Does Gender Influence the Perception of Analyst Recommendations?

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This paper examines whether gender stereotypes influence how analyst recommendations are perceived. An experiment is conducted in which participants are given a series of analyst recommendations and asked to assign a weight to each one that indicates the extent to which that recommendation would influence their decision to invest in the shares of the company. Neither analyst gender nor congruency between analyst gender and the target gender of the firm's products significantly altered how analyst recommendations were perceived. This result was robust to the gender of the person reading the recommendation and to the type of analysis on which the recommendation was made. These results suggest that investors are not influenced by gender stereotypes when evaluating analyst recommendations.

Field of Research: Gender differences, Gender stereotypes, Analyst recommendations.

1. Introduction

Studies have found that men tend to more risk tolerant on average than women (Byrnes, Miller, and Schafer, 1999). This gender difference carries over into personal investment decisions. Men tend to allocate more wealth to risky assets than do women (Jianakoplos & Bernasek, 1998) and are 45% more active in trading common stock than women (Barber & Odean, 2001). Consequently, brokers tend to offer female investors lower risk/return investments than they do to males (Wang, 1994). Men are also more likely to stand by an initial investment decision than are women (Bateman, 1986).

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In the realm of professional investing, the results have been more mixed. Atkinson, Baird and Frye (2003) found that female and male mutual fund managers did not differ significantly in terms of their performance, risk, and other fund characteristics. Similarly, Mohan and Chen (2010) found that investment bankers were not influenced in the pricing of an IPO by whether the company was led by a male or female CEO. However, Olsen and Cox (2001) found that female chartered financial analysts and certified financial planners focused more on risk reduction whereas their male counterparts given the same target return focused more on increasing return.

Regardless of whether gender differences exist in analyst recommendations, it is possible than individual investors may hold gender stereotypes that cause them to react to the advice of male and female analysts differently. Gender stereotypes are common, even within the business world (e.g., Williams, Paluck, & Spencer-Rodgers, 2010). In addition, any gender stereotypes regarding analysts that do exist could depend on the congruency between the gender of the analyst and the recommended products. For example, McKimmie, Newton, Terry, and Schuller (2004) found that jury members were more convinced by expert witnesses whose gender matched the domain of the case (tires being an example of a male domain and cosmetics an example of a female domain). Finally, men and women could hold different gender stereotypes. Siegrist, Cvetkovich, and Gutscher (2002) find evidence of differences between males and females in their gender stereotypes of risk whereas Eckel and Grossman (2002) did not.

In this study, we examine whether gender stereotypes influence how analyst recommendations are perceived. This is done by conducting an experiment in which participants are given a series of analyst recommendations and asked to assign a weight to each one that indicates the extent to which that recommendation would influence their decision to invest in the shares of the company. The experiment is designed to answer the following two questions:

1. Are perceptions of analyst recommendations affected by the gender of the analyst?
2. Does congruency between analyst gender and the target gender of the firm's products influence how analyst recommendations are perceived?

In addition, the study addresses the issue of whether the gender of the person reading the recommendation and/or the basis on which the recommendation is made (earnings fundamentals, technical indicators, or the firm's corporate strategy) influences any observed gender stereotypes.

2. Literature Review

Gender stereotypes are beliefs about personality traits, physical attributes, job attributes, and roles of males and females. According to social role theory (Eagly & Steffen, 1984; Eagly, Wood, & Diekman, 2000), these gender-stereotyped beliefs can be attributed to people's everyday observations about men's and women's breadwinning and care-giving roles in society. Thus, men are more often perceived to be competent, confident, and independent while women are more often perceived to be warm, nurturing, and concerned about the feeling of others (Zenmore, Fiske, & Kim, 2000). In addition, masculinity and femininity roles and stereotypes have been linked to job attribute preferences, with power, leadership and earnings associated with masculinity and affiliation, nurturance and abasement (i.e., no power) associated with femininity (Williams & Best, 1990). Findings such as the tendency for women to shy away from competition (Niederle & Vesterlund, 2007) and for women with a greater distaste of competition being less likely to choose an occupation in law, business or management and more likely to choose one in education or health (Kleinjans, 2009) are consistent with such gender-stereotyped beliefs and gender roles.

Gender-stereotyped beliefs exist within the business realm. For example, a study conducted by Williams, Paluck, and Spencer-Rodgers (2010) revealed that both university students and working adults provided higher salary estimates for men than women to neutral job titles in both white and blue collar professions. Moreover, they also believed that men should earn more than women. Such findings are consistent with the proposed "male-wealth stereotype" where masculinity, more than femininity, is associated with wealth.

Besides influencing the earning power of men and women, gender stereotypes can influence financial compensation. For example, jury members have been found to be more convinced by the expert witness when the gender of the expert witness is congruent to the case domain – a male expert witness in a male-oriented case domain (tire/automobile service business) or a female expert in a female-oriented case domain (cosmetics sales business) – than when it is not (McKimmie, Newton, Terry, & Schuller, 2004).

In financial investment decisions, women are typically perceived to be more risk averse than men. Not surprisingly, women tend to be offered lower risk/lower expected return investments by their investment brokers than those offered to men (Wang, 1994).

Most studies have found that men and women do respond to risk differently, with men taking more risks than women; see Byrnes, Miller, and Schafer (1999) for a meta-analysis. For example, Eckel & Grossman (2002) found women are more risk averse on average than men in gamble choices: they are more than four times as likely as men to choose the risk-free gamble and only one-third as likely to choose the highest-risk gamble, although men and women did not significantly differ in estimated loss aversion. However, not every study has found significant gender differences in risk aversion or risk taking. In a recent study by Feng and Seaholes (2008), no gender differences were obtained in terms of portfolio return and trading activity for individual Chinese investors in China. An experiment with American undergraduate students by Schubert et al. (1999) also failed to find evidence of gender differences in risk aversion.

In terms of specific investment behaviors, women have been found to allocate less wealth to risky assets than men of equal economic status (Jianakoplos & Bernasek, 1998). Barber and Odean (2001) reported that men 45% more active in trading common stock than women, attributed to men being more confident about investing than women. Women also appear less inclined to invest in the currency market to avoid potential losses from the fluctuation of exchange rate (Powell & Ansic, 1997). Finally, in an escalation of commitment experiment by Bateman (1986), males were found more apt to stand by an initial investment decision than were females.

Several studies have sought to identify the factors underlying gender differences in risk preferences. Meier-Pesti and Penz (2008) found that masculine traits such as competitiveness were positively related to risk-taking, but not feminine traits such as affinity. He, Inman, and Mittal (2008) reported that men are sensitive to their perceived ability, skills or resources in decisions that are driven by the maximization of gains (e.g., investment decisions), whereas women are sensitive to their perceived capability in terms of ability, skill set or resources in decisions that are driven by the minimization of losses (e.g., insurance decisions). Fehr-Duda, Gennaro, and Schubert (2006) found that women had more curvature in their probability weighting functions than did men, and thus would tend to overweight small-probability extreme outcomes and underweight large-probability extreme outcomes more than would men.

The previous studies examine risk taking and financial investing at the personal level. Several studies have examined the issue of gender differences and stereotypes with respect to professional investing. A study conducted by Atkinson, Baird and Frye (2003) revealed that female and male mutual fund managers did not differ significantly in terms of their

performance, risk, and other fund characteristics. However, Olsen and Cox (2001) found that female chartered financial analysts and certified financial planners were more focused on risk reduction whereas their male counterparts were more focused on increasing return, given a target return. In a study by Mohan and Chen (2010), investment bankers in the financial markets did not exhibit gender bias in the pricing of public stock offerings of companies that were led by either male or female CEOs. It was found that if expertise and knowledge are deemed equivalent between men and women, the pricing of the company stock was dependent on the company's characteristics and profitability.

Finally, a few papers have studied the issue of whether men and women stereotype similarly or differently. Siegrist, Cvetkovich, and Gutscher (2002) found that and women tended to overestimate the risk seeking tendency of men but accurately estimated the risk seeking tendency of women. However, Eckel and Grossman (2002) found a consistent pattern in both men and women underestimated the risk seeking tendency of both genders. They also found that men tend to underestimate women's risk seeking tendency more than women themselves. Thus, the question of gender differences in the gender stereotyping of risk preferences is an open one.

3. Methodology

A total of 96 full-time undergraduate students (26 females and 70 males) who were enrolled in an upper-level finance course participated in the study. Each student completed an anonymous questionnaire that contained six brief analyst recommendations. The recommendations were based on excerpts from actual recommendations that were taken from financial websites such as CNBC. A total of 12 different recommendations were used in the study. Four of the recommendations focused on company fundamentals, with an example being:

> "Revenues are growing faster and sooner than expected and cost controls are working better than modeled. I expect EPS growth of over 20% in 2010 and 20% in 2011."

Another four were based on technical indicators, such as:

> "I believe that the shares are poised for a rebound as investors look closer at small-cap stocks that have not participated in the market rally yet are showing positive earnings momentum."

The final four recommendations focused on issues related to corporate strategy. An example of this type of recommendation was:

> "The firm has positioned itself for strong growth of its key brands. Sales have shown strong year-over-year performances in all of the firm's key geographic regions."

The 12 recommendations were checked to ensure that each one was sufficiently generic so that it could apply to any of the firms used in the study.

Each recommendation was prefaced by an introductory sentence that included the name of the analyst making the recommendation and the company to which the recommendation applied. A total of 12 analyst names were used: six male and six female. These names, which were constructed by combining common Western surnames and family names, are provided in Table 1. Each name was checked by a group of volunteers to ensure that it did was not associated with any well-known person and that it otherwise did not convey any significantly positive or negative image.

Table 1
Analyst Names for the Experiment

Female	*Male*
Amanda Miller	David Taylor
Kimberly Jones	Jack Wilson
Lisa Moore	Josh Williams
Madison Clark	Matthew Brown
Michelle Johnson	Michael Davis
Sarah Green	Tom Smith

Twelve companies were included in the study. Each firm was a member of the Forbes 1000, was based either in Canada or the United States, and had familiar brands. These are shown in Table 2. Six of the firms have products that are more oriented towards male consumers; the products of the other six firms are more targeted towards females. Each pair of firms was matched by industry and Forbes 1000 ranking to ensure that they were comparable in terms of market sector and size. It should be noted that most of these firms do not appeal exclusively to either males or females. However, within each pair, one of the firms has products that are used much more frequently by females than those of the other firm. In addition, sensitivity analysis indicated that the results provided in the paper were not sensitive to the exclusion of any pair of firms from the sample.

Table 2
Companies for the Experiment

Industry category	*Female-oriented*	*Male-oriented*
Consumer durables	Whirlpool	Genuine Parts
Drugs and biotechnology	Johnson & Johnson	Pfizer
Food, drink and tobacco	Cadbury	Carlsberg
Food, drink and tobacco	Campbell Soup	Molson Coors Brewing
Retailing	Shoppers Drug Mart	AutoZone
Retailing	Esprit Holdings	Sherwin-Williams

The six recommendations on each questionnaire consisted of one pair from each of the three categories of analyst recommendations (company fundamentals, technical indicators, and corporate strategy). One female analyst and one male analyst, along with one pair of matching companies, were chosen for each pair of recommendations. The order in which the two analysts and two firms appeared within each pair of recommendations was randomized, as was the order in which the six recommendations were presented. Counterbalancing was performed to ensure that each analyst, company, and recommendation appeared with the same frequency across the questionnaires. Counterbalancing was also performed to ensure that each of the 12 combinations of analyst gender (male vs. female), company type (male-oriented product vs. female-oriented product), and recommendation basis (company fundamentals, technical indicators, and corporate strategy) appeared the same number of times on the set of questionnaires.

After reading each recommendation, participants were asked to rate how much weight they would put on that recommendation when deciding whether to buy that stock. Responses were measured using a seven-point Likert scale, with 1 indicating 0% weight (i.e., the recommendation would be ignored) and 7 indicating 100% weight (i.e., the recommendation would cause the respondent to buy the stock). The instructions emphasized that each analyst recommendation was to be evaluated independently of the others. Sufficient time was provided to complete the questionnaires so that no participant felt any time pressure.

Due to concerns that participants might seek to make their responses "socially acceptable," the true purpose of the study was not fully disclosed beforehand. Instead, participants were informed that the study was about "how analyst recommendations influence investment decisions." The

inclusion of different types of analyst recommendations also helped to mask the true purpose of the study and thus served to increase validity. A debriefing session, in which the true purpose of the study was revealed, was conducted at the conclusion of the experiment.

The data was analyzed using a mixed model, with recommendation weight as the repeated-measures dependent variable. The model included three within-subject fixed factors: analyst gender (male vs. female), company type (male-oriented product vs. female-oriented product), and recommendation basis (company fundamentals, technical indicators, and corporate strategy). Respondent gender (male vs. female) was included as a between-subjects fixed factor. Finally, participant ID was included as a random effect. The model was run both with and without first- and second-order interaction effects.

4. Findings

The responses to the questionnaires are summarized in Table 3. Overall, female participants gave the analyst recommendations lower weight than did male participants (4.47 vs. 4.70). This difference, though marginally insignificant ($p = .107$), is consistent with previous findings that females tend to be more cautious when investing than do males (Jianakoplos & Bernasek, 1998; Barber & Odean, 2001). The variability of the weight given to the analyst recommendations displayed no difference between male and female respondents.

Both female and male participants gave slightly higher weight to recommendations made by male analysts than to the recommendations when they were made by female analysts, though neither difference was statistically significant. Additionally, both males and females gave higher weight to recommendations about the more female-oriented firms than to those about the more male-oriented companies. Controlling for the influence of analyst gender, this difference was statistically significant ($p = .046$) for male participants but not for female participants. One potential explanation for this result is that, whereas female participants were roughly equally familiar with both sets of firms, male participants were much less familiar with the female-oriented firms than the male-oriented ones and thus were willing to give more weight to analyst recommendations about these firms.

No significant interaction effects were found between the gender of the analyst and the targeted gender of the firm that was being recommended by the analyst. Male participants were very consistent in their ratings: the recommendations by female analysts were given slightly more weight than

those made by male analysts for both male- and female-oriented firms; meanwhile, the recommendations given for female-oriented firms were given more weight than those for male-oriented firms regardless of whether the analyst was male or female. In contrast, female participants gave higher weight to recommendations made by analysts whose gender differed from the targeted gender of the firm than recommendations made by analysts whose gender matched the company's target gender. However, this interaction effect was not statistically significant. In sum, the results show no evidence of gender stereotypes in analyst recommendations: recommendations about male-oriented firms were not given significantly more weight when made by a male analyst rather than a female analyst and neither were recommendations about female-oriented firms given significantly more weight when made by female analysts than by male analysts.

Table 3
Average Weighting Assigned to Analyst Recommendations

Analyst recommendation	Gender of respondent		
	Female	Male	All
All	4.47	4.70	4.64
By female analyst	4.36	4.67	4.59
By male analyst	4.59	4.73	4.70
Of female-oriented company	4.50	4.82	4.74
Of male-oriented company	4.45	4.58	4.54
By female analyst of female-oriented company	4.23	4.75	4.60
By female analyst of male-oriented company	4.57	4.57	4.57
By male analyst of female-oriented company	4.93	4.92	4.93
By male analyst of male-oriented company	4.37	4.59	4.53

Weights were measured using a 7-point Likert scale, with 1 = 0% weight and 7 = 100% weight.

No significant variation in gender effects were found across the type of recommendation. However, the gender effects noted above were larger on average for recommendations that were based on fundamentals analysis than on technical analysis or strategic considerations. Though not gender-related, one clear pattern across recommendation type did emerge. Participants gave much higher weight to recommendations that were based on fundamental analysis (4.92) than to those that were based on either technical analysis (4.46) or strategic considerations (4.54). This

difference, which was highly significant (p = .001), was more pronounced for male participants than for female participants. This result is consistent with an emphasis in most introductory finance courses on fundamental analysis (i.e., net present value) and relatively little time spent on either technical analysis or the impact of corporate strategy on firm value.

5. Conclusion

In this paper, an experiment was conducted to examine whether the perception of analyst recommendations is influenced by gender stereotypes. No evidence of any gender stereotypes was found. Recommendations made by male analysts were not given significantly different weight than were equivalent recommendations from female analysts. Similarly, recommendations about firms with male-oriented products were not given significantly more weight when made by a male analyst than by a female analyst, nor were recommendations about firms with female-oriented products given significantly more weight when made by a female analyst than by a male analyst. These findings were robust to the gender of the person reading the recommendation and the basis on which the recommendation was made (earnings fundamentals, technical indicators, or the firm's corporate strategy).

Our finding of no significant gender stereotypes related to analyst recommendations is consistent with the results of Mohan and Chen (2010), who found that investment bankers did not exhibit any bias in IPO pricing based on whether the firm's CEO was male or female. This suggests that individuals are able to put aside any gender stereotypes that they might hold when making financial decisions. It would be instructive to examine whether there is no impact of gender stereotype in other types of financial decisions and/or in other important business or economic decisions.

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