



Full length article

Cultural influences on risk tolerance and portfolio creation



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ABSTRACT

We extend existing research that examines the impact of culture on risk tolerance. Using surveys completed by Chinese and American students, we find, consistent with previous studies, that Chinese students perceive themselves as more risk tolerant. However, we find that Chinese students are less consistent in matching their perceived tolerance levels with actual scores from a standard risk tolerance assessment. Further, we also examine mock portfolios created by the respondents and find no evidence that Chinese students create portfolios that are riskier than their American counterparts. Our findings suggest that differences in risk tolerance are at least partially a product of culture, but such differences may not always translate into actual investment decisions.

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1. Introduction

Since Markowitz (1952) published his seminal work on efficient portfolios, academics and practitioners alike have sought ways to create portfolios containing the optimal balance of risk and reward. Generally speaking, this construct is associated with one of the most fundamental investment principles—a higher level of risk will only be accepted in exchange for a higher level of expected returns. However, while all investors may theoretically seek to maximize this tradeoff, in reality individual investors often choose the risk aspect of their portfolios based on their individual risk tolerance levels, which, for various reasons, may be less than objectively (i.e., rationally) determined.

While Markowitz (1952) suggests that all investors face the same tradeoff, and should therefore hold the same efficient portfolio, we recognize that in reality not all

investors “price” risk in the same way. For some, excessive risk is the price they are willing to pay in exchange for seeking immense reward—i.e., the potential for a high outcome outweighs the additional risk of loss. For others, the stability of the reward is most highly valued, suggesting that such investors may forgo assets that could create more efficient (and higher return) portfolios, simply because they are uncomfortable taking on the added risk that such an asset would bring.

This “mispricing of risk”, for either those seeking excessive risk or for those seeking excessive stability, may be the result of at least two possible influences, both of which may be culturally conditioned. First, people (and people groups) obviously have different personalities, which likely leads to differences with regard to how they emotionally respond to loss (i.e., how they price risk). In an investing scenario, this emotional/psychological response may be proxied by a standard measure of risk tolerance. Second, while some investors may not exhibit emotional bias and therefore do accurately price risk, they may lack the knowledge to adequately implement their risk tolerance into appropriate portfolios. In either

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case, the portfolios of such investors may be less than optimal.

As a natural follow-up, we seek to determine if cultural differences influence one (or both) of these potential mispricing issues. In particular, we focus primarily on the potential differences between Chinese and American business students. We find, consistent with most prior studies, that Chinese students consider themselves to be more risk tolerant than their American counterparts, which may be driven by underlying cultural differences. We also find that the Chinese students receive higher scores on a standardized risk tolerance assessment, which is consistent with their perception of higher tolerance. However, it appears that the Chinese students are less able to accurately predict their risk tolerance ratings, particularly when comparing their perception of risk tolerance to their scores on the assessment.

To examine the potential impact of these differences, we ask students to select mock portfolio asset allocations. Given the higher risk tolerance for Chinese students, we would expect their portfolios to exhibit higher risk/reward attributes. Despite this, however, the Chinese students do not create higher risk portfolios. Rather, they select a higher percentage of money market instruments and government bonds in lieu of equities. Ultimately, we find the portfolios created by the Chinese students have approximately the same risk level, on average, as the portfolios of their American student counterparts.

In sum, while our study supports the finding that the Chinese culture encourages higher risk tolerance levels, this risk tolerance does not seem to be backed with expected financial activities by students, suggesting that other factors may offset the cultural influence that Chinese market participants would otherwise exhibit. Our findings are consistent with differences in both culture and knowledge, the latter of which perhaps provides evidence for the contention of [Fan and Xiao \(2006\)](#) that Chinese individuals are generally less proficient with regard to financial knowledge. This contention is anecdotally appealing, given the fact that investing in Chinese financial markets is a relatively new phenomenon for Chinese citizens. While the US financial history is deep, many Chinese investors have never experienced a culture where investing in financial assets is the norm. This lack of historical experience would naturally suggest less financial literacy regarding financial market assets and activities.

2. Chinese culture and financial decision making

Culture is an organic component of one's attitude towards all aspects of life, including financial decision-making. Understanding this influence is a critical component of creating an investment portfolio that matches the objectives of the individual, which is a notion that has not escaped the attention of researchers. For example, [Statman \(2008\)](#) examines risk tolerance in more than 20 countries and determines that significant differences exist in the way different cultures approach risk-taking activities.

Given our focus on the differences between Chinese and American investors, studies that examine these

specific markets are of particular relevance. For example, [Bontempo et al. \(1997\)](#) examine business students and security analysts in both Eastern and Western cultures. They conclude that there are cultural differences between Chinese and Westerners in terms of risk perception. One well-documented manifestation of this difference (e.g., [Charmon and Prasad, 2010](#)) is the higher levels of savings rate among Chinese. [Wei and Zhang \(2011\)](#) suggest the increased savings rate is due to the higher ratio of male to females due to the one-child law, which they suggest explains about half of the increase in the savings rates. Others, however, have argued it is simply a manifestation of the Confucian lifestyle of self-discipline—i.e., the potential impact of culture. For example, [Xiao and Fan \(2002\)](#) find that Chinese workers are more likely to report a motivation for saving to simply be “investment in the future”.

Similar to the approach we employ, other studies have used university students as a fertile testing ground. For example, [Fan et al. \(1998\)](#) find that American students are more willing to take risks in the job market, but Chinese students are more willing to take risks with financial investments (at least perceived risks). Similarly, [Weber and Hsee \(1998\)](#) find that Chinese students are more risk tolerant in pricing risky financial options, and [Hsee and Weber \(1999\)](#) find that the Chinese are generally more risk tolerant in financial activities, but not medical or academic decisions. These results are also largely consistent with [Weber et al. \(1998\)](#), who find that Chinese and German proverbs provide more risk seeking advice than American proverbs, but only related to financial decisions and not social decisions.

One primary drawback of these studies is a focus on perceived risk tolerance and not actual portfolio decisions. As such, [Fan and Xiao \(2006\)](#) extend those studies mentioned above by examining investment behavior, and not just attitude towards risk. Using a sample of Chinese and American workers, they find that Chinese workers have a higher risk tolerance and are more likely to participate in risky financial market transactions. Given the use of actual portfolio selections (and not just perceived self-reported tolerance), our study most closely follows [Fan and Xiao \(2006\)](#). However, while we use a similar approach, our study differs in numerous ways.

First, we incorporate a more rigorous examination of risk tolerance, using a well-documented 13-question survey designed by [Grable and Lytton \(1999\)](#). Second, and more importantly, we more fully examine investment behavior in relation to perceived tolerance. For example, [Fan and Xiao \(2006\)](#) define risk-taking behavior using a dummy variable measuring the use of stock investment, whereas we ask respondents to create a mock portfolio that matches their desired risk level. This portfolio can include equity ownership of various types (small cap, large cap, international), as well as debt (corporate and government) and money market instruments.

Third, the use of both a subjective measurement of risk tolerance and a purely objective questionnaire similar to that used by the Survey of Consumer Finances allows us to measure the degree to which Chinese or American respondents can accurately predict their risk tolerance.

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