Antecedents of Firm's Risk-play – A Structural Equation Modeling Approach in an Emerging Market Context

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Abstract

Firm-risk and managerial risk-taking though distinct are used interchangeably in empirical literature. Here, we identify these two distinctly by examining different proxies for them. We use income stream uncertainty and accounting beta to proxy firm-risk, and market risk and capital intensity ratio represent managerial risk-taking. Once defined, our objective is to find the antecedents of both these by using the most advanced structural equation modelling (SEM) approach from created constructs of performance, psychological, corporate governance, shareholding patterns, fundamental valuation and firm's characteristics drivers. We formulate seven hypotheses based on empirical literature representing these constructs. We use data of 269 Indian firms for 18 (1999-2017) years to run SEM and then analyse our results individually and combinedly. SEM is used here to test the unidimensionality of the seven constructs (consisting of 19 drivers) and to analyze these drivers (i.e. antecedents) influence on firm-risk and managerial risk-taking i.e. firm's risk-play. Results prove that present firm-performance, corporate governance drivers, promoters' shareholding and firm's characteristics are driving firm's risk-play. However, fundamental valuation drivers have no role to play in influencing income stream uncertainty, systematic operating risks and managerial risk-attitudes. Psychological drivers and foreign shareholdings act only as a catalyst of firm-risk.

***JEL classification**:* G30, G40

Keywords: Firm-risk drivers, Managerial risk-taking drivers, Corporate governance, Shareholdings, Firm characteristics, Structural equation modelling

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Introduction

Understanding risk from managerial risk-taking (problematic and innovative searches) and firm-risk (i.e. income stream uncertainty) contexts is an important strategic management and finance issue during last three decades. Empirical literature examines the concept of risk-taking from economic (see Karni and Safra, 1987; and Machina, 1989) [i.e. *how much* (variability of income)]; decision theoretic (see Kahneman and Tversky, 1979; and Keeney and Raiffa, 1976) [i.e. *who takes* and *when* (Figner et al., 2009; Weber et al., 2002)]; and psychological (see Kogan and Wallach, 1964; Tversky et al., 1988; etc.) [i.e. *the extent to which* the decision is emotionally charged (Figner et al., 2009; Loewenstein et al., 2001)]; etc. perspectives across the world. However, most of the earlier studies have used firm-risk to proxy for managerial risk-taking based on the assumption that such managerial actions cause variations in firm performance. While determinants and consequences of firm-risk is recently examined in the US and other developed markets worldwide (see e.g., Bargeron et al., 2010; Faccio et al., 2011; John et al., 2008; Li et al., 2013; etc.), little attention has been paid to these issues in emerging markets. Scholarly research in strategy, finance and other organisation disciplines is generally focused on identifying factors that explain firm performance without serious consideration of drivers (i.e. antecedents) of firm-risk and managerial risk-taking (i.e. firm's risk-play) except in relation to systematic risk.

Few past empirical studies document individual organisational and industrial drivers of firm-risk in relation to firm fundamentals (see Jensen et al., 1992; La Porta et al., 2000; Lu et al., 2019; etc.); firm performance (see Fisher and Hall; 1969; Massini et al., 2005; DasGupta and Deb, 2020; etc.); and corporate governance (see Fama and Jensen, 1983; Brick and Chidambaran, 2008; Bhagat et al., 2015; etc.), but, mostly in developed market contexts. Therefore, empirical literature is mostly silent about the drivers (i.e. antecedents) of firm-risk and managerial risk-taking in terms of problematic or innovative searches by firms and their managers. Only a few studies like Xiadong et al. (2014) tries to investigate its determinants from theoretical application viewpoint. We fill these research gaps in the existing literature by investigating the influence of firm's performance, psychological factors, ownership patterns, corporate governance, institutional characteristics, and valuation factors as antecedents of firm-risk and managerial risk-taking in a single model using the most advanced structural equation modelling (SEM) approach in an emerging market context i.e. India. Our results would also find out whether the same drivers are influencing both firm-risk and managerial risk-taking behaviour, and if so which are these antecedents.

Accordingly, our main motivation of this study is to find out which of the studied antecedents among performance, psychological, corporate governance, shareholding patterns, fundamental valuation, and firm's characteristics drivers influence both firm-risk and managerial risk-taking in the emerging market context of India. As a secondary motivation, we would validate whether income stream uncertainty and accounting beta proxying firm-risk, and capital intensity ratio and market risk representing managerial risk-taking provide identical findings in the context of antecedents driving firm's overall risk-play.

To fulfil our objectives, we begin by providing working definitions of risk, firm-risk and managerial risk-taking to show their distinctiveness to be studied here. These definitions would also allow us to outline how managers' risk-taking influences firm-risk as is generally perceived by external stakeholders including the shareholders. Thereby, it is extremely critical to draw a distinction between how managers perceive risk (i.e. managerial risk-taking) and how external stakeholders measure risk (i.e. firm-risk), as these two have most often been confused

and used interchangeably. Finally, we presume that despite differences between managerial risk-taking and firm-risk, the former has a significant influence on the latter.

Strategy and finance literature define risk in two different ways. For some authors (e.g. Feigenbaum and Thomas, 1988), it represents the degree of uncertainty and is thereby measured as variability in income. This definition corresponds to notion of '*firm-risk*', i.e. say managers do problematic searches, as generally being held by investors/shareholders who wish to price future income streams. A critical influence on the pricing of a firm's future income (i.e. through profitability measures and stock prices) is the uncertainty of that income. Firms which report returns varying disproportionately (i.e. volatile or downside firms) relative to its own past returns or overall market's returns are of higher risk. Therefore, here we take both income stream uncertainty and accounting beta to proxy firm-risk. This would cater not only the firm's-, but industry-heterogeneity -based performance volatility also (see Fiegenbaum, 1990; Lehner, 2000; Miller and Bromiley, 1991; etc.).

Therefore, in such an organisational context, '*managerial risk-taking*' refers to choosing the strategies or investment opportunities with higher income variability within the wider range of possible alternatives (i.e. innovative searches) to maximise bottom line. However, Shapira (1995), Miller and Leiblein (1996), etc. argue that firm managers view risk more in terms of downside losses (i.e. problematic searches). So, they are more likely to focus on potential losses from an investment alternative, i.e., actions that increase firm's exposure to losses are thereby risky. Therefore, according to us, '*managerial risk-taking*' seeks to reduce firm-risk by limiting downside exposure even if this sacrifices upside potential in the strategic or investment decision making process. That is why many prior studies inaccurately use firm-risk to proxy managerial risk-taking because they assume that managerial risk-taking would modify firm's performance (Palmer and Wiseman, 1999). All these motivate us to examine both firm-risk andmanagerial risk-taking (i.e. firm's risk-play, as we put it here) distinctively with different set of proxies here.

Generally, managers make strategic choices among available alternative investment opportunities, e.g., capital investment in new projects, research and development expenditures, etc., i.e., in nature of problematic and/or innovative searches, on behalf of the firm, having different risk-return characteristics. Then, one combines the risk-return characteristics of the selected investments to create a portfolio of risk and return that reflects firm's overall risk-play in the form of variability of income streams and market returns which investors/shareholders look at. Therefore, in this study we also use capital intensity ratio and market risk to proxy managerial risk-taking in the firm context.

We contribute to the literature in two ways. Firstly, we frame two different risk measures, i.e., firm-risk and managerial risk-taking (i.e. firm's risk-play) under one model to examine and find out the most influential drivers of them in an emerging market context which has never done before. Under each of these measures, we have also taken two dependent variables each of distinct nature to make our study more robust. Study results prove that present firm-performance, corporate governance, promoter's shareholding and firm's characteristics are driving both firm-risk and managerial risk-taking simultaneously. However, fundamental valuation drivers have no role to play in influencing income-variability, systematic operating risks and managerial risk-attitudes. Psychological drivers and foreign shareholdings act only as a catalyst of firm-risk. Secondly, we use the most advanced SEM approach for the first time in literature to find out common antecedents for Indian firms which influence both firm-risk and managerial risk-taking simultaneously. The SEM is a second-generation multivariate

method that is used to assess the reliability and validity of the model measures by the CFA (confirmatory factor analysis), and thereby much more superior to other regression methods. Therefore, here we eliminate the weaknesses of the limited earlier studies with methodological concerns.

Literature review and hypotheses development:

Performance drivers and firm's risk-play:

Classical finance theory and empirical literature pre-Bowman (1980) (such as Fisher and Hall, 1969; and Hurdle, 1974) point out a significant positive association between firm's risk and return. Fisher and Hall (1969) in their seminal paper first present an economic argument of firm-performance's impact on risk-taking - "this implies that earnings should be larger, on the average, for firms with greater variation in their earnings than for firms with little earnings variability" (p.82). However, Bowman (1980) for the first time prove a negative risk-return association for poor performers. The direct impact of firm-performance on firm-risk and managerial risk-taking is central to work of Bowman (1980; 1984) and Fiegenbaum and Thomas (1985; 1988) and is also significant in Singh's (1986) research. However, most of these studies see the impact of performance on firm-risk and managerial risk-taking from a troubled firm context and not on an overall top-down basis. In addition, income stream uncertainty is mostly been studied either taking the return on assets (ROA) or return on equity (ROE) measures. To fill these gaps in the existing literature, here we take actual firm- performance, actual market-return performance of firms and also the cash performance to examine the impact of performance as a whole on firm-risk and managerial risk-taking (i.e. firm's risk-play) (see table 1).

Therefore, our ***first hypothesis*** is:

H1: Performance drivers influence firm's risk-play.

Psychological drivers and firm's risk-play:

Firm's managers take decisions based on two different measures - performance level they aspire to (aspirations) and performance level they expect (expectations). This implies that the amount of risk managers would accept depend on the expected performance in relation to aspiration. When expected performance is higher than aspiration, managers are contended about firm's performance, so they need no change. However, if manager has his expected performance level fall below aspiration level, a major organizational change is initiated to fix policies, procedures and techniques that would increase firm-performance (see behavioural theory of Cyert and March, 1963; and March and Shapira, 1987). Kahneman and Tversky's (1979) prospect theory puts that level of a firm's aspiration serves as a target or reference level, firms that anticipate returns below that level would be risk-taking and those that anticipate returns above it would be risk-avoiding.

This aspiration-expectancy gap for below performing firms would induce them to undertake risky decisions (problematic searches) in capex front, which in turn would reduce firm predictability and create income stream uncertainty and investors' suspicions. Lant and Montgomery (1987) also find that performance below aspirations resulted in riskier choices and more innovative searches than performance that met or exceeds aspirations. Although all earlier studies use only actual performance to predict risk, we follow the behavioural theory

(Cyert and March, 1963) of the firm and use expected performance along with actual performance here. It allows us to differentiate between direct effects of performance on firm-risk and managerial risk-taking and psychological impact of aspiration-expectation process on these.

As both aspiration and expectation are manager and firm-centric reference or target points we also incorporate an industry performance psychological driver (see table 1) in line with earlier empirical studies (Fiegenbaum, 1990; Lehner, 2000; and Miller and Bromiley, 1991) which adopt industry mean or median as the reference point. This is also used here as a complementary measure of firm's actual performance impact on firm-risk and managerial risk-taking (i.e. firm's risk-play). Therefore, our ***second hypothesis*** is:

H2: Psychological drivers (aspiration-expectancy gap in terms of firm's actual performance, market performance and industry-adjusted performance) influence firm's risk-play.

Corporate governance drivers and firm's risk-play:

Although there is no optimal board-size for heterogeneous firms in a country context, size of the board affects firm's policy choices, and thereby firm's risk-play and firm-value (see Coles et al., 2008; and Guest, 2009). The standard argument is that larger the board less effective it is at monitoring management (Hermalin and Weisbach, 2003; Jensen, 1993). However, we find mixed empirical evidence (Aebi et al., 2012). Several studies observe that we need larger boards in large organisations to reflect complexities of their business models, to increase pool of expertise and resources available, and to increase the potential of establishing contacts with diverse customers and depositors (Dalton et al., 1999). Extending this idea, Cheng (2008) shows that US firms with larger boards are associated with lower performance volatility. Wang (2012) further documents that board size has a negative impact on investment decisions (i.e. managerial risk-taking), as well as subsequent firm-risk.

Board's diversity is also associated with better firm performance, quality of earnings and/or lower risk-taking propensity by managers. There are several theoretical motives (see Fama, 1983; and Kumar and Sivaramakrishnan, 2008) as to why greater independence of directors may be beneficial to effectiveness of the board. One of the most influential arguments emphasises the role of incentives that independent directors have to protect their reputation (see Fama, 1980) in the market for independent directorships. This would encourage them to restrict firms and its managers to take innovative searches and thereby lower firm-risk and managerial risk-taking (i.e., firm's risk-play) (Aebi et al., 2012; Ellul and Yerramilli, 2013; Pathan, 2009). Therefore, our ***third hypothesis*** is:

H3: Corporate governance drivers influence firm's risk-play.

Shareholding pattern drivers and firm's risk-play:

Although, large body of literature documents that agency conflicts resulting from a separation between ownership and control do indeed affect firm-decisions (e.g., firm restructuring, divestment and mergers), one issue that remains largely unexplored is the impact of shareholders' identity/pattern on firm's risk-taking, as the latter being a fundamental driver of firm-performance and growth (Bromiley, 1991; John et al., 2008). Here, we seek to identify whether ownership pattern has a significant and sizable impact on earnings volatility as well as its normal effect on firm-outcomes through strategic decisions, i.e., managerial risk-taking.

Prior research only focuses on institutional drivers of firm's risk-taking (John et al., 2008; Acharya et al., 2011; Li et al., 2013) or on the link between risk-taking and shareholder diversification/concentration (Faccio et al., 2011) for publicly traded firms. However, we adopt an alternative perspective and examine the impact of promoters and foreign owners and non-promoter foreign shareholdings on firm-risk and managerial risk-taking behaviour. We argue that foreign owners who are holding largest block either in promoter capacity or as FIIs in Indian firms are more likely to undertake capital budgeting decisions (so capital intensity ratio would also be high) that would increase earnings volatility (i.e., riskier projects). Foreign owners/investors seek to improve firm's operating performance might also implement innovative searches such as introducing new production technologies and/or tightening controls on production, that would also raise uncertainty of firm's income streams.
In addition, foreign ownership fosters improvements in firm-level corporate governance than would local investors (Ferreira and Matos, 2008). Better governance would also in turn positively impact firm's risk-taking (John et al., 2008). Foreign investors in privatized firms also seek to enhance diversification through their international investments. This diversification would then most likely foster firm-risk and managerial risk-taking (i.e. firm's risk-play) as evidenced in Faccio et al. (2011). Therefore, our ***fourth and fifth hypothesis*** is:

H4: Higher promoter shareholdings influence firm's risk-play.

and

H5: Higher foreign shareholdings (promoter and/or non-promoter FIIs) influence firm's risk-play.

Fundamental valuation drivers and firm's risk-play:

Firms typically have heterogeneous alternative investment opportunities. Hence, corporate governance's and shareholding identity/pattern's impact on firm-risk and managerial risk-taking would not be the same for all firms. In fact, we argue that negative effect of a large board should be weaker for high-growth firms, but more severe for low-growth firms (see Nakano and Nguyen, 2012). Similarly, positive effect of foreign shareholding pattern should be comparatively less strong in a high-growth firm than a low-growth peer has. As a result, a high-growth firm would exhibit a higher market value (so price-to-book value would also be higher) together with a high-risk profile. This implication fits well with findings from Coles et al. (2008) that larger boards can add value in some circumstances even though their impact is considered typically negative (Yermack, 1996; Guest, 2009). In addition, a high-growth firm enjoys higher market share and mostly satisfies investors by higher dividend pay-outs.

Field studies using survey data (e.g., Brav et al., 2004) provide compelling evidence that firm-risk can shape dividend policy. Venkatesh (1989) also argue that higher level of firm-risk causes a reduction in firm's willingness to discharge cash through dividend payments. Therefore, in choosing dividend levels, managers strategize in a way to sustain future earnings with a high degree of certainty. This suggests that dividend payments should be inversely related to firm-risk and managerial risk-taking (i.e. firm's risk-play). Myers and Majluf (1984) also contend that managers might also have to choose between dividend payments and capital expenditures (investments) which is also used here as a proxy of managerial risk-taking. Therefore, our ***sixth hypothesis*** is:

H6: Fundamental valuation drivers (high-growth, increasing market-size, low dividend-pay-outs and increasing P/BV) influence firm's risk-play.

Firm-characteristics drivers and firm's risk-play:

Empirical studies (see Fisher and Hall, 1969; Hurdle, 1974; Lant and Montgomery, 1987; Lehner, 2000; Coles et al., 2008; Guest, 2009; John et al., 2008; Acharya et al., 2011; Aebi et al., 2012; Nakano and Nguyen, 2012; Ellul and Yerramilli, 2013; Li et al., 2013; etc.) show that firm's characteristics act as catalysts to main conclusions drawn. In this context, Hermalin and Weisbach (2003) argue that risky external environment can shape firms risk-taking based on its heterogeneous characteristics. Here, we have incorporated impact of external environment by industry performance variable under psychological drivers.

We have also incorporated age, size, leverage and liquidity to proxy the impact of individual firm's heterogeneous characteristics on its risk-play. Age is the basic firm-characteristics which impacts firm-risk and managerial risk-taking through the indirect route of '*market power*' or market size (is taken as a fundamental valuation driver here) in terms of its size, liquidity and leverage. If '*market power*' is assumed to have an impact on firm's risk-play, and as it is only logical to assume older firms which has survived for some length of time and large firms which has size to play with, do have higher '*market power*', then older and large firms would exhibit evidence of lower risk (see Venkatesh, 1989). Pecking order theory (Myers, 1984) and Ferreira and Vilela's (2004) free cash flow hypothesis prove this theoretically. However, this contradicts with the liquidity perspective, i.e., large firms hold less cash due to their greater access to capital markets (see Subramaniam et al., 2011) because of their strong information symmetry and thereby vulnerable to risk (see Opler et al., 1999; and Subramaniam et al., 2011). On the other hand, expectation is that small firms would hold relatively more cash to avoid financial distress/failures. This implies a risk-seeking attitude for large firms and an opposite approach by their small counterparts. Opler et al. (1999) also find that firms with strong growth opportunities (also a fundamental valuation driver here) hold more cash. Hannan and Freeman (1984) and Nelson and Winter (1982) also point out that with increasing firm's age, CEOs feel more comfortable about following established routines and limit innovative search behaviors (Lavie and Rosenkopf, 2006). Therefore, overall, we argue that old firms take lower risks than their younger counterparts do. Large organizations also normally have difficulty undertaking dramatic changes (Aldrich, 1979), as they are more likely to have established routines and hierarchical structures (Nelson and Winter, 1982). Therefore, overall, we also argue that small firms are more risk seeking than large organisations.

Firms also can use borrowing as a substitute for holding cash (i.e. liquidity) because leverage can act as a proxy for the ability of firms to issue debt (John, 1993). This implies higher risk-taking by firms and managers. Baskin (1987) argues that cost of funds used to invest in liquidity increases as the ratio of debt financing increases, which would imply a reduction in cash holdings with increased debt in capital structure. Thus, in both ways it shows risk-seeking attitude of these firms. Therefore, Opler et al. (1999) and Ozkan and Ozkan (2004) predict that there is a negative relation between firm's cash holdings and its leverage in line with the pecking order theory (Myers, 1984) and the free cash flow hypothesis (Ferreira and Vilela, 2004). Venkatesh (1989) also puts that simple financial analysis can demonstrate a positive relation between financial and operating leverage and firm-risk. Firms with more resources (i.e. slack) tend to have more leeway to indulge in exploratory activities (Cyert and March, 1963), allowing their CEOs more discretion (Hambrick and Finkelstein, 1987). Therefore, we also

argue that excess liquidity increases managerial risk-taking and firm-risk (i.e. firm's risk-play). Therefore, our ***seventh and final hypothesis*** is:

Firm-characteristics [age (young), size (small), liquidity (low and high both) and leverage (high) say positively] influence firm's risk-play.

Data, variables descriptions and methodology:

Data:

We start with CNX NIFTY 500 firm's data collected from *Centre for Monitoring Indian Economy's* (CMIE) prowess database. Nevertheless, data are available for approximately 379 firms for all study years starting from 1999 up to 2017. However, we exclude financial services companies (including banks and NBFCs) for this study because of their normal prohibition in financial literature. Thereby, finally we investigate 269 firms comprising of 5,111 firm years for all 23 variables. This is in line with the requirements of the SEM as sample size is approximately 11 times as many cases as variables.

Variable descriptions:

Table 1 explains the variables (under different constructs) used in this study.

Table 1: Description of variables

This table explains the dependent and independent variables (under different constructs) undertaken in this study. The firm-risk (FR) is proxied by income stream risk and accounting beta risk and managerial risk-taking (MR) is represented by capital intensity ratio and market risk. These are all dependent variables of this study. The 19 independent variables (drivers/antecedents) as constructed here are classified into 7 broad heads (constructs) in accordance with their nature. The heads are shown in parentheses after each variable.

Variables	Description
Income stream risk (FR)	*Ex-post* standard deviation (σ) of individual firm's actual return on assets (ROA) for preceding 5 years in year t
Accounting beta (β) risk (FR)	[(Firm's actual ROA in year t – Mean ROA of the firm for all years)×(Actual ROA mean for all firms in year t – Actual ROA mean for all firms [representing CNX NIFTY 500 Index here] for all years)]× (Actual ROA mean for all firms in year t – Actual ROA mean for all firms [representing CNX NIFTY 500 Index here] for all years)^2
Capital intensity risk (MR)	[(Average total assets/Sales)*100] in year t [average total assets = (total assets in year t-1 + total assets in year t)/2]
Market risk (MR)	(Annualised monthly market return of a firm in year t-1 – Annualised monthly market return of the benchmark index [CNX NIFTY 500 Index here] in year t-1)
Operating performance (PD)	Actual ROA [(PAT/Average total assets)*100] in year t
Market performance (PD)	Annualised monthly market return {[((1 + R)^12) - 1] x 100} of a firm in year t
Cash performance (PD)	[(OCF/Average total assets)*100] in year t [average total assets = (total assets in year t-1 + total assets in year t)/2]
Aspiration (PSYD)	$ASP_t = ([ROA_{t-1} – ASP_{t-1}$ (i.e. $ROA_{t-2})] + ROA_{t-1})$
Expectation	$EXP_t = ([PE_{t-1} – EXP_{t-1}$ (i.e. $PE_{t-2})] + PE_{t-1})$

(PSYD)	
Industry performance (PSYD)	[Firm's actual ROA in year t (ROA_t) - Mean ROA for all firms in a similar industry in year t-1 ($IndROA_{t-1}$)]
Board size (CGV)	*Logn* number of directors in the board in year t
Board independence (CGD)	% of independent directors to total number of directors in the board in year t
Promoter(s) holdings (SHPD1)	% of shareholdings by the promoter(s) in year t
Foreign promoter(s) holdings (SHPD2)	% of shareholdings by the foreign promoter(s) in year t
Non-promoter FIIs holdings (SHPD2)	% of shareholdings by the non-promoter FIIs in year t
Market size (FVD)	*Logn* net sales amount in year t
Growth opportunities (FVD)	% change in investment in total assets in year t-1 (i.e.ΔTA_t = [{(TA_t -TA_{t-1})/TA_{t-1}}*100])
Dividend payout (FVD)	[(Equity dividend/PAT)*100] in year t
P/BV (FVD)	Market capitalisation in year t/Book value of assets in year t (scaled in average)
Age (FCD)	*Logn* (Year t – Year of incorporation of the firm)
Size (FCD)	*Logn* average total assets in year t [average total assets = (total assets in year t-1 + total assets in year t)/2]
Leverage (FCD)	Debt/Average total assets in year t [average total assets = (total assets in year t-1 + total assets in year t)/2]
Liquidity (FCD)	*Logn* average [{opening balance + closing balance}/2] of cash balance and short-term investments (i.e. cash and cash equivalents) in year t

Note 1: All market return calculations are undertaken on adjusted closing price basis.
Note 2: All absolute amount figures have been log normalised.
Note 3: PD – Performance drivers; PSYD – Psychological drivers; CGD – Corporate governance drivers; SHPD1 & 2 – Shareholdings pattern drivers 1 & 2; FVD – Fundamental valuation drivers; FCD – Firm characteristics drivers.
Note 3: PAT – Profit after tax; OCF – Operating cash flow; ASP_t - Aspiration in year t; EXPt - Expectation in year t; PE - Price-earnings ratio; FIIs – Foreign institutional investors; TA – Total assets; P/BV – Price-to-book value.

The unpredictability in a firm's income stream is a result of its risk and managerial risk-taking behaviour (Bromiley, 1991). Therefore, we measure firm's risk from the income stream variability and market-adjusted return variability (i.e. through accounting β) viewpoints under this study. We also incorporate managerial problematic and innovative searches (risk-taking) by market risk and capital intensity risk proxies.

In the first case, firm-risk (henceforth ?) is measured as *ex-post* standard deviation of individual firm's actual return on assets (i.e. ROA) for preceding 5 years on a rolling basis, i.e.,

$$\sigma(ROA)_t = \sqrt{\sum_{j=t-5}^{t-1} \frac{(ROA_j - \overline{ROA})^2}{n - 1}} \quad (1)$$

Where, t = 2004, 2005,……., 2017

We also introduce here accounting beta to proxy firm-risk to surrogate the degree of co-variability of a firm's earnings and earnings of the market (i.e. other firms) (see Elgers, 1980). This is a non-market measure of systematic risk and economy-wide factors duly affects it, as opposed to unsystematic component that relates to other firm-specific factors. We calculate this in line with Bowman (1979) (see table 1). Therefore, by taking market-adjusted accountingbeta along with firm-specific income stream risk, we make our study more robust.

We also measure managerial risk-taking by incorporating a market risk variable which we calculate as stock market-adjusted stock return by taking the difference between firm's monthly stock return and monthly return on the value-weighted market index (i.e. CNX NIFTY 500 Index) (see table 1). This surrogates the risk the managers are taking to improve their stock performance (to make investors happy). Second measure used here to proxy managerial risk-taking is capital intensity ratio (see table 1). It increases managerial risk-taking in two ways (Shapiro and Titman, 1986). If capital inputs are less variable than labour inputs in short-run, managers of a firm choosing to produce a given output with large amounts of capital and low amounts of labour increases its fixed costs and lowers its variable costs. The firm consequently would experience larger variations in profits/income if demand fluctuates. Additionally, managers using large amounts of capital (innovative searches) run a high risk of capital obsolescence - the possibility that technological change would make its capital investment worth little or nothing. Here, we calculate capital intensity risk as ratio of total assets to sales in line with Miller and Bromiley (1991).

We discuss the independent constructs (see table 1) in detail while formulating hypotheses in the previous section.

Methodology

We have used Structural Equation Modelling (SEM) because the different constructs used in the study are latent constructs (e.g., performance drivers, psychological drivers, corporate governance drivers, shareholding pattern, etc.). This technique has the capacity to combine empirical observations with relations among unobserved constructs into a single integrated system. We have the following research questions like - do the performance drivers have any effect on firms' risk play? How does the different psychological drivers affect the firms' risk play? Is there any effect of corporate governance drivers on firms' risk play? etc. To answer these questions, we need a unified model provided by SEM to investigate the relationships among multiple dependent and independent variables.

Another reason for SEM to be the preferred model here compared to methods of conventional multiple regressions is that SEM's typically disjointed nature to generate separate and individually distinct coefficients. The SEM technique permits checking and examining a complete model by generating goodness-of-fit statistics and assessing the overall fit (Gefen et al., 2011; Ho and Shieh, 2006).

Accordingly, we employ the SEM to test unidimensionality of the constructs and to analyze the drivers (i.e. antecedents) of firm-risk and managerial risk-taking. We use the SEM here because of its several privileges over other approaches (see e.g. Gefen et al., 2011; and Byrne, 2010).

We analyze the scales after collection of data to test purification, reliability, unidimensionality and validity of them. 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. Under purification, we delete variables showing scores lower than 0.5 with respect to constructs to which it belongs, unless there is a compelling reason to keep them in the respective constructs. We verify the convergent validity or unidimensionality of each construct, modelled in the reflective mode, by examining their 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). We ascertain the discriminant validity of constructs by comparing the AVE scores of the two constructs, with the square of the correlation between the two constructs. If both AVE values are larger than the square of the correlation, we consider constructs to show discriminant validity (Fornell and Larcker, 1981).

We also check the multivariate normality of all the variables used here by Shapiro-Wilks (S-W) test and Kolmogorov-Smirnov (K-S) test as well as by skewness and kurtosis. We also test the linear relationship by Box M test value (i.e. 270.61) with a p-value is 0.056. We use Mahalanobis D-square and find that our dataset is free from outlier. The value of D^2/df comes out to be 3.05 for all the items under different constructs. We test one-way causality through Granger's (1969) test pre-modelling and find the observed covariance to be true. Therefore, our dataset fits for the SEM.[3]

[3] We do not include all results here for the sake of brevity.

Results:

Descriptive statistics results

Table 2: Descriptive statistics results

This table provides mean, standard deviation, maximum and minimum values of 269 Indian firms studied here (see table 1 for description of these variables).

Variables	Mean	SD	Maximum	Minimum
σ(ROA) (%)	0.41	2.72	23.01	0.41
Acct. β	-4.74	3.15	29.08	-4.74
Capital intensity ratio (%)	0.01	8.83	127.36	0.01
Market risk (%)	-6.33	2.49	13.05	-6.33
ROA (%)	-6.87	6.02	34.21	-6.87
Market return (%)	-2.7	3.15	31.12	-2.7
Cash return (%)	0.02	14.16	165.99	0.02
Aspiration (%)	-6.77	6.12	34.48	-6.77
Expectation (%)	-0.6	21.92	359.69	-0.6
Industry performance (%)	-19.61	5.15	18.60	-19.61
Board size (logn)	0.56	0.11	1.33	0.56
Board independence (%)	0.01	9.82	65.76	0.01
Promoters holdings (%)	16.86	15.89	96.65	16.86
Foreign promoters holdings (%)	0.01	23.39	85.83	0.01
Non-promoter FIIs holdings (%)	0.02	7.90	38.91	0.02
Net sales (logn)	0.01	0.66	6.48	0.01
% change in TA	-5.16	16.29	197.85	-5.16
Dividend pay-outs (%)	0.01	36.06	490.00	0.01
P-to-BV	-1.3	3.91	34.83	-1.3
Age (logn)	1.26	0.20	2.19	1.26
Average TA (logn)	3	0.66	6.46	3
Debt/TA (%)	0.01	17.43	87.01	0.01
Average cash & CE (logn)	-0.79	1.21	5.25	-0.79

Table 2 provides descriptive statistics results of the variables undertaken in this study. Results show that cash performance, expectation (i.e. PE multiples), promoters and foreign promoters holdings, growth opportunities (based on TA), dividend pay-outs and leverage of Indian firms are highly volatile which implies riskiness of these firms in wider contexts. This substantiates the investigation of firm-risk and managerial risk-taking from different constructs' impact as done here.

Correlations results

Table 3 indicates the co-relationships among the studied variables. It is evident that operating performance, aspirations, industry performance, growth opportunities and price-to-book value significantly positively influence firm-risk. On the other hand, managerial risk-taking has significant positive association with market returns, growth opportunities and leverage of the sample firms. Board's size, board-independence, market size, age, size and leverage of a firm has significant negative association with income stream uncertainty and/or accounting beta, whereas aspiration, promoters' shareholdings, price-to-book value, age, size, liquidity of the firm has significant negative impact on market risk and capital intensity risk proxies. Results also support interrelationships in between variables, which formulate different constructs here. All these results further substantiate our investigation objectives under this study.

Table 3: Correlations results

This table presents the correlations results among the studied variables. Here, ISR stands for income stream risk, ACCβ indicates accountin stands for capital intensity ratio, ROA means return on assets, MRE implies market return, CP denotes cash performance, ASP stands for a INDP indicates industry performance, BS represents board size, BI stands for board independence, PSH means promoters shareholding shareholdings, NPFIIs indicates non-promoter FIIs holdings, MS implies market size, GO stands for growth opportunities, DPR represen price-to-book value, AGE indicates age of the firm, SIZE implies size of the firm, LEV represents leverage of the firm, LIQ stands for liqu

	ISR	ACCβ	MR	CIR	ROA	MRE	CP	ASP	EXP	INDP	BS	BI	PSH	FPSH	NPFIIs	MS	GO	DP
ISR	1																	
ACCβ	.240***	1																
MR	.003	-.100*	1															
CIR	.127**	-.002	-.137**	1														
ROA	.205***	.071	-.074	-.092	1													
MRE	.003	-.100*	0.086***	-.137**	-.074	1												
CP	.010	-.013	-.009	-.014	-.015	-.009	1											
ASP	.191***	.063	-.064	-.100*	.791***	-.064	-.015	1										
EXP	-.002	.073	.008	.098	.007	.008	-.007	.008	1									
INDP	.120**	.109*	-.085	-.028	.668***	-.085	-.008	.659***	.078	1								
BS	-.281***	.195***	-.064	.027	-.028	-.064	.008	-.024	.123**	-.004	1							
BI	-.029	-.163***	.086	.038	-.053	.086	.065	-.060	.014	-.138**	.167***	1						
PSH	.038	.099	-.114*	.085	.105*	-.114*	.008	.117*	.028	.177***	-.054	-.389***	1					
FPSH	.026	.034	-.033	-.077	.168***	-.033	-.050	.164***	.019	.155**	-.080	-.365***	.226***	1				
NPFIIs	-.076	.080	.043	.022	.137**	.043	-.032	.127**	.065	.114*	.278***	.212***	-.497***	-.121**	1			
MS	-.246***	.241***	-.075	-.162***	.013	-.075	.021	.021	.118*	.055	.538***	-.127**	-.013	-.067	.300***	1		
GO	.177***	.054	-.018	.262***	.130**	-.018	-.055	.107*	.048	.104*	-.254***	.111*	.022	-.105*	.056	-.206***	1	
DPR	-.004	.080	-.034	-.023	.069	-.034	-.051	.063	-.044	.070	.038	.006	-.032	.078	.051	.017	-.106*	
P/BV	.162***	-.081	-.133**	-.033	.454***	-.133**	-.078	.470***	.022	.460***	-.116*	-.157***	.262***	.283***	-.010	.004	.048	.11
AGE	-.111*	.095	-.105*	-.062	-.077	-.105*	.030	-.072	-.085	-.041	.135**	.036	-.080	.129**	-.060	.122**	-.281***	.10
SIZE	-.158***	.258***	-.124**	.063	-.098	.124**	-.019	-.091	.130**	-.031	.477***	-.092	.032	-.131**	.265***	.670***	-.039	-.0
LEV	-.082	-.103*	.133**	.054	.577***	.133**	-.008	.566***	-.009	.515***	-.057	.237***	-.100*	.380***	-.032	.025	.045	-.0
LIQ	-.031	.145**	-.138**	.027	.265***	-.138**	-.060	.267***	.070	.264***	.339***	.036	-.007	-.137**	.254***	.463***	.019	-.0

***** Accepted at 1% level of significance; ** Accepted at 5% level of significance; * Accepted at 10% level of significance.**

Reliability and validity of measures results

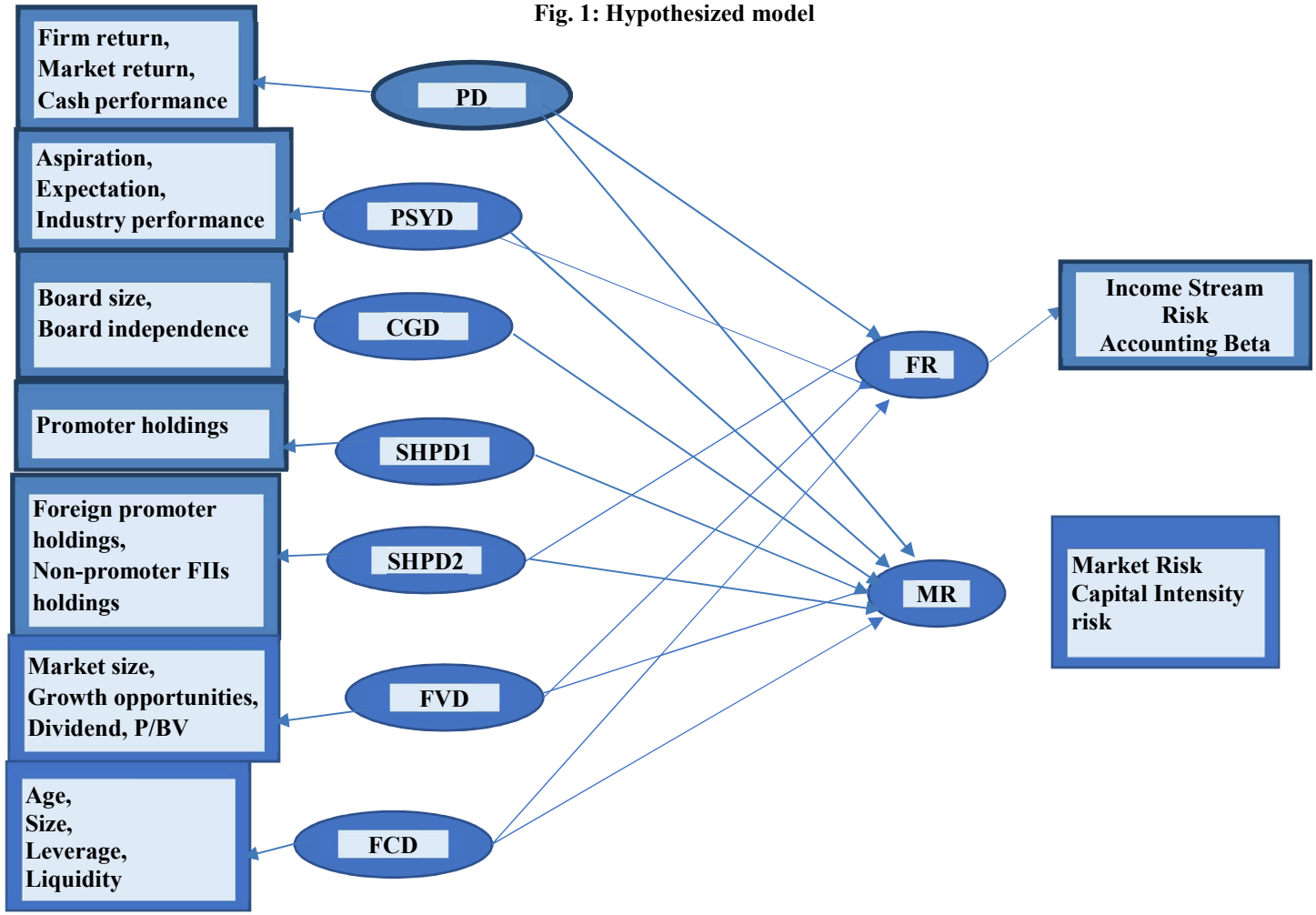
Table 4: Standardized loadings and composite reliability (confirmatory factor analysis [CFA])

This table provides results of standardised loadings, composite reliability and the average variance extracted under the CFA of the constructs and variables formulating these constructs.

Constructs and indicators	Standardized loadings	t-value	Composite reliability	Variance extracted
Performance drivers (PD)			**0.82**	**0.54**
Operating performance (ROA)	0.781	3.44		
Market performance	0.713	4.13		
Cash performance	0.881	4.66		
Psychological drivers (PSYD)			**0.76**	**0.59**
Aspiration	0.776	5.77		
Expectation	0.811	6.57		
Industry performance	0.791	9.11		
Corporate governance drivers (CGD)			**0.78**	**0.51**
Board size	0.703	9.08		
Board independence	0.772	1.99		
Shareholding pattern drivers (1) (SHPD1)			**0.80**	**0.61**
Promoter holdings	0.720	9.01		
Shareholding pattern drivers (2) (SHPD2)			**0.72**	**0.64**
Foreign promoter holdings	0.710	12.34		
Non-promoter FIIs holdings	0.709	23.11		
Fundamental valuation drivers (FVD)			**0.89**	**0.52**
Market size	0.779	12.65		
Growth opportunities	0.761	13.44		
Dividend pay-out	0.703	18.11		
P/BV	0.778	12.13		
Firm characteristics drivers (FCD)			**0.78**	**0.61**
Age	0.704	11.56		
Size	0.761	10.32		
Leverage	0.776	11.65		
Liquidity	0.773	10.44		
Firm-Risk (FR)			**0.82**	**0.56**
Income Stream Risk	0.771	7.88		
Accounting Beta Risk	0.701	9.76		
Managerial Risk-taking (MR)			**0.77**	**0.60**
Capital Intensity Risk	0.770	10.98		
Market Risk	0.810	11.11		

Notes: χ^2/df= 2.03, p-value<0.005, RMSEA = 0.020, GFI = 0.812, CFI =0.831, NFI=0.821.

Fig. 1: Hypothesized model



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We have used AMOS 20 for the SEM here. In the first stage of data analysis, our first objective is to measure the convergent validity of nine different constructs taken here, and, how they are distinct from each other (i.e. discriminant validity). Therefore, we conduct a confirmatory factor analysis (CFA) based on 23 variables to check fitness of measurement model having 9 constructs of the theoretical model given in Fig.1. Tables 4 and 5 are showing results of CFA. For our measurement model, values of different indices with ($\chi 2/df$) value of 2.03 (p <0.005), *RMSEA*<0.05; *CFI*=0.831, *GFI= 0.812* and *NFI*=0.821. Thus, it represents a good model fit and all are acceptable (i.e. hypotheses results).

We examine the convergent validity by looking at each item loadings and the AVE. From table

4, it is evident that factor loadings for each construct are highly significant ($p< 0.05$, $t> 1.96$) (see Anderson and Gerbing, 1988) and their values are ranging from 0.6 to 0.8, which signifies convergent validity of the constructs. Value of composite reliability exceeds minimum value of 0.7 (Holmes-Smith, 2001) and the AVE surpasses threshold value of 0.5 (see Anderson and Gerbing, 1988).

Table 5: Discriminant validity measurement

This 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. It also incorporates mean and SD of the constructs. Here PD stands for performance drivers; PSYD represents psychological drivers; CGD implies corporate governance drivers; SHPD1 & 2 stands for shareholdings pattern drivers 1 & 2; FVD represents fundamental valuation drivers; and FCD stands for firm characteristics drivers. Also, FR stands for firm-risk and MR represents managerial risk-taking.

Test for DV	PD	PSYD	CGD	SHPD1	SHPD2	FVD	FCD	FR	MR
PD	1								
PSYD	0.489	1							
CGD	0.411	0.401	1						
SHPD1	0.541	0.511	0.501	1					
SHPD2	0.243	0.324	0.344	0.301	1				
FVD	0.441	0.541	0.501	0.411	0.551	1			
FCD	0.324	0.432	0.431	0.512	0.311	0.551	1		
FR	0.442	0.334	0.331	0.341	0.331	0.501	0.500	1	
MR	0.446	0.405	0.412	0.422	0.451	0.445	0.405	0.431	1
MEAN	5.50	5.13	5.19	5.46	5.55	5.61	5.05	5.88	5.67
SD	1.09	0.93	1.12	1.15	1.08	1.16	1.12	1.13	0.97

Table 5 shows the discriminant validity in which the squared correlation between the constructs is less than the AVE for each pair of constructs (Fornell and Larcker, 1981). This implies that each construct is distinct. The inter-correlation among the nine constructs are also significant ($p<0.05$).

Hypotheses testing results

Table 6: Hypotheses testing results

This table summarizes the hypotheses testing results based on t-value and significance at 1, 5 and 10% levels. Here PD stands for performance drivers; PSYD represents psychological drivers; CGD implies corporate governance drivers; SHPD1 & 2 stands for shareholdings pattern drivers 1 & 2; FVD represents fundamental valuation drivers; and FCD stands for firm characteristics drivers. Also, FR stands for firm-risk and MR represents managerial risk-taking.

Hypotheses	Critical value (t-value)	Decision (accept/reject)
H1: PD ⟶ FR	11.32**	**Accept**
PD ⟶ MR	9.11***	**Accept**
H2: PSYD ⟶ FR	2.11*	**Accept**
PSYD ⟶ MR	1.46	Reject
H3: CGD ⟶ FR	12.11**	**Accept**
CGD ⟶ MR	12.23**	**Accept**
H4: SHPD1 ⟶ FR	21.56**	**Accept**
SHPD1 ⟶ MR	5.60**	**Accept**
H5: SHPD2 ⟶ FR	3.12***	**Accept**
SHPD2 ⟶ MR	1.22	Reject
H6: FVD ⟶ FR	0.44	Reject
FVD ⟶ MR	0.96	Reject
H7: FCD ⟶ FR	12.54**	**Accept**
FCD ⟶ MR	2.11*	**Accept**

***** Accepted at 1% level of significance; ** Accepted at 5% level of significance; * Accepted at 10% level of significance.**

It is proposed in this study that performance drivers influence firm-risk and managerial risk-taking (**H1**). According to the results, the critical values (t-values) are11.32 at $p<0.05$ and 9.11 at $p<0.01$, hence our findings are significant in nature. It implies that firm's operating performance, market performance and cash performance all are significantly influencing its risk and managerial attitudes towards problematic and innovative searches. Results prove that psychological drivers (**H2)** i.e. aspirations, expectations and industry performance are only significantly impacting income stream risk and operating performance's systematic risk (i.e. accounting β) (t-value of 2.11 at $p<0.10$), but doesn't influence managerial risk-taking in the broader context. So, hypothesis 2 is only partially accepted. Board's size and its independent nature (**H3**) i.e. corporate governance drivers are also significantly influencing both firm-risk and managerial risk-taking with critical values of 12.11 and 12.23 (at $p<0.05$). Table 6 results also show that hypothesis 4 (**H4**) is accepted as t-values of 21.56 and 5.60 are significant at 5% level. Therefore, promoters' shareholdings volume influence managerial propensity to take risks and thereby the variability of income and systematic risk in relation to industry peers. However, it is found that foreign promoters and non-promoter FIIs holdings only influence firm-risk and not managerial risk-taking. This is due to the fact that hypothesis 5 (**H5**) is only partially accepted with critical values (t-values) of 3.12 (at $p<0.10$) and 1.22 (at $p>0.10$). Table 6 results do not show any impact of market size, growth opportunities, dividend pay-outs and P/BV (i.e. fundamental valuation drivers) on firm's risk-play. Hypothesis 6 (**H6**) is rejected under both cases with t-values of 0.44 and 0.96 (at $p>0.10$). However, interestingly, firm's characteristics drivers (age, size, leverage and liquidity) have a significant impact on firm-risk and managerial risk-taking. This is evident by the significant t-values of 12.54 (at $p<0.05$) and 2.11 (at $p<0.10$) which accept hypothesis 7 (**H7**).

Discussion

In this study, we find impact of performance (irrespective of operating, market and cash) on income stream variability (i.e. SD of past performance) and systematic deviation in firm's operating performance (i.e. accounting beta) from the overall context for all Indian firms in a

top-down basis. This adds value to the empirical literature (Bowman, 1980; 1984; Fiegenbaum and Thomas, 1985; 1988; etc.) which only examine the issue in a troubled-firms context. Our results significantly and from different angles (as we have also taken the stock market performance and cash performance along with firm's ROA [limitation in erstwhile literature]) prove our hypothesis that performance drivers critically influence firm's risk. Additionally, our results show that managerial propensity to searches (both problematic and innovative) in relation to firm's stock performance (market risk proxy) in comparison to overall markets to attract investors and searches via improving capital intensity ratio both are impacted by firm's performance.

We could not prove our initial observation that aspiration-expectancy gap for all firms in terms of their actual performance (ROA here), market performance and industry-adjusted performance would induce managers to resort to innovative searches. However, these drivers influence firm-risk by making operating performance volatile and increasing systematic deviation from the industry-leaders i.e. sound Indian firms. We may also confer that, as age-old empirical literature (see Cyert and March, 1963; and March and Shapira, 1987 [behavioural theory]; Kahneman and Tversky, 1979 [prospect theory]) points out that managers of poor firms (below target or reference returns level) would be more risk-seeking than their superior counterparts, hold true in Indian context (in line with Lant and Montgomery, 1987). Although we prove that all psychological drivers used here are relevant to influence firm-risk.
One of the most critical findings of our study is impact of corporate governance drivers (board-size and -independence) on both firm-risk and managerial risk-taking at the same time in an emerging market context [like Wang (2012) in a developed market context]. Empirical literature occasionally document Board-size's negative influence on managerial risk-taking (see Sah and Stiglitz, 1986; 1991) and positive influence on performance volatility (see Cheng, 2008) across developed markets. However, our study results significantly and overwhelmingly prove influence of board size on both firm-risk and managerial risk-taking in the same direction in an emerging market context i.e. India. We also prove the impact of board-independence as a CGD in influencing organisational risk and innovative searches by Indian managers (thereby contradicting with Aebi et al., 2012; Ellul and Yerramilli, 2013; and Pathan, 2009).

Our results also show that promoters' shareholdings directly influence firm's risk-play. This is because promoters-shareholders do initiate risks to cater performance and growth for firms (Bromiley, 1991; John et al., 2008). However, results show that foreign promoters and non-promoter foreign holdings (FIIs) only influence income stream variability and systematic risk of operating performance, and not innovative searches by managers. Therefore, it is evident that our results do not substantiate overall results of John et al. (2008) and Faccio et al. (2011). Results here also prove that fundamental valuation drivers i.e. market size, growth opportunities, dividend pay-outs and P/BV of Indian firms has no role to play in influencing firm-risk and managerial risk-attitudes. So, unlike Myers and Majluf (1984), Yermack (1996), and Guest (2009) we could not find any counter-party influence of value and growth drivers of Indian firms on their risk-profiles and manager's searches which itself is quite intriguing looking at other study results here.

On the contrary, it is interesting to observe significant influence of firm's characteristics drivers on an overall basis (i.e. age, size, leverage and liquidity) on both firm-risk and managerial risk-taking in line with Hermalin and Weisbach (2003), Lavie and Rosenkopf (2006), etc. This, however, contradicts with the mixed results of most of the erstwhile empirical studies including Myers (1984), Venkatesh (1989), Opler et al. (1999), Ferreira and Vilela (2004), Subramaniam et al. (2011), etc. So, we can comment in line with our presumed hypothesis that young firms,

small firms in need of growth, explore innovative searches; high and low-liquidity and high-leverage firms explore both problematic and innovative searches; which in turn impacts income stream variability and generates higher systematic risks in operating performance for Indian firms within normal business environments.

Conclusion

Determinants and consequences of firm-risk are examined in the US and other developed markets worldwide (see e.g., Bargeron et al.,2010; Faccio et al., 2011; John et al., 2008; Li et al., 2013; etc.). However, empirical literature pays little attention to these issues in emerging markets contexts. In most of these studies firm-risk and managerial risk-taking are inaccurately used interchangeably although practically they should be distinguished. Also, scholarly research in strategy, finance and other organisation disciplines have generally focused on identifying factors that explain company performance without serious consideration of drivers (i.e. antecedents) of firm-risk and managerial risk-taking except in relation to systematic risk. We fill all these literature gaps by examining firm-risk (proxied by income stream risk and accounting beta) and managerial risk-taking (proxied by market risk and capital intensity ratio) under one model by the most advanced SEM to find out the antecedents of these for Indian firms i.e. in an emerging market context.

Our results prove that present firm-performance, corporate governance, promoter's shareholding and institutional characteristics are driving both firm-risk and managerial risk-taking. These findings contribute to the existing scant firm-risk and managerial risk-taking literature in regard to their antecedents in the emerging market contexts. We extend the importance of firm performance (see Massini et al., 2005; DasGupta and Deb, 2020; etc.); corporate governance (see Brick and Chidambaran, 2008; Bhagat et al., 2015; etc.); concentration of promoter's shareholdings (Faccio et al., 2011; and Ferreira and Matos, 2008); and firms' characteristics (see Ellul and Yerramilli, 2013; John, 1993; Venkatesh, 1989; etc.) in driving firm's overall risk-play i.e. both firm-risk and managerial risk-taking. However, fundamental valuation drivers have no role to play in influencing income-variability, systematic operating risks and managerial risk-attitudes. Psychological drivers and foreign shareholdings act only as a catalyst of firm-risk. The distinctness of our dependent variables and vastness of our independent constructs has made this study more robust.
Future studies can examine the model tested here in a cross-country context and under different situations and market cycles. The external environmental impact like economic, political, regulatory, etc. influence firm-risk and managerial risk-taking combinedly can also add value to this study results.

Our results would be of immense help to firm-insiders (managers and promoters), analysts and investment consultants, market regulators and other firm-stakeholders who take active interest in Indian firms or emerging countries firms. This is as all these stakeholders take active interest in firm-specific associated risks especially in the current era of promoters' pledged securities, financial distress and fall-outs by Indian companies, etc. Our results clearly document the firm's internals that they can assess and/or look into to take their distinctive decisions in different contexts. Study results can also promulgate future researchers to examine the proposed model in other emerging countries or in cross-country contexts.

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