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# Does knowledge of finance mitigate the gender difference in financial risk-aversion?<sup>☆</sup>

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## ABSTRACT

We investigate the gender difference in financial risk aversion using a survey of finance professors from universities across the United States. We compare their actual portfolio allocations to that of respondents in the Federal Reserve's Survey of Consumer Finances (SCF). We find that among highly educated individuals, women are significantly more risk averse than men. However, we find that when men and women have both attained a high level of financial education, they are equally likely to invest a significant portion of their portfolio in risky assets, suggesting that financial education mitigates the gender difference in financial risk aversion.

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## 1. Introduction

There is evidence in the finance literature that gender plays a role in the individual/household portfolio allocation decision, where women tend to invest more in low risk investments and hence are found to be more risk-averse than men.<sup>1</sup> However, most studies that find gender to be a significant determinant of risk aversion also find various proxies of the level of education to be significant. In addition, even when gender is insignificant, risk aversion has been found to be inversely related to the level of education.<sup>2</sup> There is also

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<sup>1</sup> See for example Cohn et al. (1975), Sunden and Surette (1998), Jianakoplos and Bernasek (1998), Bajtelsmit et al. (1999), Bernasek and Shwiff (2001), Dwyer et al. (2002), Felton et al. (2003), Agnew et al. (2003) and Watson and McNaughton (2007).

<sup>2</sup> Riley and Chow (1992) use data from the Survey of Income and Program Participation (SIPP) and conclude that relative risk aversion is inversely related to education, but unrelated to gender.

a growing body of research that documents a positive relationship between financial education/knowledge and the propensity for investing in risky assets.<sup>3</sup> In this paper we investigate if the gender difference in risk aversion reported in prior studies is confounded by gender biases in the level of education and/or knowledge of finance.

To disentangle the gender bias from any education/finance knowledge bias, we use two datasets in our empirical investigation. The first dataset is the 2004 Federal Reserve Board's Survey of Consumer Finances (SCF), which is a triennial survey of the balance sheet, pension, income, and other demographic characteristics of U.S. families that has been used by researchers to investigate the individual/household portfolio allocation decision. This survey allows us to investigate the gender difference in risk aversion among individuals who have attained different levels of formal education. We find that in the SCF sample, women are significantly more risk-averse than men. We also find that income and education are the most important variables in explaining the individual's level of risk aversion in this sample. Using the SCF data, we also investigate the gender difference in risk aversion among individuals who have completed at least a college degree. Even in this sample of highly educated individuals we find women to be significantly more risk averse than men. These results suggest that education in general does not mitigate the gender difference in risk aversion.

Our second dataset is the result of a survey of finance professors. During the fall of 2007, we surveyed finance faculty at universities across the United States and collected information on their actual investment holdings as well as their household and other demographic information. Since all individuals in this sample have achieved at least a graduate finance degree, we implicitly control for the level of financial education. Using this sample, we find that when individuals have the same level of financial education, there is no gender difference in the level of risk-aversion.

The reduced gender difference in risk aversion observed in the finance faculty sample may be due to the women (men) in this sample being less (more) risk-averse than their respective counterparts in the SCF sample.<sup>4</sup> We investigate which of these scenarios is more likely to occur by comparing the risk aversion of men and women in the finance faculty sample to the risk aversion of the men and women with a college degree in the SCF sample. We find that increased financial education results in greater affinity for risk-taking for both men and women.

Whereas most prior studies that have investigated the gender difference in risk taking have focused primarily on retirement savings, in this study we investigate the asset allocation in direct investments. In addition, to the best of our knowledge we are the first to investigate the effect of formal education in finance on the risk aversion of men and women. Based on the analysis of the investor's direct investments we find that investors with advanced education in finance are less risk averse and that financial education does mitigate the gender difference in risk aversion.

## 2. Literature review and research questions

### 2.1. Gender difference in asset allocation

There is empirical evidence that compared to men; women invest less in risky assets. [Sunden and Surette \(1998\)](#) use data from the 1992 and 1995 SCF and find that women are less likely to have a defined contribution (DC) plan than men and both gender and marital status significantly affect the actual allocation of assets.<sup>5</sup> [Jianakoplos and Bernasek \(1998\)](#) use data from the 1989 SCF to examine the household holdings of risky assets and find that gender differences are influenced by wealth, age, race and the number of children in the household. [Bajtelsmit, Bernasek, and Jianakoplos \(1999\)](#) use data from the 1989 SCF and find that women exhibit greater relative risk aversion in their allocation of wealth into DC pension assets. [Bernasek and Shwiff \(2001\)](#) survey a sample of 270 faculties at five universities in Colorado in the year 2000 and find that gender is a consistently significant factor in explaining the percentage of an individual's retirement fund invested in stocks, with the percentage decreasing if the respondent is a woman. [Agnew, Balduzzi, and Sunden \(2003\)](#) study 6778 retirement accounts during the period April 1994–August 1998 and find that men invest more in

<sup>3</sup> See for example [Joo and Grable \(2005\)](#), [Bernheim and Garrett \(2003\)](#), [Bernheim, Skinner and Weinberg \(2001\)](#) and [Christiansen et al. \(2008\)](#).

<sup>4</sup> There is also the possibility that both scenarios occur.

<sup>5</sup> [Sunden and Surette \(1998\)](#) acknowledge that they find “surprisingly” that education and age do not affect the allocation decision.

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