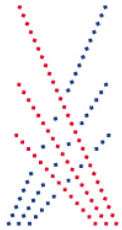

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ABSTRACT

Institutions are perceived by investors, as semblance of stability against uncertainties, a mechanism to facilitate transactions and a repository of investment security. Therefore, when institutions are exposed to risks, that have contagion potentials, how would that affect investor preferences? Using 2,304 (lagged) investment-month data points, from Indian commercial banks facing unprecedented NPA related liquidity cum credit risks, and covering 92 banks in aggregate for 145 months, we find that investment preferences are contingent upon identity of the investors (peers or commoners), ownership (state owned or privately owned) and preferences based on psychological contracts fostered by the investors, regarding duration and size of investments. We present novel insights into the risk return investment preferences in the context of Indian Banking Industry.

Keywords: *Institutional risk, investor preference, ownership, psychological perception, Indian Banks*

INTRODUCTION

Institutions are defined as humanly devised informal constraints/formal rules that structure political, economic and social interactions, foster order and reduce uncertainties in transactions (North, 1991). Institutions internalize exogenous uncertainties, and convert those to manageable risks providing a general perception of safety and security to investors (Coleman, 1986; Columba, et. al,, 2010). The ability of institutions to absorb uncertainties however is not infinite (Acemoglu, Ozdaglar, & Tahbaz-Salehi, 2015; Ashraf, 2017). They face distress in their incremental evolution; they adapt, undergo institutional changes (Greif & Laitin, 2004) and rarely, under major upheavals (Fratzscher, König, & Lambert, 2016), even deinstitutionalize. How do investors, who have unilateral psychologically contracted assumptions, behave when institutions face distress?

Literature has documented different stages of institutional evolution (Brousseau, et. al,, 2011). Specific emphasis are given on factors causing institutional changes (Brousseau, Garrouste, & Raynaud, 2011), deinstitutionalization process (Oliver, 1992; Fakhoury & Priebe, 2002) and regulatory responses during institutional crises (Cukierman, 2013; Haldane & May, 2011). Therefore, focus has been more on the later stage of institutional evolution. Literature provides scope to investigate the early stage distress, when institutions start experiencing risky situations with contagion potential, and the effect of such situations on investors. In general, early signs of institutional risks go unobserved and excepting for some dissidents (Maguire & Phillips, 2008), remain so till imminent collapse (Riaz, 2009). Alternatively, continued trust by stakeholders, in distressed institutions can help in the recovery process (Rothstein & Stolle, 2008). Therefore investor preference to stay invested may lead to timely recovery. Timely recovery pre-empts need for institutional change and on. Consequently, we believe it is important to undertake a granular investigation of investor preferences towards systemic institutional risks with contagion potentials.

Literature posits investors to spread and hedge their investments (Sharpe, 1964). Spreading investments to heterogeneous business prevents simultaneous convergence to unfavourable outcomes. Preferring heterogeneous returns makes investors as risk takers. In contrast, institutions reduce uncertainties by design (North, 1991). Therefore are investors, who prefer institutions, ab initio risk averse; or do other contingent factors influence their risk appetite? Assuming that an investor can invest within and across multiple institutions, with varied returns, then they can be considered as risk takers. However, if the invested institutions suddenly show distress, then the investors, who have entered into frequency based transactions with them, may revisit their investment decisions based on contingencies involving self and institutional characteristics. This paper deals with investor preferences, to institutional risks, under contingencies.

For the purpose of this paper, we define institutional risks as serious and systemic problems, accumulated incrementally in business to crisis proportions, endemic to socio-economic institutions that have contagion potentials. Our definition is consistent with the conceptualization of Li, Hsu, & Qin, (2014). Commercial banks, dealing with public money are economic institutions. Any credit or solvency related risks, above normal levels, accumulating from unattended business risks, with contagion liquidity risks to stakeholders (Schoenmaker 1996; Diamond and Rajan 2005), constitutes institutional risks. Institutional risks, therefore operate at a higher level and have a higher magnitude than organizational risks. Organizational risks are defined as ex-post risks to organization's cash flows as a consequence of ex-ante choices with uncertain outcomes, exercised by managers, the latter constitutes managerial risks (Hoskisson et. al, 2017). One way of differentiating the three risks, is to identify the boundary condition. Thus managerial risk primarily affects the individual. A rare secondary consequence can be its (adverse) effect on organization. Organizational risks are predominantly restricted to financial health of the

organization and do not necessarily spill over the boundary of the firm. In contrast, institutional risks spills over and spreads contagiously across the entire network and even affect distant stakeholders and indirect investors. An unsustainable level of non-performing loans/assets (NPA) can jeopardize household savings, starve economy of liquidity, trigger trust deficit in fiat currency and thus qualify as institutional risks. A run on the bank is a contagion outcome of liquidity cum systemic institutional risk (Calvo, 2012).

Such unsettling situations that fundamentally alter stability assumptions can change investor preferences. However risk-return paradigm also posits that investors, if suitably compensated, can take more risk. Shall this logic hold for institution centric investors? Or will they be too shaken to neglect potential losses (Salant, Switzer, & Reynolds, 1983)? Other institution specific contingencies like state or private ownership also matters. State owned institutions, with greater impact on public life may augur different investor preference. That apart, investor characteristics like knowledge and domain expertise can also influence preferences. Finally, deeper and more embedded investment relations shall have different perception and preference from transient and transactional ones.

Through this paper, we intend to contribute in at least three specific ways. First we intend to contribute to the concept of institutional risk and its effect on investor preferences. Institutional risks, are salvageable propositions, *a painful* stitch, but in time to save much more painful nines, subject to continued investor confidence and preferences. Thus determining the different investor preferences, to different institutional risk contingencies, assumes importance. Secondly, by investigating investor and institutional characteristics at a granular level and their effects on investment preferences, we respond to the call given by Hoskisson et. al, (2017), albeit in managerial risk context. Finally, we believe our work shall contribute to building perceptions at

policy and practice levels, based upon preferences of investors on institutional ownership types and the chances of such institutions to overcome risks. Bailing, institutions, is a costly affair and the proposition to spend less public money merits consideration.

THEORY BUILDING AND HYPOTHESES

The literature on risk taking is broadly divided into those by the investor/principal and by agents (Weber, Weber, & Nosić, 2013), the latter is further subdivided into organizational and managerial risk taking. Traditionally, a risk averse agents is induced to undertake higher risk, by a risk taking principal using compensation (return) mechanism. What if, such compensations distort agency risk preference and make her exercise choices, thereby enhancing organizational risk and then cover up by promising higher returns. Being outsiders, shall investors still exhibit positive risk preferences? What if, such agent managed organizations, are perceived as institutions by investors, albeit with different types of ownership? What if, the said institutions, are not the only available investment options? What if, the purpose of investment, need not necessarily be profit maximization alone? Finally, if the investors belong to the same peer group as the institutions, will their risk preferences be any different to non-peer generic investors? Thus there is a need to further investigate the contextual and institutional contingencies on risk preferences.

Institutional Risks and Investment Preferences

Risk, a primary determinant in investment preference, is viewed in mainstream literature from the perspective of variances in returns with capital preservation (Weber et al. 2013). However, if risk reduces net endowment, then investors may become investment averse (Chatterjee et al. 2003; Tversky and Kahneman 1991; March and Shapiro 2016). In the context of institutional risks, we believe investors look beyond risk return paradigm. Since institutions supposedly provide some default investment security, investors moderate their return expectations.

At the same time, investors want to enhance income and may search higher returns from similar options like Government (or equivalent) bonds. Thus in the process of moderating their return expectations, investor may consider the underlying assets and liabilities of the investment receiving (*focal*) institution and other competing returns. Arriving at a decision, investors may then discount increasing risks. After all, what can go wrong in a bank, under regulatory safeguards? Thus investors may *frame* increasing institutional risks (Kempf, et. al, 2009) to a suitable level.

Now if the institutions start increasing the returns (e.g. interest rates on deposits), then following game theoretic assumptions, investors may grow suspicious of the intention of the institutions (Salant et al. 1983; Geanakoplos and Polemarchakis 1982). Increasing returns may signal increasing institutional distress, triggering ambiguity avoidance. Thus we state,

Hypothesis H1: Increasing returns, moderated by increasing risks, negatively and significantly affect investor preferences in institutions.

Institutional Risks, Investor Identity and Investment Preferences

Investment preferences comes from the risk appetite of investors (Frino et al. 2015; Bank and Rustbauer 2014). Appetite or propensity for risky investments has been variously correlated with physical, mental, psychological, socio-demographic factors as well as cognitive characteristics (Kuhnen and Knutson 2005, Girling 2013). Here, we focus on cognitive characteristics as a function of investor identity (MacKo & Tyszka, 2009). An investor with privileged information about the nature of risk, shall show preferences different from others (Houston, et.al, 2010; Weber, Blais, & Betz, 2002). Same industry peers are examples of such domain specific expert investors. In this paper, we focus on two types of investors – *peers (P)* and *commoners (C)* and investigate their preferences to institutional risks.

However peers, being insiders and embedded in routines, may overlook the *emergence* of institutional risks (Gai, Haldane, & Kapadia, 2011). That's because, institutional risks emerge from accumulating business specific risks. Industry peers may have (i) misplaced confidence about their own and other peers' abilities to contain the risks and prevent its escalation to crisis proportions or (ii) may perceive enhanced levels of business risks as the *new normal*, without realizing that they are entering crisis zones, or (iii) rely on the state and the regulators to bail out, given that they may be deemed too big or important to fail or (iv) may perceive investment risks in other options as uncomfortably high or (v) a combination of all. Consequently, they may downplay the true nature of the risk and prefer to stay invested within (Morrison & White, 2013).

However, when focal institutions start promising higher returns, it signals *desperation* to attract investments, triggering negative reaction (Laeven & Levine, 2009). Peer investors, operating in the same industry and with same or similar customers, can fairly estimate the quality of assets, liabilities and competing returns. Consequently, desperation shown through higher returns upsets the new normal and such focal institutions may be ostracized as pariah, to be avoided. Empirically, enhanced systemic risk coupled with dynamic asset pricing and interest rates, triggers negative preferences in interbank lending (Sato et al. 2018; Acemoglu et al. 2015).

As opposed to peers, commoners as investors are unlikely to have privileged information, and at the same time should be free from biases. The objective of investment by common investors in financial institutions like banks, are often convenient liquidity than profit (Kashyap, Rajan, & Stein, 2002; Acharya & Mora, 2015). Therefore when institutions increase their returns, they signal liquidity crunch (Berger & Bouwman, 2009). However lack of specific knowledge hinders accurate estimation albeit triggering negative sentiment. Consequently, we propose

Hypothesis H2: *Peer investors have a higher negative and significant preference to enhanced institutional risk and return than common investors*.

Institutional Risks, Psychologically Contracted Perceptions and Investment Preferences

Investment preferences in institutions (like banks) are a function of one sided perception on explicit investment objectives but more importantly an implicit unilateral expectation of investment stability in a transactional relationship (Busse and Hefeker 2007; Acemoglu et al. 2015). One of the relevant frameworks capturing perception is psychological contract (Rousseau 1989; Restubog et al. 2015; Robinson et al. 1994; Koh et al. 2004; Coyle-Shapiro and Conway 2005). Although, psychological contract has been predominantly used in an employee – employer context, the framework is extendable to buyer-seller setting (Cullinane and Dundon 2006; Conway and Briner 2012). We further extend this to investigate, the influence of psychological contract based perception and investment preference to institutional risk-return linkages.

Psychological contract fundamentally is a perception (Freese & Schalk, 2008) and therefore is prone to modification over time and transactions. The regularity and similarities in quality of transactional features develops the perception to relational form amongst interacting parties. In contrast, dissimilarity leads to dissonance in perception and tends to convert the psychological perception into contractual and transactional form. Consequently, a continuum exists in the perception. Therefore two broad terms are proposed (Rousseau 1989; Rousseau and Tijoriwala 1998; Hess and Jepsen 2009) to organize the content of psychological contract, namely transactional psychological contract (TPC) and relational psychological contracts (RPC). TPC are specific, explicit, exist over a short time frame, and include the exchange of tangible resources, while RPC are vague, implicit and highly subjective, exist with no clear time frame, and entail the exchange of intangible socio-affective resources (Conway & Briner, 2005).

Extending the logic, investments can also be driven by specific objectives, over short time horizon and dealing with tangible resources of smaller size and therefore driven by TPC. Trading of highly rated bonds or government securities in the secondary markets, or on-demand deposits, collateralized lending in peer to peer setting in commercial banks are examples. In contrast, RPC investments are guided by vague, implicit and subjective considerations, with extended time horizon leading to large aggregate deployment of endowments and entailing intangible socio-affective resources. Relationship based banking, where large term deposits, held by high net-worth individuals, double up as implicit collaterals against future borrowings, are examples of latter. Therefore, how shall investors, influenced by RPC or TPC, perceive institutional risks?

Since investors with TPC have very clear perception about duration, size and objective of their investments, they are unlikely to be perturbed by risks that are endogenous to the institution (Karlsson, Loewenstein, & Seppi, 2009). After all, their investments have clear contractual safeguards (Hilary and Hsu, 2011). In contrast, when institutions raise their returns, TPC investors may perceive that to be an exploitable opportunity but with hidden costs. Therefore in conjunction, high risk and return may cause negative preferences (Karlsson et al., 2009).

With respect to investors with RPC, their perceived additional benefits are intangible and without firm contractual obligation. Thus they are likely to be risk averse (Lizarazo, 2013). Consequently at the first sign of distress to an otherwise stable institution, they are likely to panic (Thaler, Tversky, Kahneman, & Schwartz, 1997). Such signs of distress can be from internal systemic risks or its signalling from increase in returns (Danielsson, Shin, & Zigrand, 2009). However, it is likely that such investors have invested over a relation, which they perceive from a reciprocal perspective. That is, they believe that the focal institutions shall also reciprocate in continuing the relation and treat them preferentially (Callen & Fang, 2013). This preferential risk

framing by RPC oriented investors shall depose them favourably vis-à-vis their TPC counterparts. Therefore we state,

Hypothesis H3: *TPC oriented investors have more negative and significant preference to enhanced institutional risk and return than RPC oriented investors.*

Institutional Risks, Institutional Ownership and Investment Preferences

Focal institution's characteristics like ownership also affects investor preference to institutional risks (Beuselinck, Cao, Deloof, & Xia, 2017). Two dominant forms of institutional ownership are state owned (SOE) and non-state or privately owned (PVB) institutions, the latter can however be publicly listed enterprises. Literature has perceived the distinction in ownership from two broad perspectives, (i) resources availability and (b) concomitant obligations. SOE institutions by default design are owned by and affiliated to the state. In contrast, PVB institutions can be standalone, but can be affiliated to business groups or have affiliates of their own (Kusnadi, Yang, & Zhou, 2015). Affiliation to state or business groups hedges such institutions from large scale disruption of their routines from macro environmental shifts (Gubbi, Aulakh, & Ray, 2015; Allen & Meyer, 1990). Affiliated institutions, like SOEs to the state, can leverage resources, like proprietary policy level information, of parents to enhance their performance (Cull, Li, Sun, & Xu, 2015; Hillman, 2005; Inoue, Lazzarini, & Musacchio, 2013; Li & Zhang, 2007). Thus their risks of failure reduces (Li & Atuahene-Gima, 2001) increasing investor preference to such institutions.

But, state's munificence comes at the cost of adherence to state's expectations (Sun, Mellahi, & Thun, 2010). A populist state acting as political stakeholder (Zhou, Gao, & Zhao, 2017), may redirect SOE resources (Okhmatovskiy, 2010), through board control (Cull, Li, Sun, & Xu, 2015; Wang, Hong, Kafouros, & Wright, 2012) to state defined priority areas, resulting in suboptimal outcomes and increased institutional risks. . For example, Chinese SOEs, kowtow to

the expectations of their monitoring agency (Li, Xia, & Zajac, 2018). PVB institutions are likely to be more resilient to state's populist directives as their resource linkages and dependencies are less (Berglof & Roland, 1998; Sheshinski & López-Calva, 2003). Consequently, investors may prefer SOE institutions less than PVB institutions, with respect to institutional risks. But, the chances of recouping the investment is likely to be higher in SOEs than PVB, under similar institutional risks due to state guarantee. Consequently we propose,

Hypothesis H4: *Investors have a more negative and significant preference to enhanced risk and return of PVB institutions than their SOE peers.*

Institutional Risks, Investor Identity, Psychologically Contracted Perceptions and Types of Investment Preferences

Institutional risks are likely to affect cohort based investors differently, when their psychological assumptions about focal institutions and investments are considered. Extending the logic of hypotheses 2 and 3, peer institutions are likely to go for long term investments, driven by intangible relational considerations, if they perceive the focal institution to add tangible and intangible benefits to their investments. However if with greater industry insights, they perceive that the asset portfolio of focal institution is riskier than theirs, they are likely to distance themselves. Being institutions themselves, and obligated to provide stability to the economy, peers will reduce liability of association and exposure to risky focal institutions. Similarly increase in returns from focal institutions, from within a community of industry peers also signals financial distress and shall augur negative preference from peers. Empirically also it is observed that the interbank call money market ceases to function during financial crisis (Krause & Giansante, 2012).

However considering collateralized short term investments, peer investors may enhance their investments irrespective of institutional risks. Moreover, peer to peer short term lending, in a

regulated industry is a norm rather than an exception. And regulators for that particular industry may normatively induce other peers to bail out a focal peer facing systemic risks. This is an explicitly defined obligation of transactional nature. Consequently, for short term collateralized lending, institutional risks may require enhanced peer investments. However in both short and long term peer investments, increasing returns, moderated by institutional risks are likely to induce negative preference, with negativity being greater for relational, long term deposits.

For non-peer commoner investors, institutions promise limited risk with moderately high and stable returns and thus a manifestation of the Bowman's paradox (Andersen, Denrell, & Bettis, 2007; Bowman, 1982). Institutions are safe havens for investments. It is the implicit stability with attended benefits that lures commoners into long term relational investments. Consequently, RPC oriented commoners, being oblivious of endemic/systemic problems, shall have less negative preference towards institutional risks. Further, in most countries, with stable institutions, much of the long term deposits are partly or wholly insured (Keeley, 1990). Consequently despite a negative preference to increasing returns, which may signal liquidity level distress, on the whole, long term commoner investors are least likely to be negatively affected. In contrast, for non-insured short term deposits, common depositors are likely to have an enhanced negative preference to institutional risks moderated returns. But in both the cases, the negative preference of the commoners are likely to be less than then peers. Therefore we propose,

Hypothesis H5a: *RPC oriented peer investors have a more negative and significant preference to enhanced risk and return than RPC oriented commoner investors.*

Hypothesis H5b: *TPC oriented peer investors have a more negative and significant preference to enhanced risk and return than TPC oriented commoner investors.*

Hypothesis H5c: *Within investor cohort, RPC oriented commoners are least likely to be negatively and significantly affected by increasing institutional risks and returns.*

Institutional Risks and Ownership, Investor Identity, Psychologically Contracted Perceptions and Types of Investment Preferences

In general, as proposed in hypothesis H4, private institutions are less preferred than state institutions under conditions of institutional risk. However, when we impose the conditions of investor identity and psychological contracts with respect to quantum and duration of investment, we believe that the latter two constructs moderate the identity effect by affecting resource dependency and reciprocal obligations aspects of ownership. Consequently, the risk-preference linkage may get altered. For example, non-peer commoners driven by TPC, with short term on-demand investment horizon, may prefer convenience of transaction (Weill, 1992; Ryals, 2003). Conveniences like ease of access through usage of technology and quick responses (often a function of firm size) may dominate investment preferences (Coviello, Brodie, & Munro, 2000). PVB institutions are relatively leaner, technology adoptive and more agile (Liao, Fei, & Liu, 2008) than their SOE counterparts (Stan, Peng, & Bruton, 2014). Therefore PVB institutions should have a higher acceptability. Also, commoners usually have no access to privileged information or they may not want to access such information, because they are transacting with institutions that are under regulatory oversights (Aobdia & Shroff, 2017). Convenience weighs heavier than returns in such transactional relationship (Cejnek & Randl, 2016). Consequently, we propose

Hypothesis H6a: *TPC oriented commoner investors have less negative and significant preference to enhanced risk and return from PVB institutions than SOEs.*

For the same set of investors, the preference for institutional ownership may inverse, when large long term investments are guided by RPC. As stated in H6a, commoners don't have

privileged information on the scope and embeddedness of institutional risk. Commoners Therefore they are likely to be loss averse with their long term investments often comprising of their retirement corpus (Benartzi & Thaler, 1999). Therefore any signal of institution level risk, be it from increases in returns or information about systemic risks from media sources, shall induce enhanced levels of *myopic loss aversion* (Boyce, et. al, 2013). Under such circumstances, they shall tend to huddle towards safe havens like gold or to those institutions, which they perceive to have enhanced levels of stability (Drechsler, 2013; Challe & Ragot, 2016). SOE institutions being owned and guaranteed by the state, provide the ultimate security against perceived investment losses during institution level risks (Hemerijck, A, C et al., 2012). Hence we propose,

Hypothesis H6b: *RPC oriented commoner investors have positive and significant preference to enhanced risk and return from SOE institutions and significant negative preference for PVBs.*

For peer investors, investment preferences are likely to be guided by stability and regulatory expectations, transacted under regulatory oversight (Freixas, Martin, & Skeie, 2011). Such transactions are a way to ensure institutional stability by sharing, spreading and normalizing excessive risks within industry players (Dinger & Von Hagen, 2009; Allen, et. al, 2014). For example in banking industry, statutory liquidity and cash reserve requirements from the regulators, meant to prevent liquidity risks, lead to interbank borrowing, lending and term depositing (Cocco, Gomes, & Martins, 2009; Heider, Hoerova, & Holthausen, 2015). When ensuring stability is a regulatory obligation, peer investors should search for investment options where the risks are either low ab initio, or where a third party can be brought in share and shoulder the responsibilities (Hu & Gong, 2018; Christensen, Lopez, & Rudebusch, 2014).

While PVB institutions do not face excessive politico-bureaucratic risks like their SOE peers, the need for superior performance in a competitive environment, may force them to take

excessive business related risks (Beck, Demirgüç-Kunt, & Levine, 2006; Berger, Klapper, & Turk-Ariss, 2009). Incrementally accumulative business risks, in the presence of exogenous shocks may transform to systemic contagions along the interconnected networks, resulting in institutional risks (Memmel & Sachs, 2013; Cohen-Cole, Patacchini, & Zenou, 2012). With emergence of such risks, peer investors are likely to search for hedging options and bail outs. Under such circumstances, the distinction between investment tenure, are likely to blur, with overall security of investment becoming the primary concern (Bräuning & Fecht, 2017; Temizsoy, Iori, & Montes-Rojas, 2015). Consequently, peers shall start preferring SOE focal institutions over PVBs for all types of investments. Hence we propose,

Hypothesis H6c: *RPC oriented peer investors have less negative and significant preference to enhanced risk and return from SOE institutions vis-a-vis PVB institutions.*

Hypothesis H6d: *TPC oriented peer investors have less negative and significant preference to enhanced risk and return from SOE institutions vis-a-vis PVB institutions.*

THE INSTITUTIONAL CONTEXT: INDIAN COMMERCIAL BANKING INDUSTRY

We choose the Indian commercial banking industry (ICBI) as a context, mimicking a unique controlled experimental setting to observe institutional risk and the various types of investment preferences. Banks are possibly the most important financial institutions in an economic system (Zhou, 2010; Gravelle & Li, 2013). Consequently institutional risks such as systemic risks are likely to have grave contagion effects on the whole economy, distorting normal behaviour of investors (De Jonghe, 2010; Dasgupta, 2004). The ICBI, under regulatory oversight from Reserve Bank of India (RBI), the central bank, has been instrumental in stabilizing the Indian economy from global contagions starting with the US subprime crisis of 2007-08. In the process, they ended up with very large percentage of NPA to total assets. Some of the estimates of NPA

and stressed assets in ICBI equate it to the quantum of cash in circulation in the Indian Economy (Basu & Moovendhan, 2017) which is around 230 billion USD (in 2016-17). NPAs are associated with liquidity risk (Arif & Nauman Anees, 2012) in banks and in extreme cases leads to run on the bank (Duca & Peltonen, 2013). NPA equalling the size of circulating cash, if not managed properly, can create mayhem in the financial system. Thus NPA constitutes an institutional risk.

That apart, the ICBI has two distinct groups, based on state ownership and private ownership. The state owned (SOE) banks consists of the State Bank of India (SBI) and its associate banks and the nationalized banks. SBI has a lineage of over 200 years, being founded by the English East India Company and continues a strong linkage with the state, by managing the treasury on behalf of RBI. The nationalized banks started as privately owned banks. But they were progressively nationalized by Government of India in two tranches in 1969 and 1980. The reason for nationalization was to protect them from failures and to divert resources to priority and developmental sectors. The private sector (PVBs) banks comprises of three groups; (i) the rump private sector that survived nationalization, (ii) a new set of private sector banks that were given license post economic liberalization of 1991 and (iii) the Indian subsidiaries of MNC banks.

To ensure financial health and adequate liquidity in the system, RBI monitors two parameters namely Statutory Liquidity Ratio (SLR) and Cash Reserve Ratio (CRR). Banks must maintain these ratios above threshold limit, to avoid penalty, using long term deposits in each other (peer investment) or through short term borrowing using interbank lending facilities. Alternatively, if on a particular day, the deposits exceed the statutory limits and in the absence of alternative investments, they resort to very short term peer to peer deposits (Pennathur, et.al, 2012). That apart, banks as a general rule, accept long term deposit from common customers as well as extend

demand deposits facilities to customers. Thus the latter two types, in this paper, are considered as non-peer commoner investors.

Thus ICBI enables us to model institutional risk, investor identity as peer-common depositors, ownership in terms of SOE and PVB and psychological contract in terms of short term vs long term deposits/investments.

METHOD

Data and Sample

All commercial banks have to mandatorily furnish various micro and macro level data to RBI. Consequently, we created the dataset from RBI. RBI clustered 92 banks into 4 groups (19 nationalized banks, SBI and 6 associate banks, 21 Indian private sector banks and 45 MNC subsidiaries) spanning over 145 months from March 2005 to March 2017. These 4 groups received 4 types of investments, demand (short term) and time (long term) deposits from peers and common depositors respectively. Consequently we have 2,320 investment-month data points aggregating 13,340 bank-month data. We supplemented RBI data with S&P – Bombay Stock Exchange-500 Index (BSE500), for corresponding periods. BSE500 caters to 93% of market capitalization of all BSE listed companies, and in our study, serves as a proxy for alternate investment option. We also used the Economic Policy Uncertainty Index (for India) developed by the research consortium of Baker (Northwest University), Bloom (Stanford University) and Davis (University of Chicago), for the period of study. Our dataset is consistent with literature (Pennathur et al., 2012).

Measurement Variables

Dependent Variable

Investor Preference ($IP_{b,i,l,t}$) – It is operationalized as any type of liability deposits received by the 4 types of banks from either other banks (peers) or non-bank sources (commoners) over time. Here

suffix b, denotes the 4 types of focal institutions (nationalized, SBI and associates, Indian private and MNC subsidiary banks) receiving the investments. Suffix i determines the identity of investor as in peer subgroup (reported as *liabilities to the banking system*) or commoner subgroup (reported as *liabilities to others in India*) investments. Suffix l denotes the nature of time liability, driven by either TPC (short term *borrowing from banks* or *demand deposits from others*) or RPC (long term *time deposits* from both types of investors) considerations. Finally suffix t denotes time period of observation which is 145 months from March 2005 to March 2017.

Independent Variables

Institutional Risk (ΔnpaH) – Institutional risk is operationalized in terms of increasing nonperforming assets (NPA) in the overall credit portfolio if banks. Excessive NPAs, by causing non-availability of liquidity to focal banks, can trigger systemic risks and disrupt interbank exchange mechanisms aimed at liquidity and financial stability (Berger & Bouwman, 2009; Acharya, Shin, & Yorulmazer, 2011). Banks incur NPAs, when the businesses, receiving bank credits, default due to market downturn on account of economic uncertainties. We have discounted wilful defalcation. Also NPAs are a function of credit ratio (Bercoff, J.J., Giovanni, J.D., Grimard, 2002). Hence we have used a projection or a hat matrix (Hoaglin & Welsch, 1978) to predict the effect of credit risk and economic uncertainty on increasing NPA (Δnpa). Consequently ΔnpaH is calculated as $\Delta npa = X\beta + \varepsilon_{b,i,l,t}$, {where $X = b_0 + b_1 CR_{b,i,l,t} + b_2 EPUI_{b,i,l,t} + r_{b,i,l,t}$, is a matrix of two explanatory variables, credit ratio (CR) measured as {*(Total Loans and Advance Assets)/(Total Liabilities to Banks + Total Liabilities to others)*} and economic policy uncertainty index (EPUI), $r_{b,i,l,t}$ is the error vector}, β is a vector of unknown parameters to be estimated, and $\boldsymbol{\varepsilon}_{b,i,l,t}$ is the error vector. Assuming equal weightage and uncorrelated errors, the predicted ΔnpaH would be

$$\Delta npaH = X[(X^T X)^{-1} X^T] \times \Delta npa \quad \text{--- (1)}$$

Investment Returns (intH) – Investment returns measured as interest rates, is broadly a function of assets generating the returns, the extant liabilities and the returns from competing classes of assets (Schultz, 1988). Consequently we used a projection matrix to predict the interest rate (*int*) subsuming the matrix (Z) of explanatory variables consisting of (i) Assets of commercial banks with peers (*Ast_withBank*), (ii) Assets as call money (*Ast_Cal_Mny*), (iii) Assets from investments in Government Securities (*Ast_GSec*), (iv) Assets created through loans and advances (*Ast_LnA*), (v) Reverse Repo rates (*InRt_Rev_Rep*), (vi) Weighted average interest rates of government securities (*InRt_Gsec*), (vii) weighted average interest rates of loans and advances (*InRt_LnA*), (viii) interest rates of call money (monthly average) (*InRt_Cal_Mny*) and (ix) *predicted* ODTL (*Odtl_Hat*). The last variable ODTL itself subsumes the explanatory variables namely (a) reduction in NPA (*rNPA*), (b) NPA written off (*woNPA*), and (c) Net NPA for current year (NNPA). Therefore, assuming $int = \{p_0 + \Sigma p_{a,n} Assets_{b,i,l,t} + \Sigma p_{c,m} Liabilities_{b,i,l,t} + \Sigma p_{d,v} Comp\_Int_{b,i,l,t} + e_{b,i,l,t}\} = Z\beta + \varepsilon r_{b,i,l,t}$, where ΣAssets, ΣLiabilities, ΣComp_Int measure respective sums, then

$$intH = Z[[(Z^T Z)^{-1} Z^T] \times int \quad \text{--- (2)}$$

Our measures are consistent with similar studies from emerging economies (Dong, Meng, Firth, & Hou, 2014).

Moderator Variables

We have used three moderators namely investor identity, ownership and psychological contract. The measures are as follows:

Investor Identity (Peer and Commoner) – based on the domain knowledge of the investor, we have divided them into two broad groups namely peer investors and commoners investors and dichotomised them as Peer Subgroup = (1,0) and Commoner Subgroup = (0,1). Therefore all liabilities from banks are coded under Peers while the same from others are coded as Commoners.

Ownership (SOE and PVB) – based on the ownership of the investment receiving banks, we have dichotomized banks owned by the Government of India (state) as SOE = (1,0) while those owned by non-state entities as PVB = (0,1). Thus all nationalized banks and the SBI and its associate banks are coded as SOE, while all private sector banks and MNC subsidiaries are coded as PVB.

Psychological Contract (TPC and RPC) – based on the psychological contract dictating the rationale for investments duration, we have dichotomized relational psychological contract (RPC) driven long term time deposits (1,0) and transactional psychological contract (TPC) driven short term borrowing from banks or demand deposits from others as (0,1).

We performed subgroup level analysis to investigate the effects of the moderator variables on investment preferences.

Control Variables

Age – Age, in literature, has been used as a proxy for stability, experience and domain knowledge. Investors are likely to prefer financial stability, domain knowledge and experience during investment. For each bank group, we have ascertained the difference between year of establishment (Ey) and the last month of count (March 2017) (Pm) for each individual bank in the group. We have aggregated the age of the banks, thus obtained, group-wise age and taken the natural logarithm $Ln[\Sigma(Pm - Ey_{i,t})]$ of the same to arrive at the group age. For the MNC affiliated private banks (FB), the year of registration of the affiliate/subsidiary has been considered as Ey.

Investor Convenience –Apart from savings and current account deposits, term deposits also provide the convenience of liquidity, subject to premature withdrawal penalties. Therefore we have used *Cash in Hand (Ast_CiH)* of the banks as measure of liquidity related conveniences. However, excess *Ast_CiH* leads to loss of income for bank and investors.

Alternative Investment Options (BSE500) – Investors can consider, the different capital market institutions like stocks, mutual funds and index funds etc., as substitutes to banks. Although the purpose of investments may differ given the high volatility of returns, the alternatives offer a zero sum scenario to investors, vis-à-vis bank deposits. In this paper, we have modelled volatility in alternative investment options as $(BSE500_{EOM} - BSE500_{BOM})/BSE500_{BOM}$ which measures the intra-month changes in the BSE500 index value, where the suffices BOM and EOM stand for beginning and end of month respectively.

We standardized the data within the 4 banking groups and performed our analysis with standardized data. Consequently we did not consider the size effect in any of the models.

Model Specification

With the available panel data, we performed Breusch Pagan (Lagrange Multiplier) test to ascertain temporal effect. The null hypothesis of homoscedastic distribution could not be rejected. This is possibly due to lower number of cases (n=16) to that of time periods (t=145). Alternatively, the aggregated data may contain a churning of banks during the period of study. We did not further perform the Hausman's test. Consequently, we estimated the models by using pooled OLS regression. Finally, to avoid misspecification for financial data (Hoskisson et al, 2017), we used two pronged strategy of using predicted estimates by using projection matrix (2 stage controlled function) based mediated moderation technique and time lagged independent variables to control for endogeneity. Thus in the final models, we have 2,304 investment-month data points. Further, we used, within group, standardized values, thereby overcoming the firm/bank size effect. The model arrived at, is diagrammatically presented in Figure F1 below.

Figure F1 about here

We also used subgroup analysis to determine the moderator effects.

RESULTS

Descriptive Statistics

Table 2a and 2b reports the Pearson's correlation matrix for all the standardized variables and variables of interest used in the models respectively. Expectedly, returns (*int*) and projected returns (*intH*) have a weak correlation ($p<0.1$) with investment preferences, signifying that investors perceive banks as institutions providing liquidity and stability besides returns. This is further strengthened by the positive correlations which age ($p<0.000$) and liquidity (cash in hand) ($p<0.01$) have with investment preferences and virtually with all other variables. BSE500 as alternative investments options has a negative and significant correlation ($p<0.05$) with preference, implying that higher returns from the capital market, siphons out investments from the banks, an empirically observed phenomenon. Interestingly, both institutional risk (*inpa*) and projected institutional risks (*inpaH*) have a significant and positive correlation with investment preference in general, implying that investors perceive institutions as safe havens for their investments, despite systemic risks.

Table T1a and T1b about here

Test of Hypotheses

Tables T3 represents the result of the 10 models, including the base conditions (models M1-M3) and capturing the hypotheses H1 to H4 through models M4 to M10 respectively. Table T4 represents the hypotheses H5a-H5c and H6a-H6d. through models M11-M22 respectively.

Table T2 & T3 about here

Model M1 represents the association of the control variables with risk preference of CDPs both at the subgroup and the aggregate level. The results indicate a positive and significant association between investment preference and age, a positive and non-significant association with investor convenience and a negative and non-significant association with alternative investment options. Model M2 shows a negative and significant association between returns (interest rate) and M3 shows a positive and significant association between institutional risks and investment preferences. Model M4, corresponding to H1, shows a significant and negative association to investment preference. Thus H1 is supported. Models M5 and M6, shows a negative and significant association with respect to peer and commoner investors; however, peer investors are affected more negatively than commoners. Thus hypothesis H2 is also supported. Likewise models M7 and M8 also shows a negative and significant association between long term (RPC driven) and short term (TPC driven) investors with institutional risk moderated returns, with short term transactional psychological contract oriented investors being more affected by institutional risks than relational investors. Thus H3 is also supported. Models M9 and M10 again show a negative and significant association between institutional risks moderated returns and investor preferences towards state and private institutions, with private institutions being held at a lower preference esteem than state institutions. Thus H4 is also supported.

Models M11 – M14 associates the two types of psychological contracts and investor identity with investor preferences and we find that all the three parts of H5 are supported. Therefore long term common investors are least affected negatively and significantly by institutional risk

moderated returns, while peers in general get more negatively affected than commoners with long term peers being most affected by such risks.

Finally, Models M15 – M22 associates the psychological contracts, investor identity and institutional ownership with investor preferences. Models M15 & M16 show a negative and significant association between short term common investors' preferences and ownership of institutions facing risk, with more negative association existing for SOE institutions. Thus H6a is also supported. Model M17, predictably and as an exception to general trend shows a *positive* and significant association of relational common investors preferring SOE institutions while the same for PVB institution (M18) is negative and significant. Thus H6b is also supported. With respect to Model M19, we found a negative but non-significant association between RPC peer investors' preferences and SOE institutions, while the same for PVB institutions (M20) are negative and significant. Thus H6c is partly supported. Finally, models M21 and M22 a negative and significant association between TPC oriented peer investor preference and institutional ownership, with negative preference being more for PVB institutions. Thus H6d is also supported.

We also tested for multi-collinearity using variance inflation factor (VIF) which is found to be 1.89 (< 10), hence not a problem. Also, since the sample and population are same, hence coefficients of determination across most of the models (model R^2) are also found to be high.

DISCUSSION AND CONCLUSION

Our investigation into investor preference to institutional risks reveal a few novel insights. First and foremost, in some of the models, we find that investors foster positive preference to institution's ability to cope with risks, but while considering returns, have negative preferences. Stated differently it implies that investors, when compensated for higher risk with higher returns, turn hostile. This observation, is not in complete sync with the risk-return paradigm, and hence

begs further probing. A negative preference to returns implies that investors as either loss averse or driven by objectives other than profit maximization, or both. One such objective could be the *safety first* consideration. At the same time, one of the models, exhibit positive preference, to an increasing combination of risk and return. In the same model, per se, increasing risk is disfavoured, while returns found favour. This is synonymous to profit maximizing behaviour thus undercutting loss aversion assumptions. Therefore how can these divergent traits be possibly reconciled?

We believe preference variances as observable in figure F2, can be explained through the one sided psychologically contracted assumption, on a combination of factors like ambiguity avoidance (Curley, Yates, & Abrams, 1986) and endowment size (Kahneman, et. al, 1991).

Figures F2 about here

In common perception, institutions are designed to eliminate uncertainties and mitigate risks. Consequently, increasing risks in institution is deemed an alien and ambiguous concept. When risk is ambiguous, investors shall typically tend to avoid them, unless there are specific contingencies that reduce ambiguities. SOE institutions present such contingencies where they are perceived to have state guarantee by common investors, who prefer them over PVB institutions with their long term sizeable investments. The exact opposite condition, with least preference, exists for peers investors with long term deposits in PVB institutions. Here, peers being industry insiders, have less ambiguity on nature of institutional risks. However they may face hostile outcomes (Yates & Zukowski, 1976) with their investments as peers may side line them to prefer common depositors in liquidity crisis. Commoners make core customer segment of PVB institutions, while peers are peripherals. Further peer deposits are a regulatory mandate but peer

hostility may discourage long term investing. Consequently peers have maximum negative preferences. In contrast, peers with less embedded smaller investments, show lower negative sentiments against PVB institutions.

Secondly, our study reveals that in the institutional context, returns influence investment preference more than institutional risks. The fact that in all the models, the resultant investment preference shifts more towards returns than risk supports that assertion. The ambiguity-endowment logic suggests that any change with respect to any of the investment assumptions, that investors may not have previously perceived but subsequently became aware of, will trigger significant response. In contrast, institutional risks albeit disconcerting, still remains an alien assumption, not fully comprehensible and hence its effects (positive or negative) on investment preference, remains lower than that of returns. Contextually, a large segment of the common depositors in India comprises of aged and retired people, who will invest a major part of their retirement savings in banks and especially as term deposits. Such a segment is alive to the concept of returns (as deposit interest rates), but not so to any institutional risks. Consequently, their preferences will be guided more by changes in returns than increase in institutional risks.

Thirdly, and closely related to second observation, we find that excepting model M17, across all other models, increase in return, invokes negative preference from investors and the same type of preference gets perpetuated at the aggregate risk-return level also. Normally return and investment preference has a positive association for a given level of risk. And yet, with respect to institutions, this preference undergoes qualitative changes. Using the ambiguity-endowment logic, we believe, that if institutions increase returns to attract investments, then they are perceived as either economically irrational or have failed to serve their uncertainty mitigation purpose, or are opportunistic, non-trustworthy, and unbecoming of the name. These emotions invoke ambiguity

about an institution, resulting in disfavour and general negative preference. The only exception is again the SOE institutions, but limited to long term deposits from commoners. Using the ambiguity-endowment logic, common depositors, being uncertain about other investments options, may prefer to flock and lock their long term assets with SOE banks/institutions. Albeit, they have negative preference to risks in SOE institutions, they do believe in the ability of SOEs (backed by the state) to pay the contracted returns. Consequently they show positive preference to maximize their wealth. In contrast, commoners do not seem to believe PVB institutions with their long term sizeable investments. Again in the context of aged common depositors in India, banks are preferred over other instruments like annuities as they provide operational flexibility along with capital preservation, which is difficult with other investment options. Further their deposits are often bequeathed as endowments to family members and descendants. Consequently, if banks, especially SOE banks, increase deposit interest rates, they are likely to attract more deposit as depositors trust them with their investments. But with PVB institutions, the commoner category lies with relatively young population, who prefer ease of transaction, often through online modes. Thus when PVB banks increase returns, such commoners perceive general rate hardening, including opportunities outside. Thus they shall conveniently withdraw to invest in other options. For the aged population, who grew up in a regulated environment, rate increase by private players are synonymous with liquidity crunch in PVB banks. With the state, not obliged to bail out PVB institutions, such liquidity problems are synonymous with high ambiguity and a negative preference. Across the models, only peers with smaller short term deposits, prefer (albeit less negatively) a rate increase, independent of institutional identity. Such short term deposits, like overnight call money, should facilitates peers, when returns increase. At the same time higher returns, due to hardening policy rates, makes RBI a better investment option.

Last but not least, we observe that within peers to peer transactions, the ability of PVB institutions to manage institutional risk gets appreciated, but aggregate preference lies with SOE institutions. It's as if, inefficiency (in managing risks) has been preferred, despite the specific industry being deregulated for nearly three decades. State guarantee definitely plays a big role, especially for the common investors. However, an alternative explanation, inferring from the above discussion would also suggest the following. Institutions evolve incrementally. Incremental evolutions render responses that are slow but steady and not rushed through. Inertia within institutions provide them stability – an attribute possibly preferred by investors. PVB institutions, with greater agility and higher efficiency do not fit with this one sided perception (a psychological contract outcome) of investors. Consequently, PVB institutions, under increasing risk and return, find less favour.

LIMITATIONS AND FUTURE DIRECTIONS

Our study, albeit comprehensive and robust, has a few limitations. First, we obtained data from RBI, which provides bank-group wise aggregate level data. RBI declined to provide data on individual banks, citing concerns over leakage of sensitive data leading to contagion effect. Consequently, although fully balanced, yet time series panel was much greater than cross sectional panel. A second limitation of the group level data is that, it masked the contribution of two big PVB banks, which are designated as domestic systematically important banks, by the banking regulator, along with State Bank of India (an SOE bank). The aforesaid designation implies *too-big-to-fail* status and consequently, the preference of investors towards the above two PVB banks would be similar to SOE banks. Finally, our construct definition and operationalization, though

appropriate and supported by literature, is context specific. Hence to replicate our work in a different industrial setting, operationalization has to be suitably modified.

In the present study, we have investigated investor behaviour as a function of institutional risk. We have not investigated whether such preferences trigger institutional introspection leading to institutional changes. This, we deem is an interesting way forward. Further, finding delineating conditions with respect to institutional risk, institutional change and deinstitutionalization process, as a function of investor preference, will be the natural progression of the current research.

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Table T1a: Pearson's Pairwise Correlation Matrix for all Standardized Variables

	Inv_Pref	int_Dep	iNPA	ODTL_subgrp	A_in_Bank	A_CI_Mny	A_CiH	A-G-Sec	A_LnA	int_MIBOR	int_RvRp	int_LnA	int_Gsec	rNPA	pNPA	woNPA	nNPA	Age	CR_Ratio	BSE500	Eco_Uncert_Ind
Inv_Pref	1.000																				
int_Dep	.040(+)	1.000																			
iNPA	.606**	-.045*	1.000																		
ODTL_subgrp	.364**	.151**	.340**	1.000																	
A_in_Bank	.572**	.224**	.754**	.413**	1.000																
A_CI_Mny	.318**	.064**	.317**	.149**	.402**	1.000															
A_CiH	.479**	.085**	.589**	.240**	.657**	.109**	1.000														
A-G-Sec	.712**	.087**	.788**	.303**	.757**	.385**	.656**	1.000													
A_LnA	.700**	.196**	.786**	.339**	.771**	.375**	.643**	.971**	1.000												
int_MIBOR	.081**	.983**	.002	.155**	.269**	.097**	.124**	.147**	.254**	1.000											
int_RvRp	.208**	.793**	.116**	.137**	.345**	.200**	.236**	.335**	.417**	.835**	1.000										
int_LnA	-.117**	.436**	-.152**	-.011	.007	.049*	-.082**	-.200**	-.167**	.458**	.546**	1.000									
int_Gsec	-.043*	.614**	-.100**	.077**	.077**	.022	.007	.057**	.140**	.602**	.537**	.252**	1.000								
rNPA	.515**	-.018	.769**	.253**	.680**	.347**	.670**	.711**	.704**	.019	.118**	-.121**	.018	1.000							
pNPA	.702**	.003	.849**	.269**	.696**	.347**	.608**	.910**	.902**	.071**	.263**	-.185**	-.073**	.669**	1.000						
woNPA	.602**	-.135**	.825**	.225**	.593**	.279**	.571**	.765**	.753**	-.084**	.090**	-.194**	-.209**	.731**	.833**	1.000					
nNPA	.612**	-.026	.956**	.330**	.746**	.290**	.604**	.778**	.776**	.023	.150**	-.139**	-.117**	.715**	.860**	.789**	1.000				
Age	.684**	.185**	.756**	.312**	.764**	.327**	.669**	.968**	.985**	.238**	.387**	-.202**	.165**	.711**	.883**	.733**	.738**	1.000			
NB_CR_Ratio	.451**	.474**	.400**	.248**	.503**	.153**	.395**	.611**	.726**	.505**	.561**	.083**	.390**	.388**	.514**	.345**	.419**	.717**	1.000		
BSE500	-.053*	-.254**	-.037	-.071**	-.095**	-.010	-.099**	-.045*	-.061**	-.247**	-.149**	-.085**	-.147**	.019	-.036	.012	-.037	-.060**	-.077**	1.000	
Eco_Uncert_Ind	.031	.437**	-.006	.120**	.264**	-.032	.190**	.120**	.150**	.421**	.301**	.045*	.319**	.125**	-.032	-.140**	-.024	.204**	.290**	-.230**	1.000
N	2304	2304	2304	2304	2304	2304	2304	2304	2304	2304	2304	2304	2304	2304	2304	2304	2304	2304	2304	2304	2304

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed). (+). Correlation is significant at the 0.1 level (2-tailed).

Table T1b: Pearson's Pairwise Correlation Matrix for Variables of Interest used in Models

	Inv_Pref	Age	BSE500	A_CiH	intH	inpaH	inpaH*intH
Inv_Pref	1.000						
Age	.684**	1.000					
BSE500	-.053*	-.060**	1.000				
A_CiH	.479**	.669**	-.099**	1.000			
intH	.040(+)	.193**	-.214**	.111**	1.000		
inpaH	.461**	.684**	-.008	.352**	.384**	1.000	
inpaH*intH	-.155**	-.117**	.248**	-.046*	-.449**	-.321**	1.000
N	2304	2304	2304	2304	2304	2304	2304

**. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

(+). Correlation is significant at the 0.1 level (2-tailed).

Table T2 (Investment Preferences to Institutional Risks – Hypotheses H1 – H4)

Hypotheses				**H1**	**H2**		**H3**		**H4**	
Models	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10
Investor Preferences	Control Variables	Projected Return	Projected Institutional Risk	General Preference	Peer Subgroup	Commoner Subgrp.	Long Term RPC Subgroup	Short Term TPC Subgroup	SOE Subgrp	PVB Subgroup
Investor Convenience (Ast_CiH)	0.038	0.033	0.042	0.043 (+)	0.088 (*)	-0.001	-0.111 (**)	0.198 (***)	-0.07	0.086 (**)
Robust SE	*0.026*	*0.025*	*0.026*	*0.025*	*0.044*	*0.016*	*0.039*	*0.041*	*0.051*	*0.03*
Age	0.661 (***)	0.683 (***)	0.643 (***)	0.667 (***)	0.332 (***)	1.001 (***)	0.8998 (***)	0.433 (***)	0.947 (***)	0.597 (***)
Robust SE	*0.026*	*0.027*	*0.04*	*0.04*	*0.718*	*0.0177*	*0.041*	*0.067*	*0.092*	*0.043*
Alternative Investment Options (BSE500)	-0.01	-0.031 (*)	-0.035 (**)	-0.008	-0.022	0.006	-0.008	-0.008	-0.009	-0.003
Robust SE	*0.012*	*0.013*	*0.013*	*0.013*	*0.023*	*0.008*	*0.016*	*0.021*	*0.019*	*0.019*
Investment Returns (intH)		-0.11 (***)	-0.126 (***)	-0.176 (***)	-0.218 (***)	-0.133 (***)	-0.207 (***)	-0.144 (***)	-0.105 (***)	-0.213 (***)
Robust SE		*0.017*	*0.017*	*0.019*	*0.033*	*0.013*	*0.024*	*0.03*	*0.022*	*0.029*
Institutional Risk (∆npaH)			0.126 (+)	0.02	0.171	-0.132 (***)	-0.058	0.097	-0.698 (***)	0.318 (***)
Robust SE			*0.071*	*0.072*	*0.126*	*0.038*	*0.074*	*0.118*	*0.166*	*0.075*
∆npaH x intH				-0.4 (***)	-0.558 ***)	-0.243 (***)	-0.356 (***)	-0.445 (***)	-0.245 (**)	-.538 (***)
Robust SE				*0.049*	*0.086*	*0.031*	*0.063*	*0.075*	*0.0837*	*0.062*
Const	0.014	0.015	0.016	0.074 (***)	0.091 (**)	0.058 (***)	0.069 (***)	0.080 (**)	0.049 (*)	0.088 (***)
Robust SE	*0.015*	*0.015*	*0.015*	*0.017*	*0.03*	*0.01*	*0.020*	*0.027*	*0.025*	*0.022*
R^2	0.479(***)	0.478(***)	0.48(***)	0.495(***)	0.228(***)	0.914(***)	0.651(***)	0.387(***)	0.48(***)	0.554(***)
N	2304	2304	2304	2304	1152	1152	1152	1152	1152	1152

(***) implies significant at p<0.000 (**) implies significant at p<0.01 (*) implies significant at p<0.05 (+) implies significant at p<0.1

Table T3 (Investment Preferences to Institutional Risks – Hypotheses H5a – H6d)

Hypotheses	H5a & H5c		H5b & H5c		H6a		H6b		H6c		H6d	
Models	**M11**	**M12**	**M13**	**M14**	**M15**	**M16**	**M17**	**M18**	**M19**	**M20**	**M21**	**M22**
Investor Preferences	Peer-RPC Subgroup	Commoner - RPC Subgroup	Peer - TPC Subgroup	Commoner - TPC Subgroup	SOE-TPC-Commoner Subgroup	PVB-TPC-Commoner Subgroup	SOE-RPC-Commoner Subgroup	PVB-RPC-Commoner Subgroup	SOE-RPC-Peer Subgroup	PVB-RPC-Peer Subgroup	SOE-TPC-Peer Subgroup	PVB-TPC-Peer Subgroup
Investor Convenience (Ast_CiH)	-0.19 (+)	-0.032 (+)	0.367 (***)	0.029	-0.047	0.071 (**)	-0.017	-0.051 (*)	-0.397	-0.061	0.193	0.383 (***)
Robust SE	*0.09*	*0.019*	*0.073*	*0.021*	*0.074*	*0.026*	*0.011*	*0.026*	*0.276*	*0.052*	*0.133*	*0.092*
Age	0.779 (***)	1.02 (***)	-0.116	0.983 (***)	1.04 (***)	0.970 (***)	1.084 (***)	1.002 (***)	1.142 (***)	0.736 (***)	0.522 (+)	-0.318 (***)
Robust SE	*0.081*	*0.017*	*0.103*	*0.029*	*0.096*	*0.027*	*0.019*	*0.019*	*0.285*	*0.051*	*0.286*	*0.072*
Alternative Investment Options (BSE500)	-0.025	0.008	-0.02	0.005	-0.031	0.042 (+)	0.003	0.012	-0.039	0.004	0.031	-0.073
Robust SE	*0.028*	*0.006*	*0.032*	*0.015*	*0.019*	*0.022*	*0.006*	*0.011*	*0.044*	*0.025*	*0.043*	*0.05*
Investment Returns (intH)	-0.367 (***)	-0.047 (***)	-0.069	-0.219 (***)	-0.255 (***)	-0.18 (***)	0.025 (**)	-0.12 (***)	-0.157 (**)	-0.54 (***)	-0.031	-0.008
Robust SE	*0.044*	*0.011*	*0.049*	*0.022*	*0.282*	*0.034*	*0.007*	*0.018*	*0.049*	*0.049*	*0.059*	*0.071*
Institutional Risk (∆npaH)	-0.954	-0.02	0.438 (*)	-0.244 (***)	-0.255 (+)	-0.253 (***)	-0.226 (***)	0.062 (*)	-1.24 (**)	0.418 (***)	-1.07 (*)	1.047 (***)
Robust SE	*0.134*	*0.028*	*0.188*	*0.065*	*0.152*	*0.071*	*0.036*	*0.032*	*0.372*	*0.104*	*0.502*	*0.176*
∆npaH x intH	-0.635 (***)	-0.077 (**)	-0.48 (***)	-0.40 (***)	-0.458 (***)	-0.369 (***)	0.152 (***)	-0.261 (***)	-0.249	-1.028 (***)	-0.427 (*)	-0.494 (**)
Robust SE	*0.110*	*0.029*	*0.123*	*0.051*	*0.07*	*0.079*	*0.022*	*0.038*	*0.168*	*0.095*	*0.189*	*0.170*
Const	0.104 (**)	0.033 (***)	0.077 (+)	0.082 (***)	0.097	0.07 (**)	-0.005	(***)	0.041	0.152 (***)	0.065	0.0749
Robust SE	*0.036*	*0.009*	*0.043*	*0.018*	*0.026*	*0.026*	*0.007*	*0.012*	*0.059*	*0.032*	*0.066*	*0.052*
R^2	0.456(***)	0.971(***)	0.179(***)	0.875(***)	0.867(***)	0.89(***)	0.99(***)	0.968(***)	0.308(***)	0.7889(***)	0.217(***)	0.319(***)
N	576	576	576	576	288	288	288	288	288	288	288	288
(***) implies significant at p<0.000			(**) implies significant at p<0.01				(*) implies significant at p<0.05				(+) implies significant at p<0.1	

Figure F1: Full Model with Mediated Moderation

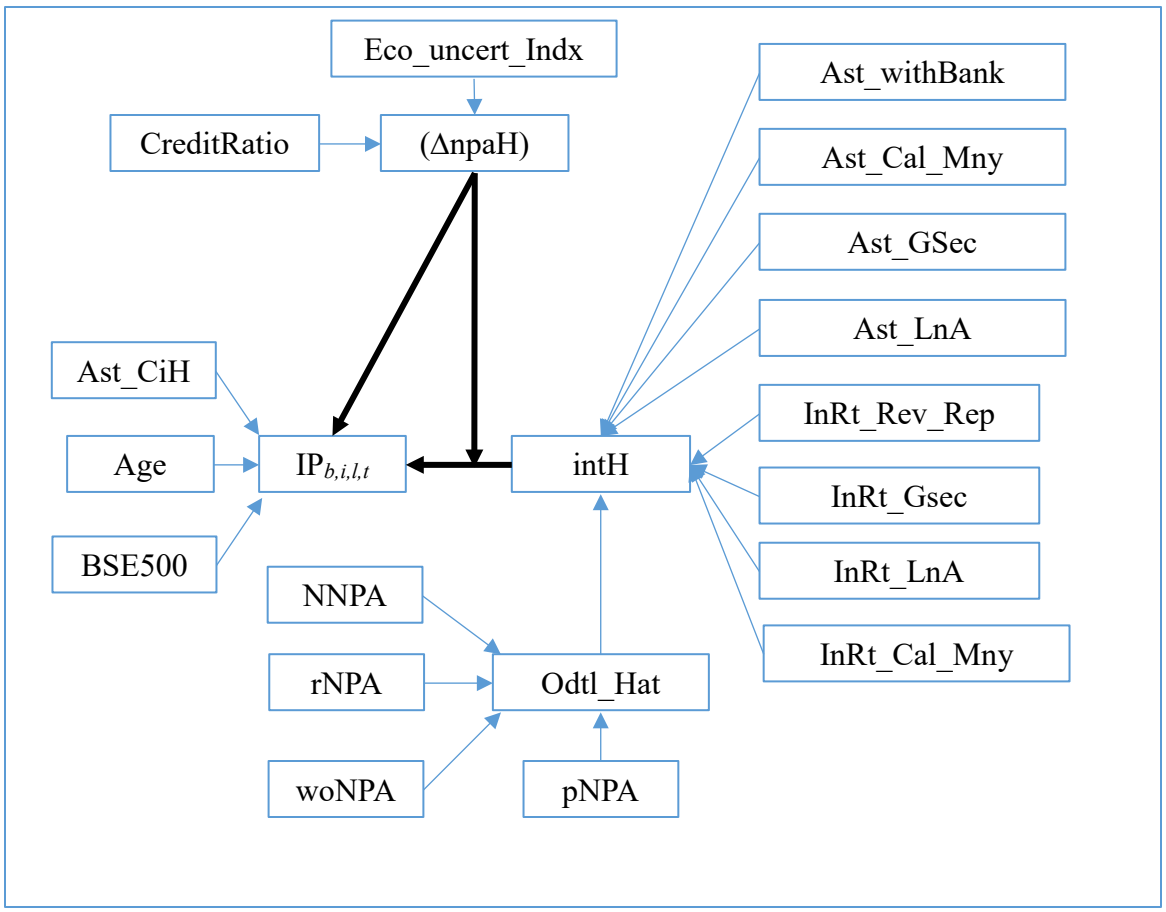

Figure F2 - Investment Preferences to Institutional Risks, Returns and Risk Moderated Return