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Social dynamics of Gender and risk in stock markets

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ABSTRACT *: Gender is a social construct that influences the decisions of an individual throughout the life. From the choice of food to investment decisions, every facet of life is entwined in the gendered socialization that is imparted to an individual by the society. This study seeks to probe the intricacies of secondary market investment choices made by individuals with reference to one's gender attributes. There are various factors that influences the individuals participation in the stock markets. Some of them include income, age, educational qualification, investment related knowledge. Controlling for these variables, this paper seeks to identify the variation in parameters like participation and risk aptitude due to gender.*

Keywords– *Financial Market Participation, Gender, Social Network, Socialization, Stock Market*

I. INTRODUCTION

An individual is not an isolated entity in a social setting. An action seemingly independent of the influences of anybody else other than the actor herself also is highly influenced by various others. This is because as a member of society, we are either consciously or unconsciously being influenced by many other social actors whom we come across in our daily lives. An economic transaction such as trading in the secondary market is also not any different from this. A market in itself is a social construction construed upon the premise of trust over the ages. While making a transaction various influences are being weighed in the mind. These are not just economic motives of profit maximization, but transcend beyond the profit motive to include various other social dimensions like peer approval, social acceptance, conformity to the prevalent norms etc. These considerations arise out of the constant process of socialization which bombards an individual which influences from various socialization agents such as the primary reference groups which includes- family, friends and secondary reference groups comprising of the other influencing agents. The influences imbibed in this process prove to be an important determinant of the actions of an individual. This applies even for stock market transactions where socialization translates into differences in participation and risk aptitude of the individual, which has further consequences on their profit making ability.

Stock market participation is an important economic outcome. There can be a substantial welfare loss from not participating in the stock market, as exposure to equities, and hence to the equity premium, may be an important determinant of the long-run return to individual savings (Cocco et al. 2005). Yet, there is substantial variation in stock market participation between individuals, with many households not holding any stocks at all (e.g. Campbell 2006, Guiso et al. 2008).

II. INVESTMENT APTITUDE AND GENDER INFLUENCE DYNAMICS

Gender is a social construct that influences the decisions of an individual throughout the life. From the choice of food to investment decisions, every facet of life is entwined in the gendered socialization that is imparted to an individual by the society. This study seeks to probe the intricacies of secondary market investment choices made by individuals with reference to one's gender attributes. There are various factors that influences the individuals participation in the stock markets. Some of them include income, age, educational qualification, investment related knowledge. Considering these variables to be constant, and all other influences being equal, this paper seeks to identify the variation Risk aptitude due to gender.

A number of factors have been proposed for the substantial non-participation even among households that can afford to save, including cognitive ability (e.g., Benjamin et al. 2006, Kezdi and Willis 2006, Grinblatt et al. 2011), fixed participation costs (e.g., Haliassos and Bertaut 1995, Vissing-Jørgensen 2003), lack of stock market awareness or social connections (e.g., Hong et al. 2004, Guiso and Jappelli 2005, van Rooij et al. 2011), lack of trust (Guiso et al. 2008), and risk aversion (e.g. Halko et al. forthcoming).

Individuals have become increasingly active in financial markets and market participation has greatly been promoted by invention of new financial products However, majority of investors tend to utilize a limited subset of information in the markets hence having uninformed competing investors/ traders. In reality, investors

do not receive all information freely; they have to decide whether and which information to gather prior trading and investors end up staying afloat in a sea of uncertainty which in turn affects their level of awareness.

The outline for the paper is the following. In section 3, the data is presented, results in section 4, and finish with a discussion in section 5.

III. THE DATA

Research Design

The study used a cross sectional research design. It involved descriptive and analytical research designs to establish whether changes in the independent variable affect the dependent variable. A correlation approach using quantitative data was used to establish the relationship between investor awareness, perceived risk attitudes and investor behaviour. And a regression model was adopted to establish how the independent variable predicts the dependent variable.

a standard measure of stock market participation: direct stock market participation through ownership of stocks and/or indirect participation through ownership of shares in mutual funds is used in the study. The same measure is used by Vestman (2010). The measure excludes stock market participation through pension plans, including mandatory retirement accounts.

Purpose of the Study

The purpose of the study was to examine how gender influences affect investor behaviour while trading stocks on the stock market in terms of their participation, performance and perceived risk attitudes

Scope of the Study

Geographical Scope: The study was conducted in Bangalore .

Subject Scope: The study examined the relationship between gender and participation in secondary markets, performance while trading in the stocks and perceived risk attitudes on stock markets. Investor awareness, social learning social aspects of behaviour were compared between men and women who had same level of education, income and were of the same age. Perceived risk attitudes looked at investor's perception as driven by both affective and cognitive factors leading to risk averse, risk neutral or risk taking investors.

Significance of the Study

(i) The research is intended to expand the pool of knowledge in the area of gender differential awareness and stock market participation as well as give an insight on the fact that investment or trading can be driven by behavioral motives induced through socialization as opposed to fundamental motives which will help conduct further studies through the provided research findings

Measurement of Variables

All item scales for the variables were derived from previous studies where they had been tested for validity and reliability.The perceived risk attitudes of the investors was measured using a point bi-serial correlation adapted from Weber and Milliman (1997) between investor's risk judgment about the company and his choice and a psychometric approach based on likert statements that produced a onedimensional risk attitude scale.

Investor behaviour was measured using State Street's approach which measures confidence directly and quantitatively by assessing the changes in investor holdings of risky assets, herding, over and under reaction and loss aversion of investors. This was based on likert statements ranging from strongly disagree to strongly agree.

Anticipated Limitations

i. The study concerns a sensitive area regarding investors and brokerage firms' trading which causes suspicions hence some vital information may be concealed due to lack of trust.
ii. The methodology was be limited due to the fact that measurement of variables using scales may be subject to modifications since the scales were tailored to developed economies where the stock markets are more developed than Bangalore Stock Exchange(BgSE).
iii. There is a possibility of getting varying/ poor responses depending on the respondent's level of conceptualization

Study Population

The study population comprises of a sample of stock brokers and investors from Bangalore, India. Stock brokers listed in the Bangalore Stock Exchange and investors holding at least one stock listed in the exchange comprised the sample universe of the study.

To find out the different needs of investors, an online questionnaire was developed and administered in 2013. To allow for suggestions on the structure of the questionnaire as well as to assess the content and face validity of the questionnaire Mitchell, 1996), several consumer behavior and investment experts were consulted. Moreover, the study comprised both staff of brokerage firms on the Bangalore Stock Exchange and individual investors trading with the brokerage firms.

The sample size of 30 among stock brokers and 417 among investors was determined using Krejcie and Morgan (1970) table scale. To select the sample, staff of brokerage firms and individual trading accounts with the brokerage firms was chosen proportionately from each of the 8 brokerage firms.

Data Sources

Primary Data: The final questionnaire was distributed online and data was procured from Computer Aided self Administered Questionnaire (CAAQ) with the brokers and individual investors in the brokerage firms through issue of structured questionnaires to the brokerage firms and investors on the BgSE.

Secondary Data: Journals, BSE, and BgSE Annual Reports, news papers and reports from the brokerage firms were used. Data regarding the trading of equities of companies from the licensed brokerage firms on the USE was used alongside documentation from previous studies.

IV. RESULTS - MEASURING RISK ATTITUDES

Descriptive statistics

The sample of brokers predominantly comprises of male respondents (70%) while only 30% are women.

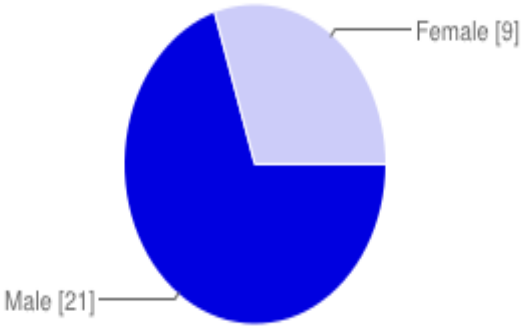

Figure 1: Gender of respondents (Brokers)

The sample of investors is evenly divided between men and women, 49 and 51 percent respectively. The average age is 44 years. Education is measured as belonging to one of eight categories, from primary school and increasing to advanced degrees, including Ph.D.5 Individuals were asked to report their (monthly, pre-tax) income bracket. The majority of the individuals in our sample are employed (57%). The second largest group are retired (16%) followed by unemployed (8%), students (12%) and self-employed (6%). The sample is reasonably representative of the Indian population

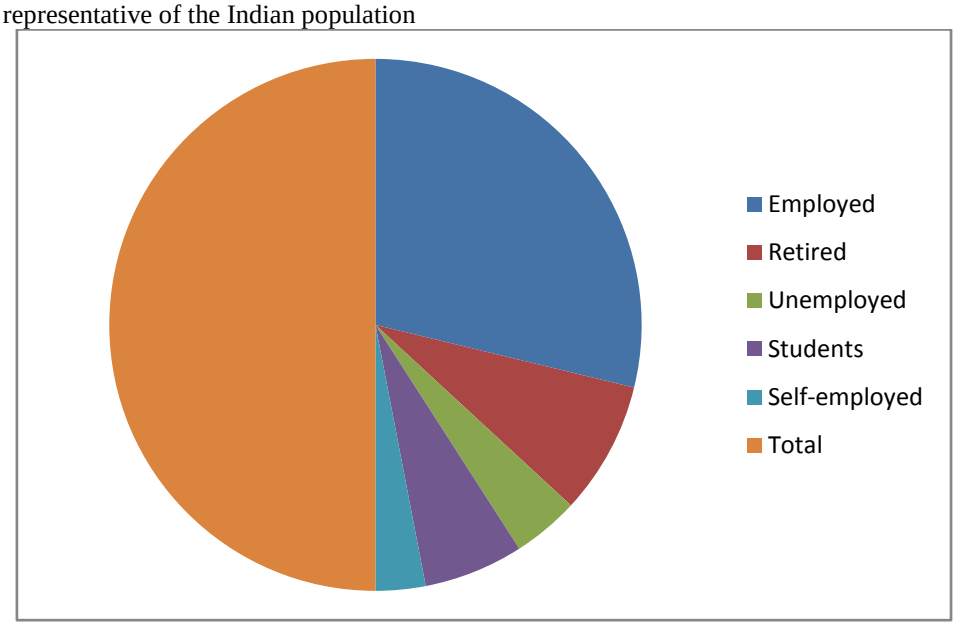

Figure 2 Employment breakup of Investors

The data indicate that women are less likely to participate in the stock market. Women are also more educated, have lower incomes, score lower on basic financial literacy as well as advanced financial literacy, and are less risk taking than men (more prone to indicate that they take less risk than the median amount in the sample).

Risk attitudes

Perceived risk attitude addresses a person's judgment (belief and opinion) towards taking or avoiding risk when making decisions under uncertain outcomes (Bernd, 2004). The classical 2 theorists argue that differences in attitudes to risk affect the allocation of wealth between safe and risky assets, but not the particular asset selected. However, Elke and Richard (1997), assert that the decision to accept a particular asset and the willingness to pay for the asset depends on the investor's risk perception. Investors' perceptions of the riskiness of choice alternatives always differ significantly from individual to individual depending on a person's beliefs, and reference point (Bottom 1990).

An investor's perceived risk attitude is usually determined by either affect/emotions or his cognitive ability. And this makes perceived risk attitudes of investors to be more subjective rather than objective to risky situations. According to Zajonc (1980); LeDoux (1996), emotional reactions are predominant at a very early stage and are more basic than cognitive evaluations. Under such circumstances, investors are prone to unjustified beliefs and may resort to 'rule of thumb' hence making sub-optimal (irrational) investment decisions (Gary and Uri, 2003). Investors are therefore likely to base on psychological or social and emotional factors to make decisions. And this may affect the trading behaviour of stocks in the market

The study found that women are significantly less risk taking than men according to this measure. Basic financial literacy is not correlated with risk preferences whereas advanced financial literacy is. However, the gender gap remains significant even when it is controlled for financial literacy. This result matters because attitude toward risk taking is in itself an important determinant of stock market participation and other important decisions in a number of domains. Moreover, this contributes to the understanding of the often observed gender gap in risk preferences (Croson and Gneezy 2009). The two papers that are most closely related to our examination of the link between financial sophistication or financial knowledge and the gender gap in risk attitudes are Dwyer et al. (2002) and Halko et al. (forthcoming). Dwyer et al. (2002) find that the gender gap in risk taking decreases significantly once controls for a variable related to advanced financial literacy is included, whereas Halko et al. (forthcoming) find that the gender gap in risk attitudes with the same type of measure as used here remains

Propensity for risk between Men and Women (opinion of the Stock Brokers)

	Frequency	Percent	Valid Percent	Cumulative Percent
Both equally	**10**	**32.3**	**32.3**	**32.3**
Men	**19**	**61.3**	**61.3**	**93.5**
Women	**2**	**6.5**	**6.5**	**100.0**
Total	**31**	**100.0**	**100.0**	

Exploring to find out whether financial literacy can explain the gender gap in risk taking, given that women are typically less risk taking than men and that financial literacy turned out to be a successful factor in explaining the gender gap in stock market participation. As indicated in Table 1 above, women self-report to be significantly less risk taking than men ($p<0.001$). The Table summarizes the results from three nested OLS regressions with risk taking as the dependent variable. Controlling for age, education and income, the coefficient of being female on risk taking drops somewhat but is still negative and significant ($p<0.001$). When also controlling for basic and advanced financial literacy, it is found that advanced financial literacy is positively correlated with risk taking ($p=0.001$) whereas basic financial literacy is not correlated ($p=0.723$).11 The female coefficient remains significantly negatively correlated with risk taking ($p<0.001$), although the inclusion of control variables (column 3 compared to column 1) decreases its size by more than one third.

	(1)	(2)	(3)
Female	-1.094	-0.800	-0.682
	(7.65)***	(5.53)***	(4.66)***
Age		-0.037	-0.051
		(1.23)	(1.68)*
Age^2		0.000	0.000
		(0.12)	(0.54)
Educ 2		0.158	0.055
		(0.58)	(0.20)
Educ 3		0.031	-0.075
		(0.10)	(0.24)
Educ 4		0.252	0.057
		(0.91)	(0.20)
Educ 5		0.737	0.466
		(2.17)**	(1.35)
Educ 6		0.339	0.120
		(0.83)	(0.30)
Inc 2		0.339	0.342
		(1.44)	(1.46)
Inc 3		0.444	0.413
		(1.82)*	(1.69)*
Inc 4		0.997	0.926
		(4.01)***	(3.71)***
Inc 5		1.128	1.035
		(4.11)***	(3.73)***
Inc 6		1.876	1.774
		(5.70)***	(5.34)***
Inc 7		1.663	1.539
		(5.39)***	(4.97)***
Basic FL			0.021
			(0.35)
Advanced FL			0.182
			(3.25)***
Constant	5.092	5.664	5.300
	(50.26)***	(9.35)***	(8.36)***
Observations	1132	1132	1132
R-squared	0.05	0.16	0.17
Robust t statistics in parentheses. * significant at 10%; ** significant at 5%; *** significant at 1%			

Table 1 Gender and Risk taking, OLS Regressions

Dohmen et al. (2010) have previously found cognitive ability to be positively related to risk taking measured by this type of question. There are also other studies relating cognitive ability to risk taking (Frederick 2005, Benjamin et al. 2006). The fact that an association between numeracy and risk taking was not found here suggests this relationship might be mediated by other variables, which is controlled for in our analysis. Simply correlating risk taking with numeracy, there is a significant correlation ($r=0.18$, $p<0.001$), whereas this relationship is no longer present once control for a number of other variables are applied. To what extent others' findings are driven by numeracy-like variables being correlated with other correlates of risk taking remains to be explored

V. DISCUSSIONS

Investor behaviour on the stock market is seen to be driven by irrational influences. Investor behaviour on the stock market is often seen to be a factor of cognition, emotion and social influences.

This paper contributes to the growing literature linking gender to economic decision making. Previous work on stock market participation has tended to focus on aspects like financial literacy, which is likely to be partly endogenous with regard to stock market experience. By contrast, basic financial literacy is likely to be exogenous to stock market participation for most individuals and is highly influenced by the gendered socialization of an individual. In a random sample, approximately representative of the Indian population, controlling for income and age, the study found that when it comes to risk attitudes, the gender gap remains

significant when controlling for financial literacy. Previous studies on financial literacy have not focused on explaining the gender gap in e.g. risk attitudes, with two exceptions. Dwyer et al. (2002) use data from a national survey of about 2000 mutual fund investors and find that women are less risk taking than men in their mutual fund investment decisions. The results suggest that the gender gap in important domains of economic decision making can be reduced with appropriate controls for financial literacy or related variables. Our results contribute to this line of research by using standard measures of financial literacy, by distinguishing between basic and advanced financial literacy, and by using a random sample that is broadly representative of the entire adult population

In many countries, policy reforms and financial development are increasingly putting individuals in charge of making key economic decisions, for example when it comes to saving for retirement. There is no a priori reason to expect men and women to respond the same way to these challenges. It is well established that men and women differ with regard to economic outcomes and also with regard to financial literacy. Improving our understanding of links between financial literacy and economic decision making is thus also important for understanding the observed gender differences in economic outcomes.

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