>
</tr>
<tr>
<td>MEF1</td>
<td>Composite score of items on IIP Growth/GDP in Indian stock market</td>
<td>0.819</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEF2</td>
<td>Composite score of items on lower rate of inflation</td>
<td>0.818</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEF3</td>
<td>Composite score of items on exchange rate, money supply and liquidity in Indian stock market</td>
<td>0.897</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEF4</td>
<td>Composite score of items on commodity prices in Indian stock market</td>
<td>0.600</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Stock market-specific factors</strong></td>
<td></td>
<td>0.851</td>
<td>0.588</td>
<td></td>
</tr>
<tr>
<td>SMSF1</td>
<td>Composite score of items on investor friendly market environment in Indian stock market</td>
<td>0.768</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMSF2</td>
<td>Composite score of items on IPO activities in Indian stock market</td>
<td>0.803</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMSF3</td>
<td>Composite score of items on trading volume and momentum in Indian stock market</td>
<td>0.747</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMSF4</td>
<td>Composite score of items on market-related technical factors in Indian stock market</td>
<td>0.748</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Investor-specific factors</strong></td>
<td></td>
<td>0.890</td>
<td>0.671</td>
<td></td>
</tr>
<tr>
<td>ISF1</td>
<td>Composite score of items on retail investors’ investment objectives and constraints in Indian stock market</td>
<td>0.754</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISF2</td>
<td>Composite score of items on retail investors’ emotional and psychological biases in Indian stock market</td>
<td>0.938</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISF3</td>
<td>Composite score of items on retail investors’ awareness and knowledge in Indian stock market</td>
<td>0.794</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISF4</td>
<td>Composite score of items on retail investors’ approach and attitude in Indian stock market</td>
<td>0.778</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Policy-specific factors</strong></td>
<td></td>
<td>0.746</td>
<td>0.500</td>
<td></td>
</tr>
<tr>
<td>PSF1</td>
<td>I also take into consideration T-Bill (Treasury-Bill) rate before investing into stock market</td>
<td>0.71</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSF2</td>
<td>Higher CRR by the RBI has a negative impact on the Indian stock market</td>
<td>0.717</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSF3</td>
<td>I do follow annual Fiscal budget carefully to decide my future investment course of action</td>
<td>0.643</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSF4</td>
<td>Fiscal policy does have impact in driving my sentiment</td>
<td>0.676</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table V. Reliability testing of each variable.

Notes: The table provides composite reliability (CR) and average variance extracted (AVE) values for the constructs used in this study. It also shows the Cronbach’s $\alpha$ for each of the statements under different constructs.
and 0.50, respectively (Holmes-Smith, 2001). For the factors for the convergent validity, the critical ratio of every item exceeds the 1.96 values (Anderson and Gerbing, 1988). To test the discriminant validity (see Table VI), we find that the AVE for each pair of variables is greater than the squared correlation for the same pair, which implies that each construct is distinct.

4.3 Structural analysis and model testing
The model is tested by using AMOS 20. The results provide more valid and reliable measurement items which are further used to evaluate the structural model of this section. The overall fit indices for the above proposed structural model are as follows: ($\chi^2$/df) is 1.19 at $p < 0.05$; GFI = 0.933, NFI = 0.922, CFI = 0.986 and RMSEA < 0.05. Thus, it represents a good model fit.

4.4 Hypotheses testing results
It is proposed in this study that retail investor-specific factors drive their sentiment to invest in Indian stock market (H1). According to the analysis, the critical value ($t$-value) is $-1.997$ at $p < 0.05$; hence the findings are significant in nature. Thus, investors’ investment objectives and constraints, emotional and psychological biases, awareness and knowledge as well as approach and attitude drive their sentiment to invest in the Indian stock market. It is also found in this study that there is a significant positive relationship between stock market-specific factors and the ISI (critical value, i.e. $t$-value = 5.486, $p < 0.05$). Thus, the stock market-specific factors significantly drive the retail investor sentiment to invest in Indian stock market (H2). It implies that the different stock market factors (namely, investor friendly market environment, IPO activities, trading volume and momentum as well as some market-related technical factors) are also the major determinants of retail investor sentiment. However, the study findings reveal that different MEF and policy-specific factors do not play any significant role in driving investor sentiment to invest in the Indian stock market. This is because there is no significant relationship between MEF ($t$-value = $-0.333$, $p > 0.05$) (H3) as well as policy-specific factors ($t$-value = $1.58$, $p > 0.05$) (H4). Thus, it is implied that different MEF (i.e. IIP growth/GDP; exchange rate, money supply and liquidity; commodity prices and inflation rate) do not drive investor sentiment to invest in the market. Similarly, policy-specific factors (i.e. different types of monetary and fiscal policies) also do not act as investor sentiment drivers for the Indian retail investors (see Table VII).

5. Discussion
The main objective of us here is to investigate how retail investor sentiment (proxied by the ISI) is driven by different internal and external factors, e.g. investor-specific factors, stock market-specific factors, MEF and policy-specific factors. All these factors are measured by

<table>
<thead>
<tr>
<th>Test for DV</th>
<th>CSI</th>
<th>MEF</th>
<th>SMSF</th>
<th>ISF</th>
<th>PSF</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSI</td>
<td>0.727</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MEF</td>
<td>-0.068</td>
<td>0.759</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SMSF</td>
<td>0.359</td>
<td>0.051</td>
<td>0.767</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ISF</td>
<td>-0.036</td>
<td>0.027</td>
<td>0.235</td>
<td>0.819</td>
<td></td>
</tr>
<tr>
<td>PSF</td>
<td>0.149</td>
<td>-0.031</td>
<td>0.110</td>
<td>0.011</td>
<td>0.652</td>
</tr>
</tbody>
</table>

Table VI. Discriminant validity measurement

Notes: ISI, investor sentiment index; MEF, macroeconomic factors; SMSF, stock market-specific factors; ISF, investor-specific factors; PSF, policy-specific factors. The table provides results of discriminant validity (DV) as we find average variance extracted (AVE) for each pair of variables is greater than the squared correlation for the same pair, which implies that each construct is distinct.
different dimensions. Results reveal that investor-specific factors (i.e. investors’ investment objectives and constraints, emotional and psychological biases, awareness and knowledge as well as approach and attitude) have significant influence on the ISI and thereby driving Indian retail investors to invest in the Indian stock market. These results corroborate earlier study results of Al-Tamimi (2005), Bennet et al. (2011, 2012), Dhar and Zhu (2006), Nicolosi et al. (2009), Sultana and Pardhasaradhi (2012), etc. The implication of the factors comprising this study construct on retail investor sentiment is that both rationality and irrationality/psychology persist in investment decisions. So, Indian retail investors are showing a mixed approach of Bayesian and behavioral finance decision making. The stock market-specific factors which mainly include investor friendly market environment, IPO activities, trading volume and momentum and market-related technical factors also have a significant influence on retail investor sentiment. These results are in line with Avramov and Chordia (2006), Baker and Wurgler (2006) and Sehgal et al. (2009) but contradict with Chordia and Shivakumar (2002). These results also prove that the Indian retail investors follow market fundamentals and technical, both of primary and secondary markets. This also implies their mixed (rational and noise-trading) approach for stock market investment decisions.

The other two proposed factors, i.e. MEF and the policy-specific factors are not driving retail investor sentiment as per study results. These findings are in contradiction with Bennet et al. (2012), Bordo et al. (2006), Flannery and Protopapadakis (2002), Sehgal et al. (2009), Simpson (2013), etc. in international and Indian contexts. However, they support the claim that in recent years there is a weakening link between stock return and real economic activity in developed economies during the stock market boom in 1990s (Laopodis, 2010) in an emerging market case like India. As the macroeconomic fundamentals have close association with the policy-specific drivers specifically the monetary and fiscal policy shocks, this study further substantiates that Indian retail investors are not driven by such factors. These results are thereby in contradiction with Bernanke and Kuttner (2005) and Lutz and Welcome (2013) but agree with the Ricardian perspective of Barro (1974, 1979) for Indian investors. Thus, these are interesting observations that macroeconomic fundamentals and related policies are not driving the retail investors to invest in the Indian stock market.

6. Conclusion
This study is an advancement in quantifying retail investor sentiment by formulating a well drawn-out primary survey process in an emerging market context. Earlier studies have used secondary market or publicly available data (Baker et al., 2012; Huang et al., 2015) or online ticker searches or internet message postings (see Joseph et al., 2011; Kim and Kim, 2014) to develop such an ISI. This study is also unique in its application of the ISI as it finds the drivers of such sentiment which influence the retail investors to invest in the stock market. However, earlier studies have only used sentiment index to predict future market returns or cross-sectional stock returns or the relationship with such returns mostly in the

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Critical value (t-value)</th>
<th>p-value</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>$H_1$: ISF $\rightarrow$ ISI</td>
<td>$-1.997$</td>
<td>$&lt; 0.05$</td>
<td>Accept</td>
</tr>
<tr>
<td>$H_2$: SMSF $\rightarrow$ ISI</td>
<td>$5.488$</td>
<td>$&lt; 0.05$</td>
<td>Accept</td>
</tr>
<tr>
<td>$H_3$: MEF $\rightarrow$ ISI</td>
<td>$-0.338$</td>
<td>$&gt; 0.05$</td>
<td>Reject</td>
</tr>
<tr>
<td>$H_4$: PSF $\rightarrow$ ISI</td>
<td>$1.588$</td>
<td>$&gt; 0.05$</td>
<td>Reject</td>
</tr>
</tbody>
</table>

Notes: ISI, investor sentiment index; MEF, macroeconomic factors; SMSF, stock market-specific factors; ISF, investor-specific factors; PSF, policy-specific factors. The table summarizes the hypotheses testing results based on t-value and significance at 5 percent level.

Table VII. Hypotheses testing results
USA and sometimes in other (see Chen et al., 2010; Corredor et al., 2013) country contexts. So, in line with our objectives we find that investor-specific and stock market-specific factors drive retail investor sentiment to invest in the Indian stock market. Also, we have used the more advanced SEM methodology to find the determinants of the retail investor sentiment which itself is an advancement from the earlier studies (see e.g. Chen et al., 2010, etc.).

Due to its wide coverage and focus the study results can be helpful to retail investors, investment consultants, regulators and all other associated with the market in formulating investment strategies by own or by others. Many (Baker et al., 2012; Bennet et al. 2011, 2012; Huang et al., 2015) observe that a better understanding of behavioral processes and outcomes is important for financial planners because an understanding of how investors generally respond to market movements would help them in devising appropriate asset allocation strategies for clients. Thus, though this study is conducted among Indian retail investors, but its results can further be tested in other emerging markets context or developed markets also as a theoretical model. However, this study is not free from limitations. The problems with survey measures like possibility of response bias, measurement error, sampling error and other problems that arise with polling human subjects can be inherent to this study. Also, due to time and resource constraints, more retail investors from different other parts of the country cannot be included under this study.

Future studies can investigate the situations or contexts under which investor-specific factors, i.e. Bayesian or behavioral finance approach prevails one over the other. Researchers can also consider which of the market-related drivers is/are influencing investor sentiment most across time, situations and country contexts. The insignificant role of macroeconomic fundamentals and policy changes can also be intriguing issues for the future researchers to study upon.

Notes
1. The brokerage houses (five in numbers) are selected based on their market presence (regarding investor active accounts (see Table II)) in the selected cities (insider information based). However, due to confidentiality (internally) and non-availability (from secondary data sources) we here cannot disclose the city-wise facts and figures. But, the pan India ranking is provided, and all these are the respective market leaders in the five cities studied (e.g. say ICICI Securities Ltd in Kolkata, Sharekhan Ltd in Delhi, etc.) (see NSE and BSE websites).
2. The six proxies for sentiment include – the closed-end fund discount, share turnover, number of IPOs, average first-day returns of IPOs, the share of equity issues in total equity and debt issues, and dividend premium. In Indian context, we can refer Dash and Mahakud (2012).

References


Further reading


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