

Gender Differences in Investment Preferences

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Abstract

The paper attempts to explore how women and men differ in their individual investment preferences. Although there are some studies for the investors in developed countries, the subject has been overlooked in emerging and underdeveloped countries. Therefore, this study is the first empirical study exploring the investment behaviors of women and men by focusing on an emerging country, Turkey. For the purpose to find out how investment preferences of men and women differ towards six investment tools, namely, gold, foreign currency, funds, common stocks, real estates, and time deposits, a discriminant analysis and a logistic regression were exercised. The results revealed that while men investors prefer common stocks and real estate to invest women investors are more risk averse and invest fund, time deposit and gold. There is no significant difference between men and women in foreign currency investment.

Keywords: *Investment preferences, Gender, Individual investors, Turkey*

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Introduction

Gender differences in investing have been attracting high prominence in the academic agenda (Eckel and Grossman 2008). This has been largely attributed to gender differences in risk taking behavior by several scholars (Charness and Gneezy 2007; Bozkus and Ucdogruk, 2007; Eckel and Grossman 2008). Subsequently, it was evidenced that women are more risk averse than men and thus when it comes to investing they invest more conservatively and less in amounts than men. However, it is important to note that the studies on gender differences in investing have been mostly concentrated on data from developed countries, especially from U.S. (Charness and Gneezy 2007; Eckel and Grossman 2008; Jianakoplos and Bernasek 1998; Olsen and Cox 2001; Coleman 2003; Atkinson et al. 2003). Notwithstanding this it is widely acknowledged that people in developed countries differ drastically in many aspects, such as beliefs, life styles, behaviors, habits, personal characteristics, from those in emerging countries. Then, it may be expected that investment attributes of women living in developed countries differ from investment attributes of women living in emerging countries, such as Turkey. To illustrate, in an empirical study by Starr and Tran (2008) it was found that there is a much higher 'physical demand' for gold – that is, acquisitions of gold in physical forms such as jewelry, bars, coins and medallions- in Eastern countries, such as, India, Pakistan, Turkey, than in Western countries. It was shown that Vietnam's gold imports per capita were not far from those of France and Germany, despite the fact that per capita GDP in Vietnam is about 20 per cent that of France or Germany. Starr and Tran (2008) assert that culture seems involved since the countries that demand more gold than would be expected from their characteristics are those known for having traditions in which gold plays a part, as in India, Turkey, China where gifts of gold jewelry are customarily given to newly married couples, new-born babies. Thus, in Eastern countries, the role of gold as precautionary savings is at least as important as, if not more important than, its personal adornment aspect.

Therefore, it is important to study this issue for Eastern countries as well. We contribute to this line of research by examining gender differences in investment preferences in Turkey. To the best of our knowledge this is the first study that provides evidence on this issue from an emerging country, like Turkey.

The paper is organized in three parts. First, the brief reviews of literature in gender differences in risk preferences together with prior studies on gender differences in investment decisions are provided. In the second part, the modeling framework

and methodology are presented. In the last part, the discussion of results and conclusion, as well as, limitations of the study together with recommendations for future studies is provided.

Literature Review

Prior Studies on Gender Differences in Investment Decisions

The empirical study conducted by Estes and Hosseini (1988) is one of the earliest studies exploring gender differences in investment. The authors in their study attempted to identify the personal characteristics that influence confidence in an investment decision. It was evidenced that women had significantly lower confidence in an investment task than men, after controlling for all other relevant variables and characteristics including the amount of the investment decision itself. Familiarity with and present attitude about investing in the stock market, college credit hours in accounting and finance, experience in evaluating common stocks, the current level of the stock market, and the investment decision itself (the amount to be invested) were also found to be significant. On the other hand, age, value of personal portfolio, years of college and years of business experience were not found to be significant characteristics.

Similarly, in another study conducted by business students it was found that females are less likely to take business risks than males (Zinkhan and Karande 1991). More specifically, a study that was based on the 1989 Survey of Consumer Finances revealed that %57 of women was unwilling to take any financial risks as compared to %41 of men (Jianakoplos and Bernasek 1998).

On the other hand, in a more recent study by Charness and Gneezy (2007) on this subject area, stocks and personal businesses were categorized as more risky investments, whereas, certificates of deposits, government bonds and real estate were viewed as relatively low-risk and lower return investments. Subsequently, it was found that women choose to invest in stocks and personal businesses less often and in low amounts than men but they choose to invest more often and in high amounts in low-risk, lower return assets, the certificates of deposit and homes (Charness and Gneezy 2007; Eckel and Grossman 2008; Bajtelsmit and Bernasek 1996).

This conservative investment strategy was observed to become even more severe when a woman makes a long-term investment decision, such as pension fund investments. Although portion of this pattern was attributed to women's lower wealth accumulated by their lower incomes earned during their interrupted work lives (by

e.g. reproduction, nurturing of children and/or elderly people) that are most of the time at lower occupation levels than men, but the result persisted even after controlling for economic and demographic variables (Charness and Gneezy 2007; Eckel and Grossman 2008; Bajtelsmit and Bernasek 1996).

In addition, the conservative and risk averse investment strategy of women was evidenced to not differ regardless of occupation, as well as, the level of expertise and experience. It was found that even if a woman is a fund manager, she keeps her risk averse stance and thus offers her clients lower risk and lower return investment alternatives (Atkinson et al. 2003; Niessen and Ruenzi S., 2006). Similarly, if the woman is an angel investor, she then dares to invest less in amount and rather in later stages of investment projects, in relation to her male counterparts (Becker-Blease and Sohl 2008). This appears to be so even when decision-makers of both genders have the same level of expertise and experience. To illustrate, in a study focusing on professional men and women investment managers, it was found that when faced with social and technological hazards, women are more risk averse than men. It is found that women investors weigh risk attributes, such as possibility of loss and ambiguity, more heavily than their male colleagues. In addition, women tend to emphasize risk reduction more than men in portfolio construction.

On the other hand, the gender differences in financial investment decisions are an extremely primitive research area in Turkey yet. Unfortunately, there is not any published article on the topic exploring the subject area in-depth. Rather there are a few works that were written by Bozkus and Ucdogruk (2007) and Tunali and Tatoglu (2010), exploring Turkish households' investments choices in general.

Bozkus and Ucdogruk (2007) in their study of Household Investment Choices classify Turkish people's investment choices into four categories⁴;

1. Those who avoid risky ventures and investing in real estates.
2. Those investing in foreign currencies and gold
3. Those investing in common stocks, funds and bank accounts (registered investors)
4. Those investing in business (entrepreneurs)

On the other hand, in a more recent study by Tunali and Tatoglu (2010) investment choices were classified into seven categories, namely demand deposit, time deposit (TL or foreign currency), gold, treasury bill and government bond, real-estate,

4 Based on the downsizing of 12 different investment alternatives presented in the question of Turkish Statistics Foundation's (TÜİK) household budget survey's conducted in 2003.

automobile, stock exchange. Moreover, authors determined elements affecting investment choices by analyzing with multinomial logit model. They obtained a data of 1,300 respondents from public surveys conducted in the city of Istanbul in Turkey that can be accepted as a small sample of Turkey.

Gender Differences in Risk Preferences

The existence of gender differences in investing has been attracting a great deal of attention by scholars during the last two decades (Estes and Hosseini 1988; Zinkhan and Karande 1991; Bajtelsmit and Bernasek 1996; Embrey and Fox 1997; Jianakoplos and Bernasek 1998; Olsen and Cox 2001; Coleman 2003; Atkinson et al. 2003; Charness and Gneezy 2007; Bozkus and Ucdogruk 2007; Eckel and Grossman 2008; Becker-Blease and Soul 2008; Tunali and Tatoglu 2010). Moreover, several scholars in their studies concluded that the gender differences in investment behaviors occur rather as a result of gender differences in risk-taking behaviors (Estes and Hosseini 1988; Jianakoplos and Bernasek 1998; Coleman 2003; Atkinson et al. 2003; Charness and Gneezy 2007). Men and women respond to risk differently and by way of background this claim has been supported by numerous studies that women are more risk averse than men.

In the literature four explanations can be noticed for these gender differences in risk preferences. First, it was found that women and men may differ in their underlying attitudes or utility functions for risk. Cultural, social or psychological factors may cause men to bear more risk than women (Eckel and Grossman 2008). To illustrate, it was evidenced by Spigner et al. (1993) that women are less likely than men to engage in risky actions while doing sports and recreational activities but also in risky behaviors such as illicit drug use, gambling and criminal activities (Spigner et al. 1993).

Second, there are also several studies in the literature suggesting that gender differences in risk bearing might be due to differences in economic status (Estes and Hosseini 1988; Charness and Gneezy 2007; Bajtelsmit and Bernasek 1996). For example, women often have lower wealth accumulated by their lower incomes earned during their interrupted (by e.g. reproduction, nurturing of children and/or elderly people) work life under lower occupation levels than men. Then, if higher income workers were more willing to bear risk, men will be more risk bearing according to these differences in wealth and income (Bajtelsmit and Bernasek 1996; Hinz et al. 1997).

Third, women's longer life expectancy and greater probability of outliving their spouses could affect their willingness to accept financial risk. If individuals with a longer time horizon have a greater ability to bear risk women would be expected to hold riskier portfolios than men. (Hinz et al. 1997). However, just on the contrary, it can be expected that women follow a less risky investment strategy since Social Security units of almost all governments all around the world provides only a minimal level of financial support during retirement. Thus, women need additional financial resources that they can't risk, to maintain their standard of living during their retirement years (Bajtelsmit and Bernasek 1996; Coleman 2003).

Fourth, gender differences in risk taking may occur due to gender differences in information and confidence in their financial knowledge. To illustrate, it was found that women know less and are less confident about their knowledge of investments as compared to men, (Estes and Hosseini 1988; Barber and Odean 2001), which in turn result in women investing more conservatively and at the same time in less amounts than men (Eckel and Grossman 2008; Charness and Gneezy 2007; Becker-Blease and Soul 2008).

Then, this study aims at taking a step further and investigating the differences between women and men in particular investment decisions. The analysis is done among the six investment categories, namely gold, foreign currency, real estate, common stocks, time deposit and funds.

Modeling framework and methodology

In our analysis we used data from a web based survey which was conducted to Turkish individual investors. The survey was conducted online, because internet is the most appropriate medium to reach the desired model of internet users and opens the possibility of reaching investors outside of one geographical region. The target population was the people living in Turkey and having potential to invest in Turkey. The research was conducted with the participation of people from wide variety of occupations. The income levels of the participants were mostly middle and high income levels. The target population mostly consisted of educated people.

Responses submitted through the primary survey site were saved onto a file by tallying the e-mail addresses from each response set with the personalized mailing list. Of the approximately 11000 personalized e-mails sent out, 2131 were returned by the servers. Out of this lot, 95 of the responses were excluded because 35 of them have missing data and 60 responses were from the participants living outside the

Turkey. Therefore, data were collected from a total of 2036 respondents.

As mentioned previously this study mainly examines gender differences in investment preferences as an example from emerging country. We compared these two groups according to the six investment categories namely; real estates, foreign currencies, gold, common stocks, funds, and time deposits. For this comparison discriminant analysis and logistic regression were implemented. Discriminant analysis is a multivariate statistical method designed to study the differences between two or more groups with respect to several variables simultaneously. A Linear Discriminant function is in the form of

$$D = a_0 + a_1x_1 + a_2x_2 + \dots + a_nx_n$$

with x_i being the variables describing the data set. The parameters a_i have to be determined in such a way that the discrimination between the groups is best. Then the analysis was conducted to understand the investment differences between the individual male and female investors in Turkey. Investment tools were the predictor variables while whether the investor is male or female is the dependent variable of the model. We also ran a logistic regression analysis as a robustness check since logistic regression uses maximum likelihood estimation and estimates the probability of a certain event occurring.

$$\log it(p_1) = \log \frac{p_1}{1-p_1} = \beta_0 + \beta_1X_1 + \beta_2X_2 + \dots + \beta_kX_k$$

β_1 is interpreted as one unit increase in, X_1 it is expected that β_1 increase in the natural log of the odds of the dependent 1 or 0, given all of the other variables in the model are held constant. Then similarly, investment tools were the predictors and whether the investor is male or female is the dependent variable of the model. We also ran a logistic regression analysis as a robustness check since logistic regression uses maximum likelihood estimation and estimates the probability of a certain event occurring.

Table 1: Group statistics of males and females according to the six investment tools

Gender		%	# of investors
Female N=605	Common stocks	.07	44
	Fund	.16	99
	Time deposit	.27	163
	Foreign currency	.27	162
	Gold	.50	301
	Real estate	.11	68
Male N=1431	Common stocks	.18	254
	Fund	.11	162
	Time deposit	.22	320
	Foreign currency	.25	360
	Gold	.38	549
	Real estate	.28	400
Total N=2036	Common stocks	.15	298
	Fund	.13	261
	Time deposit	.24	483
	Foreign currency	.26	522
	Gold	.42	850
	Real estate	.23	468

Table 1 above shows the number of investors and percents in each category of investment for both groups of males and females. Significant mean differences were observed for all the predictors between male and female investors except the investing in foreign currency (see Table 2).

Table 2: Tests of Equality of Group Means

	Wilks' Lambda	F	Sig.
Common stocks	.982	38.019	.000
Fund	.995	9.713	.002
Time deposit	.998	4.937	.026
Foreign currency	1.000	.585	.445
Gold	.989	22.906	.000
Real estate	.967	69.312	.000

The discriminant function coefficients' indicate the unstandardized scores concerning the independent variables. It is the list of coefficients of the unstandardized discriminant equation. Each subject's discriminant score would be computed by entering his or her variable values (raw data) for each of the variables in the equation. The discriminate function of the model is:

$$D = -0,031 + 1,628 \text{ common stocks} - 0,965 \text{ fund} - 0,482 \text{ time deposit} + 0,017 \text{ foreign currency} - 0,815 \text{ gold} + 1,591 \text{ realestate}$$

The function reveals a significant association between the groups and all the investment tools except foreign currency. Since males in the model were coded by 1 and females were coded by zero, the predictors with positive coefficients such as common stocks and real estate noted that males invest more than females while the predictors with negative coefficients such as fund, time deposit and gold indicated that females invest more than males in those investment tools. The hypothesis that tests the coefficient of foreign currency if zero couldn't be rejected. So, foreign currency was found to be insignificant at the 5 % level of significance.

Below the logistic regression function is given as well. Results interpreted in the same way; positive coefficients mean that males invest more than females in that investment tool. All the coefficients except foreign currency were found to be significant at 5% significance level. Therefore, common stocks and real estates were preferred more by males than females but, fund, time deposit and gold were preferred by females more than males. Similarly, the logistic regression model also found no significant difference between men and women investing in their preference for foreign currency investments.

$$\log it(p_1) = \log \frac{p_1}{1-p_1} = 0.884 + 1.138 \text{ Common stocks} - 0.564 \text{ Fund} - 0.293 \text{ Time deposit} + 0.006 \text{ Foreign currency} - 0.486 \text{ Gold} + 1.10 \text{ Real estate}$$

Discussion of Results and Conclusion

Although it is difficult to designate in general a particular asset as riskless or risky, nonetheless there are several studies that categorize investment tools in relation to their risk levels. Based on the definition that risky assets are those generating "uncertain nominal cash flow", common stocks were noted as being the most risky investment tool, whereas time deposits as the least risky ones consistently across literature (Friend and Blume 1975; Schlarbaum et. al. 1978; Scooley and Worden 1996; Charness and Gneezy 2007). On the other hand, bonds, funds, real estates held for investment purposes, foreign exchange were cited as other risky assets. (Scooley and Worden 1996). In addition, precious metals -including gold- were also cited among risky assets in the literature (Schlarbaum et. al. 1978; Scooley and Worden 1996). However, contradicting with most of the earlier studies that classified gold as a risky one, gold was considered as a low risk asset in Turkey in the study by Tunalı

and Tatoglu (2010). This can be attributed to the role of gold in Turkish culture, which is assumed to be akin to Eastern culture, where gold is strongly embedded, as it was mentioned above.

Then, results of our analysis revealed that while individual men investors prefer common stocks and real estate to invest, individual women investors invest fund, time deposit and gold. No significant difference between men and women was found in investing foreign currency.

These results support the literature by validating the claim of "women are more risk averse than men" in Turkey. In other words, just as women in developed countries, women in an emerging country were evidenced to be more risk averse than men.

However, the result of gold being most preferred investment tool for every second Turkish woman reveals the strong role of gold in Turkish culture, just as in other Eastern culture countries.

Then, despite the fact that Kutan and Aksoy (2004) argued that the traditional role of gold is to disappear with the development of alternative financial markets, such as common stock market, our results show that this transition has not occurred yet and both for Turkish women and men since gold was found to be the most preferred investment tool. 50 % of women and 38 % of men noted to prefer gold as an investment tool.

Moreover, the next most preferred investment tool for Turkish women were evidenced to be time deposits and foreign currency, which are considered as relatively less risky investment tools when compared to funds and common stocks (Scooley and Worden 1996). Whereas, Turkish men, as the second most preferred investment choice, opted to invest in the house (real estate) that the family is living/will live due to their traditional role as the head of household. It should be noted that investment in real estate requires higher capital amounts in relation to other investment choices. Therefore, investment in real estate is possible only when the required amount of capital is possessed by the investor.

However, for Turkish women, investing in real estate was found to be among the last investment options (%11). But their preference should not be interpreted based on will rather it should be interpreted as that Turkish women might not have enough financial resources to invest in real estates.

Furthermore, as it was mentioned as an outcome of former model, Turkish men and women was not observed to differ in their investment preference of foreign cur-

rency. This can be explained by practical reasons. Since foreign currency together with gold are considered as the two investment tools that the individual Turkish investors can easily reach, buy and sell regardless of their investment amount, knowledge etc.

Although Kutan and Aksoy (2004), as well as, Berument and Kutan (2007) anticipated that the role of common stock market is to increase in the economic activity of Turkey, such an increase based on our results has not been observed yet. Investment in common stocks was found to be still among the least preferred investment choices for both Turkish men and women since common stocks are regarded as risky investment tools, whereas, real estates are regarded as non-risky investment tools.

On the other hand, bonds, which are also one of the traditional investment tools were initially planned to be investigated within this study. However, bond related data provided by the sample of the study was relatively scarce. Therefore, bonds were not included in the study. A future study may include bonds and provide a more complete picture of investment preferences Turkish women.

Additionally, besides gender, other socio-demographic characteristics such as age, income level, education level, marital status can be fundamental in predicting investment preferences of Turkish women. However, since the main focus of the study was not to investigate the relationship between socio-demographic characteristics and investment preferences of Turkish women, a future study can focus on the said relationship.

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