

# Threat, Intimidation, and Student Financial Market Knowledge: An Empirical Study

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**ABSTRACT.** Threat emanating from financial markets may intimidate college students to some degree. In this article, the authors considered the influence of such intimidation on student financial market knowledge. They hypothesized a negative relationship between intimidation and market knowledge. An empirical study of over 150 undergraduate business school students at a regional university supported the hypothesized relationship. The authors found that introducing venues that permit experiential learning into college programs, perhaps assisted by Web-based technologies, may counter the effects of market intimidation on financial education.

Key words: cognition, decision-making, financial markets, learning processes

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A significant number of researchers have studied student attitudes toward economics and finance, and the influence of these attitudes on learning and academic performance (e.g., Becker & Walstad, 1987; Phipps & Clark, 1993). Extant work has largely focused on student perceptions of the academic disciplines themselves. For example, Soper and Walstad's (1983) scale included items to measure attitudes toward studying economics, about economics as a subject, and about attending economics lectures.

Student perceptions of empirical market environments and how these perceptions shape related cognitive and affective development are the less explored areas. Processes by which issues are interpreted in relationship to environments are important factors in understanding individual decision making and organizational effectiveness (Daft & Weick, 1984; Thompson, 1967). For example, individuals tend to respond differently to environmental contexts depending on whether they perceive threat or opportunity (Dutton & Jackson, 1987). As such, how college students perceive market environments may influence development of financial knowledge and skills.

In this article, we extend the literature by considering the influence of market perceptions on student learning. In particular, we investigated the relationship

between the degree to which students perceive financial markets as threatening and their market understanding and awareness. First, we argued for a threat bias in student perceptions about markets and suggested a negative relationship between feelings of threat and intimidation and market-related cognition. We then tested a series of related hypotheses in an empirical study of over 150 undergraduate business school students at a regional university. We conclude this article by discussing the implications of our findings for both research and practice.

## Theory and Hypothesis

*Threat* constitutes an environmental situation perceived as having negative or harmful consequences (Lazarus, 1966). An obvious threat posed by markets relates to potential for financial loss. Among college students, perceptions of threat emanating from financial markets may vary considerably. Coursework (Krishnan, Bathala, Bhattacha, & Ritchey, 1999; Pritchard, Potter, & Sacucci, 2004) and societal cues that portray markets as difficult to successfully navigate (e.g., Lim, 2004) may evoke perceptions of threat. Whereas, high levels of confidence in one's decision-making ability (Daniel, Hirshliefer, & Subrahmanyam, 1998; Stone, 1994) or optimism that comes from youth, inexperience, or the relatively long invest-

ment pay-off time (e.g., Wood & Zaichkowsky, 2004) may cause students to view markets more opportunistically.

Research results suggest that decision makers reflect a *threat bias* when interpreting issues (Jackson & Dutton, 1988). This means the individuals appear to be more sensitive to information that suggests presence of a threat than they do to information that suggests presence of an opportunity. Moreover, attributes often employed to distinguish threat from opportunity, such as potential for loss or gain and controllability (Dutton & Jackson, 1987), tend to reflect opposite ends of a continuum (e.g., an opportunity resembles a negative threat). Given the threat bias tendency and the construct's nature, we focused on threat and its relationship to college students' understanding of financial markets.

Threatening situations often induce psychological responses of fear, stress, and anxiety (Staw, Sandelands, & Dutton, 1981; Unger, Evans, Rourke, & Levis, 2003). How these psychological responses manifest in behavior may depend on the perceived certainty and controllability of the threat (Chattopadhyay, Glick, & Huber, 2001). Threats perceived as certain and controllable might motivate behavior to face the threat head on (Ocasio, 1995). Individuals in such situations may become risk takers because they have little to lose (Kahneman & Tversky, 1979). Successful investors might historically fit this profile in the financial market context because they may consider themselves skillful enough to overcome the threat.

Often, however, individuals and groups perceive relatively little control over the negative consequences of threat (Dutton & Jackson, 1987). In such situations, fear may induce behavior aimed at avoiding the threat (Newhagen, 1998; Unger et al., 2003). Uncontrollable threats might also foster rigid behavior (Mone, McKinley, & Barker, 1998), often expressed as information-processing restrictions or centralized control (Staw et al., 1981). For example, inexperienced participants in the financial markets may be more prone to view a threat as uncontrollable and seek to restrict financial information flow or to avoid markets altogether.

Avoidance and rigidity reactions to threat often coincide with excessive levels of fear and anxiety (Schein, 1985). One term that reflects well this blend of negative emotion and behavior is *intimidation*. Researchers have employed intimidation in other research domains to describe states of extreme fear or lack of self-confidence in threatening situations (e.g., Seabrook, 2004; Shields, 1999). In a financial context, intimidation can be viewed as the negative emotional and behavioral response to market-related threats perceived as uncontrollable.

The extent to which students feel intimidated likely influences their knowledge and understanding of financial markets. Financial market knowledge can be separated into two general categories: (a) *theoretical knowledge* and (b) *practical knowledge*. Theoretical knowledge is largely conceptual and is based on a theory often learned in the college classroom. Efficient market theory (Fama, 1970), capital asset pricing (Sharpe, 1964), and options theory (Black & Scholes, 1972) are good examples of theoretical knowledge.

Practical knowledge is largely empirical and is based on a working understanding of relevant factors and relationships that shape markets in action. Price levels and trends, and grasp of structural factors influencing market behavior are good examples of practical knowledge. Accounts of successful financiers (e.g., Soros, 1987; Steinhardt, 2001) suggest these individuals possess acute understanding of such contextual details. Cognitive processes for developing practical knowledge often shape intuitive decision-making capability (Simon, 1987). Empirical accounts suggest many financial decisions require such intuitive capability (Schwager, 1989).

Research results suggest that intimidation may hinder development of market knowledge in college students (Staw et al., 1981). Staw et al. found that intimidated students might engage in rigid behavior, such as restricting market information flow or ceding control of financial matters to someone else. Intimidated students might also avoid financial markets altogether. Because practical knowledge is commonly obtained through reality-based venues (Chiesi,

Spillich, & Voss, 1979; Leonard & Swap, 2005), practical market knowledge development could be particularly impaired. Intimidated students might be less likely to immerse themselves in empirical contexts necessary to develop practical knowledge. As such, intimidated students might know less about financial markets and be less aware of market conditions than are less intimidated peers. Therefore, we posited that:

$H_1$ : Intimidation is negatively related to financial market knowledge among college students.

Intimidation could also influence a student's interest in financial markets. *Interest* can be defined as an experiential state characterized by focused attention on an issue and accompanied by feelings of pleasure and concentration (Krapp & Renninger, 1992). Interest can be a powerful motivator and a key determinant in intrinsic motivation, self-determination, and learning (Steinmetz & Patten, 1967).

Student interest in financial markets could be impaired by intimidation. Rigid or avoidance behavior manifested in the intimidation response arises from the impression that a threat is uncontrollable (Mone et al., 1998). A sense of incompetence may arise, as students perceive they are unable to cope with market threats in a proactive manner. Feelings of incompetence reduce interest (Vallerand & Reid, 1984). Moreover, because interest can be linked to experience (Krapp & Renninger, 1992), behavior that reduces an intimidated student's exposure to financial markets could stunt interest. It follows that:

$H_2$ : Intimidation is negatively related to financial market interest among college students.

## METHOD

### Sample

Respondents for this study were undergraduate business school students enrolled at a regional public university. Business school enrollment included approximately 2,100 undergraduates at the time of the study. Using extra credit as incentive, we solicited participation from students in 7 undergraduate class

sections: (a) 4 core management courses required for all business majors, (b) 1 management elective, and (c) 2 finance electives. Overall, 157 students participated in the study.

The demographic profile of the respondents (Table 1) reflects the convenience nature of the sample. The sample was weighted toward finance and management majors because we drew students from courses in these disciplines. We categorized about 20% of the sample as "Other." Most of these students were from disciplines outside the college and were taking business classes as electives or to satisfy core curriculum requirements. Most participants were aged 20–25 years. Nearly 4 out of 5 participants were of junior class standing or higher.

Participants completed a questionnaire that captured measures of the key constructs of this study, along with background data for control variables.

We describe these measures in the following section.

## Measures

### Main Study Variables

*Intimidation.* Intimidation was measured on a 10-item scale that reflected the construct and its emotional and behavioral implications (e.g., "Financial markets make me feel uneasy."). The items for all scales (1 = *strongly disagree*, 5 = *strongly agree*) used in this study and the coefficient alphas where appropriate appear in the Appendix. A coefficient alpha of .93 for the 10-item intimidation scale suggested high interitem reliability.

For each student, we combined responses to the individual items into an average score. Overall mean for the intimidation scale was 2.54, suggesting that the average student did not appear overwhelmingly intimidated by financial markets. Although this is somewhat

interesting, our main concern is the hypothesized negative relationship between intimidation and market knowledge. Table 2 shows descriptive statistics and bivariate correlations for all variables used in this study.

*Interest.* Interest was measured using an eight-item scale (1 = *strongly disagree*, 5 = *strongly agree*; e.g., "I have interest in how markets work."). A coefficient alpha of .87 for this scale suggested high interitem reliability. For each student, responses to the individual items were combined into an average score. Overall mean for the interest scale was 4.01, suggesting considerable average level of interest in financial markets among participants.

*Financial market knowledge.* We employed various measures of financial market knowledge. Scales were developed to capture both theoretical and practical dimensions of financial market knowledge, although practical knowledge measurement was favored. We did so because intimidation is likely to disproportionately affect practical financial market knowledge development. Intimidated students must still attend required classes that might expose them to theoretical market knowledge, but they might shun activities outside of class that would provide them with practical knowledge, such as participating in financial markets on their own. Such practical knowledge is commonly not developed in the classroom (Sherwood, 2004).

Four scales were developed to measure financial market knowledge. One scale asked respondents to rate familiarity (1 = *not familiar at all*, 5 = *very familiar*) to 16 market terms, such as price-to-earnings ratio and volatility. Familiarity with terms constitutes a fundamental level of understanding upon which more sophisticated knowledge can be built (Bloom, Englehart, Furst, Hill, & Krathwohl, 1956). Responses to the 16 items were summed to reflect a familiarity score for each individual. Mean response was about 37 out of 80 possible points (46%) and ranged from 16 to 69.

Another scale reflected understanding of market terms. Using a multiple-choice format, respondents matched terms with definitions for 14 items rep-

**TABLE 1. Demographic Breakdown of Respondents in Numbers and Percentages**

Variable	<i>n</i>	%
Age		
≤ 19	10	6.5
20–24	110	71.4
25–29	17	11.0
30–34	6	3.9
35–39	2	1.3
≥ 40	9	5.8
Total	154	
Grade level		
Freshmen	2	1.3
Sophomore	32	20.6
Junior	60	38.7
Senior	58	37.4
Graduate	3	1.9
Total	155	
Gender		
Men	81	51.6
Women	76	48.4
Total	157	
Major		
Accounting	7	4.5
Business Administration	15	9.7
Economics	4	2.6
Finance	24	15.6
Information Systems	6	3.9
Management	48	31.2
Marketing	12	7.8
Sports Business	3	1.9
Undecided	3	1.9
Other	32	20.8
Total	154	

**TABLE 2. Mean, Standard Deviations, and Bivariate Correlations of Study Variables**

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12
Age	23.32	6.889												
Gender	.48	.501	-.02											
Grade level	3.14	.895	.18*	-.08										
Grade point average	2.98	.510	.05	.26**	-.08									
Hardiness	3.33	.789	.04	.14*	.07	-.18*								
Class count	3.55	3.463	.15+	-.16*	.32***	-.04	-.01							
Experience	3.68	.905	.14+	-.25**	.12	-.06	.11	.26***						
Intimidation	2.54	.860	-.03	.20*	-.17*	.06	-.16*	-.06	-.39***					
Interest	4.01	.719	.16+	-.30***	.05	.05	.26***	.17*	.38***	-.38***				
Awareness	2.60	.875	.01	-.32***	.21**	-.11	.11	.32***	.60***	-.63***	.36***			
Familiar	37.10	12.634	.21**	-.29***	.16*	-.05	.14+	.50***	.51***	-.37***	.39***	.60***		
Definitions	6.14	2.129	.16+	-.12	.05	.11	.01	.30***	.28***	-.33***	.22**	.39***	.34***	
Context	2.78	2.796	.07	.36	.03	.02	.13+	.28***	.42***	-.29***	.30***	.48***	.53***	.41***

+*p* < .10. \**p* > .05. \*\**p* < .01. \*\*\**p* < .001.

resenting market terms, such as the Dow Jones Industrial Average and bearish market behavior. We added responses to reflect each individual’s definition score. Mean response was 6.1 out of 14 possible correct answers (44%) and ranged from 0 to 11.

A third scale reflected understanding of current market context. Grasp of environmental context is an important element of cognition and decision making (Bandura, 1986; Bazerman & Tenbrunsel, 1998). As such, an 18-item scale sought to assess student understanding of contextual factors such as current price levels and trends of various asset classes. We added responses to represent each individual’s score of market condition understanding. Mean response was a low 2.7 out of 18 possible correct answers (16%) and ranged from 0–14.

The three knowledge scales were developed with the assistance of a group of five financial industry professionals. These practitioners contributed and edited questions and answers in each section. On the basis of their experience, they confirmed that the items in each section adequately reflected the domain of practical knowledge being measured. The contribution of these professionals helped establish face validity of the knowledge scales.

A final scale captured student self-assessment of market awareness. Similar in style to the intimidation and interest scales noted above, 10 items composed

this scale (e.g., “I have a good grasp of financial market conditions.”). Similar to the scales mentioned (1 = *strongly disagree*, 5 = *strongly agree*), a coefficient alpha of .96 suggested high interitem reliability. For each student, responses to individual items were combined into an average score. Overall mean for the interest scale was 2.60, suggesting a somewhat low level of self-reported market awareness among the students in this study.

To further assess validity of the three perceptual measures developed for this study, factor analysis using principal components analysis and Varimax rotation was conducted on the 28 items linked to the latent factors of intimidation, interest, and market awareness. Table 3 displays the rotated factor solution. Cumulative variance extracted was 73.0%. We deleted all factor loadings below the .412 critical level suggested by Stevens (2002) for a sample size of 157 from the table. The rotated factor solution indicated three factors as anticipated. Items generally loaded strongly on the appropriate factor. Only one item displayed significant cross loading (Aware5). We kept this item to maintain content validity of the market awareness scale. Overall, these findings suggest scales with acceptable validity.

*Control Variables*

*Age.* Because market intimidation, interest, and awareness might vary with age, respondents indicated their

age on the questionnaire. The average age was 23.3.

*Gender.* Response to market threat may depend on gender, as suggested by research on risk taking and financial decision making (e.g., Barber & Odean, 2000; Byrnes & Miller, 1999). Therefore, we controlled for gender of the respondent (0 = male; 1 = female).

*Grade level and major.* We obtained class standing (1 = freshman; 4 = senior) and major for each respondent. As noted in Table 1, finance and management majors composed about 46% of the sample.

*Grade point average (GPA).* GPA is often viewed as a measure of innate ability and has been found to be related to performance in some business school contexts (e.g., Wright & Palmer, 1994). We controlled for each participant’s cumulative GPA at the time of the investigation.

*Psychological hardiness.* Attitudes of commitment, control, and challenge are thought to influence how individuals cope with stressful situations (Maddi, 1999). Students possessing such hardy attitudes might be less intimidated by financial market threats. To control for this influence, we used a modified, six-item (e.g., “I find most of my academic work exciting.”) version of the psychological hardiness scale developed by Cole, Field, and Harris (2004). The

coefficient alpha for this scale (1 = *strongly disagree*, 5 = *strongly agree*) was .90.

*Experience.* Deep-seated intelligence is often grounded in experience (Leonard & Swap, 2005; Simon, 1987). Moreover, individuals with more financial experience might perceive market threats as more controllable and thus less intimidating. Because attitudes and perceptions might be shaped by both academic and practical experience, we developed measures for each. Respondents reported the number of college-level finance and economics classes they had completed or were in the process of completing. On average, students claimed about 3.5 classes worth of academic financial experience. Respondents also completed a four-item scale meant to reflect the extent of their practical experience with financial markets (e.g., "I've invested money in financial markets before."). The coefficient alpha for this scale (1 = *strongly disagree*, 5 = *strongly agree*) was .72. For each student, we combined responses to the individual items into an average score. Overall mean response was 3.68, suggesting a fair amount of self-reported practical financial experience among the students in our sample.

## RESULTS

We conducted a multivariate regression analysis to assess the effect of intimidation on student financial market knowledge. The four regression models in Table 4 employ different measures of knowledge as the dependent variable. Model 1 uses the perceptual measure of market awareness; Model 2 uses the familiarity with market terms measure; Model 3 uses the market definitions measure; and Model 4 uses the market context measure.

The beta coefficient for intimidation was negative in each model. The strength of the relationship ranged from highly significant in Model 1 ( $\beta = -.453$ ,  $p = .000$ ) to marginally significant in Model 4 ( $\beta = -.125$ ,  $p = .117$ ). These models explained large percentages of variation; the adjusted  $R^2$  ranged from .193 to .584.  $F$  tests indicated high significance of each model

**TABLE 3. Rotated Factor Matrix From 28-Item Factor Analysis on Market Perception Scales**

Item	Factor		
	1	2	3
Intimidate1		0.698	
Intimidate2		0.744	
Intimidate3		0.722	
Intimidate4		0.445	
Intimidate5		0.785	
Intimidate6		0.828	
Intimidate7		0.799	
Intimidate8		0.820	
Intimidate9		0.855	
Intimidate10		0.823	
Interest1			0.858
Interest2			0.882
Interest3			0.729
Interest4			0.700
Interest5			0.684
Interest6			0.866
Interest7			0.879
Interest8			0.703
Aware1	0.808		
Aware2	0.834		
Aware3	0.868		
Aware4	0.834		
Aware5	0.580	-0.471	
Aware6	0.831		
Aware7	0.882		
Aware8	0.862		
Aware9	0.864		
Aware10	0.865		

Note. Cumulative variance extracted = 73.0%

**TABLE 4. Regression Analysis Using Various Measures of Market Knowledge as Dependent Variable (Standard Beta Coefficients)**

Variable	Model			
	1	2	3	4
Age	-.090 <sup>+</sup>	.105 <sup>+</sup>	.103	.006
Gender	-.109 <sup>+</sup>	-.119 <sup>+</sup>	-.030	-.286 <sup>***</sup>
Class standing	.030	-.099	-.096	-.125 <sup>+</sup>
Grade point average	-.024	-.017	.155 <sup>*</sup>	.092
Psychological hardiness	.016	.082	-.074	.112
Economics and finance class count	.189 <sup>**</sup>	.401 <sup>***</sup>	.267 <sup>**</sup>	.214 <sup>**</sup>
Practical experience	.355 <sup>***</sup>	.274 <sup>**</sup>	.089	.252 <sup>**</sup>
Interest	-.003	.096	.016	.010
Intimidation	-.453 <sup>***</sup>	-.166 <sup>*</sup>	-.304 <sup>***</sup>	-.125
$R^2$	.607	.498	.240	.322
Adjusted $R^2$	.584	.467	.193	.280
$F(9, 145)$	25.000 <sup>***</sup>	16.000 <sup>***</sup>	5.090 <sup>***</sup>	7.640 <sup>***</sup>

<sup>+</sup> $p < .10$ . <sup>\*</sup> $p < .05$ . <sup>\*\*</sup> $p < .01$ . <sup>\*\*\*</sup> $p < .001$ .

( $p = .000$ ). Overall, these results provide strong support for the negative relationship between intimidation and market knowledge in  $H_1$ .

Variables related to experience were also found significant in the analysis. The relationship between class count and market knowledge was positive and significant across all models. Although this finding suggested the value of classroom experience in developing market knowledge, it may also have reflected the influence of being a finance major. Finance majors averaged twice the number of finance and economics classes of nonfinance majors (6.3 to 3.0). Indeed, a multiple analysis of variance (MANOVA) using the four measures of market knowledge as dependent variables and finance or nonfinance major as a fixed factor independent variable was highly significant, Wilks's Lambda = .794,  $F(4, 152) = 9.84, p = .000$ .

The significance of gender was also noteworthy. The beta coefficient for gender was significantly negative in three of the four models in Table 4, suggesting that female students possessed lower levels of market knowledge than did their male colleagues after we accounted for other variables such as experience, intimidation, and interest. These findings appear to confirm gender-based differences in financial literacy among college students noted elsewhere (e.g., Chen & Volpe, 2002).

The curious nonperformer in these models was interest. Because interest has historically been tied to motivation and learning (Steinmetz & Patten, 1967), it was somewhat surprising that interest was not found significantly related to market knowledge in Table 4. The high correlation between interest and intimidation ( $R = -.38, p < .001$ ) likely played a role in the apparent non-significance of market interest. The influence of shared variance can sometimes be observed by reversing the order of variable entry into the regression model (Stevens, 2002). Reversing the entry order of interest and intimidation in the models, however, did not materially alter the results.

To further investigate the relationship between intimidation and interest, hier-

archical regression analysis was performed using interest as the dependent variable. As shown in Table 5, three models portray the effect of progressively adding the control variables, the experience variables, and the intimidation and interest variables. A number of variables are found significant in the final model including intimidation ( $\beta = -.238, p = .002$ ). Experience and hardiness were found positively related to interest whereas gender was negatively related. The final model was highly significant,  $F(8, 146) = 8.63, p = .000$ , with considerable amount of variance explained ( $R^2 = .284$ ). The significant negative relationship between intimidation and interest observed in this analysis supports  $H_2$ .

## DISCUSSION

In this study, we introduced the role of intimidation in shaping college student cognition about financial markets. We found intimidation to be negatively associated with both knowledge of and interest in financial markets, suggesting the unproductive impact of this construct on learning. The primary contribution of this study is the finding of a negative relationship between intimidation and market-related cognitions and attitudes among college students.

In reality, the relationship between

market intimidation, interest, and knowledge is probably more dynamic than portrayed in this article. Learning in social settings is often highly iterative (Bandura, 1986). For example, the negative drag of intimidation on financial market interest and knowledge development may loop back to amplify learning disabilities in future cycles. Future research might incorporate system dynamics methods (e.g., Sterman, 2000) because such approaches are often useful in discovering relationships in process-oriented theories (Pettigrew, 1997). Moreover, the convenience nature of our undergraduate student sample limits the generalizability of our findings. In addition to a broader within-college sample, cross-university sample designs could be considered in future work, as well as the inclusion of graduate students and practitioners.

Ways to quell the negative effects of intimidation on financial market learning are of interest to both research and practice. One approach might involve reducing the level of perceived threat emanating from financial markets because threatening situations can foster feelings of intimidation (Seabrook, 2004). However, reducing perception of market threat by decreasing a student's sense that markets are a potential source of capital loss may be unwise. Ignorance of risk may lead to overconfi-

**TABLE 5. Hierarchical Regression Analysis Using Market Interest as Dependent Variable (Standardized Beta Coefficients)**

Variable	Model		
	1	2	3
Age	.133 <sup>+</sup>	.098	.106
Gender	-.350 <sup>***</sup>	-.278 <sup>***</sup>	-.248 <sup>**</sup>
Class standing	.000	-.039	-.069
Grade point average	.082	.089	.091
Psychological hardiness	.296 <sup>***</sup>	.260 <sup>***</sup>	.229 <sup>**</sup>
Economics and finance class count		.061	.080
Practical experience		.261 <sup>**</sup>	.176 <sup>*</sup>
Intimidation			-.238 <sup>**</sup>
$R^2$	.206	.276	.321
Adjusted $R^2$	.179	.242	.284
$\Delta$ Adjusted $R^2$		.063	.042
$F$	7.730 <sup>***</sup>	8.010 <sup>***</sup>	8.630 <sup>***</sup>
$df$	(5, 149)	(7, 147)	(8, 146)

<sup>+</sup> $p < .10$ . <sup>\*</sup> $p < .05$ . <sup>\*\*</sup> $p < .01$ . <sup>\*\*\*</sup> $p < .001$ .

dence in one's market abilities and, ultimately, to painful economic consequences (Daniel et al., 1998; Stone, 1994). More leverage may be gained by introducing factors to increase market interest and market exposure. Increasing student interest or exposure could add momentum to the central learning cycle and counter the drag on learning induced by intimidation. Resulting higher levels of market knowledge and skill might counter the intimidation response in future learning cycles.

A number of approaches could be incorporated in finance programs to increase student exposure to financial markets. Reading financial periodicals (e.g., Moy, 1995) and, more recently, games and simulations (e.g., Ball & Holt, 1998) and investment clubs (Grinder, Cooper, & Britt, 1999) offer plausible means for providing students with more exposure to market environments. Programs in which novices learn vicariously under the guided pace of model instructors might also prove effective (Manz & Sims, 1981). Vicarious learning processes are particularly effective for developing deep-seated intelligence when the knowledge to be transferred is largely tacit (Leonard & Swap, 2005)—such as the complex knowledge necessary to make decisions in many financial contexts. With the wealth of market commentary available on the Internet, it may be possible to expose students to such expertise through online channels. Indeed, exploring the potential of Web-based vicarious learning for developing market awareness among college students is worthy of future research.

In this study, we have demonstrated the negative effects of perceived intimidation on student cognitive development about financial markets. Pedagogical approaches that expose students to market contexts and to financial decision-making processes merit further attention. If effective in developing market awareness and decision-making skill, then such approaches should help counter the negative effects of intimidation on learning.

#### NOTE

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#### REFERENCES

- Ball, S. B., & Holt, C. A. (1998). Speculation and bubbles in an asset market. *Journal of Economic Perspectives*, 12(1), 207–218.
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.
- Barber, B., & Odean, T. (2000). Boys will be boys: Gender, overconfidence and common stock investments. *Quarterly Journal of Economics*, 116, 261–292.
- Bazerman, M. H., & Tenbrunsel, A. (1998). The role of social context and decisions: Integrating social cognition and behavioral decision-making. *Basic and Applied Social Psychology*, 20(1), 87–91.
- Becker, W. E., Jr., & Walstad, W. B. (1987). *Economic modeling in economic education research*. Boston: Kluwer.
- Black, F., & Scholes, M. (1972). The valuation of option contracts and a test of market efficiency. *Journal of Finance*, 27, 399–417.
- Bloom, B. S., Englehart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). *Taxonomy of educational objectives. Handbook I: Cognitive domain*. New York: David McKay.
- Byrnes, J. P., & Miller, D. C. (1999). Gender differences in risk taking: A meta analysis. *Psychological Bulletin*, 125, 367–383.
- Chattopadhyay, P., Glick, W. H., & Huber, G. P. (2001). Organizational actions in response to threats and opportunities. *Academy of Management Journal*, 44, 937–955.
- Chen, H., & Volpe, R. P. (2002). Gender differences in personal financial literacy among college students. *Financial Services Review*, 11, 289–307.
- Chiesi, H. L., Spillich, G. J., & Voss, J. F. (1979). Acquisition of domain-related information in relation to high and low domain knowledge. *Journal of Verbal Learning and Verbal Behavior*, 18, 257–273.
- Cole, M. S., Field, H. S., & Harris, S. G. (2004). Student learning, motivation and psychological hardness: Interactive effects on student's reactions to a management class. *Academy of Management Learning & Education*, 3, 64–85.
- Daft, R. L., & Weick, K. E. (1984). Toward a model of organizations as interpretation systems. *Academy of Management Review*, 9, 284–296.
- Daniel, K., Hirshliefer, D., & Subrahmanyam, A. (1998). Investor psychology and security market under- and overperformance. *Journal of Finance*, 53, 1839–1885.
- Dutton, J., & Jackson, S. (1987). Categorizing strategic issues: Links to organizational action. *Academy of Management Review*, 12, 76–90.
- Fama, E. F. (1970). Efficient capital markets: A review of theory and empirical work. *Journal of Finance*, 25, 383–417.
- Grinder, B., Cooper, D. W., & Britt, M. (1999). An integrative approach to using student investment clubs and student investment funds in the finance curriculum. *Financial Services Review*, 8, 211–221.
- Jackson, S. E., & Dutton, J. E. (1988). Discerning threats and opportunities. *Administrative Science Quarterly*, 33, 370–387.
- Kahneman, D., & Tversky, A. (1979). An analysis of decision under risk. *Econometrica*, 47, 263–292.
- Krapp, A., & Renninger, K. A. (1992). Interest, learning and development. In A. Renninger, S. Hildi, & A. Krapp (Eds.), *Interest in learning and development* (pp. 3–25). Hillsdale, NY: Erlbaum.
- Krishnan, V. S., Bathala, C., Bhattacha, T. K., & Ritchey, R. (1999). Teaching the introductory finance course: What can we learn from student perceptions and expectations? *Financial Practice and Education*, 9(1), 70–82.
- Lazarus, R. S. (1966). *Psychological stress and the coping process*. New York: McGraw-Hill.
- Leonard, D., & Swap, W. (2005). *Deep smarts: How to cultivate and transfer enduring business wisdom*. Boston: Harvard Business School Press.
- Lim, P. (2004). *Money mistakes you can't afford to make: How to solve common problems and improve your personal finances*. New York: McGraw-Hill.
- Maddi, S. R. (1999). The personality construct of hardness: I. Effects of experiencing, coping, and strain. *Consulting Psychology Journal: Practice and Research*, 51, 83–94.
- Manz, C. C., & Sims, H. P., Jr. (1981). Vicarious learning: The influence of modeling on organizational behavior. *Academy of Management Review*, 6, 105–113.
- Mone, M., McKinley, W., & Barker, V. (1998). Organizational decline and innovation: A contingency framework. *Academy of Management Review*, 23, 115–132.
- Moy, R. L. (1995). Using the Wall Street Journal in economics and finance classes: A survey and suggestions. *Journal of Education for Business*, 70, 146–150.
- Newhagen, J. E. (1998). TV news images that induce anger, fear, and disgust: Effects on approach-avoidance and memory. *Journal of Broadcasting & Electronic Media*, 42, 265–276.
- Ocasio, W. (1995). The enactment of economic diversity: A reconciliation of theories of failure-induced change and threat rigidity. In L. L. Cummins & B. W. Staw (Eds.), *Research in organizational behavior* (Vol. 17, pp. 287–331). Greenwich, CT: JAI Press.
- Pettigrew, A. (1997). What is processual analysis? *Scandinavian Journal of Management*, 13, 337–348.
- Phipps, B. J., & Clark, J. E. (1993). Attitudes toward economics: Uni- or multidimensional? *Journal of Economic Education*, 24, 195–212.
- Pritchard, R. E., Potter, S. C., & Saccucci, M. S. (2004). The selection of a business major: Elements influencing student choice and implications for outcomes assessment. *Journal of Education for Business*, 79, 152–156.
- Schein, E. H. (1985). How can organizations learn faster? The challenge of entering the greenroom. *Sloan Management Review*, 34(2), 85–92.
- Schwager, J. D. (1989). *Market wizards*. New York: Harper Collins.
- Seabrook, M. (2004). Intimidation in medical education: Students' and teachers' perspectives. *Studies in Higher Education*, 29(1), 59–74.
- Sharpe, W. F. (1964). Capital asset prices: A theory of market equilibrium and conditions of risk. *Journal of Finance*, 19, 425–442.
- Sherwood, A. L. (2004). Problem-based learning in management education: A framework for designing context. *Journal of Management Education*, 28, 536–557.
- Shields, E. W., Jr. (1999). Intimidation and violence by males in high school athletics. *Adolescence*, 34, 503–521.
- Simon, H. A. (1987). Making management decisions: The role of intuition and emotion. *Academy of Management Executive*, 1(1), 57–64.
- Soper, J. C., & Walstad, W. B. (1983). On mea-

suring economic attitudes. *Journal of Economic Education*, 14, 4–17.

Soros, G. (1987). *The alchemy of finance: Reading the mind of the market*. New York: Simon & Schuster.

Staw, B. M., Sandelands, W. E., & Dutton, J. E. (1981). Threat-rigidity effects in organizational behavior: A multilevel analysis. *Administrative Science Quarterly*, 26, 501–524.

Steinhardt, M. (2001). *No bull: My life in and out of the markets*. New York: Wiley.

Steinmetz, L. L., & Patten, R. J. (1967). Enthusiasm, interest and learning: The results of game training. *Training & Development*, 21(4), 26–33.

Sterman, J. D. (2000). *Business dynamics: Systems thinking and modeling for a complex world*. Boston: Irwin/McGraw-Hill.

Stevens, J. P. (2002). *Applied multivariate statistics for the social sciences* (4th ed.). Mahwah, NJ: Erlbaum.

Stone, D. N. (1994). Overconfidence in initial self-efficacy judgements: Effects on decision processes and performance. *Organization Behavior and Human Decision Processes*, 59, 452–474.

Thompson, J. D. (1967). *Organizations in action*. New York: McGraw-Hill.

Unger, W., Evans, I. M., Rourke, P., & Levis, D. J. (2003). The S-S construct of expectancy versus

the S-R construct of fear: Which motivates the acquisition of avoidance behavior? *The Journal of General Psychology*, 130, 131–147.

Vallerand, R. J., & Reid, G. (1984). On the causal effects of perceived competence on intrinsic motivation: A test of cognitive evaluation theory. *Journal of Sport Psychology*, 6, 94–102.

Wood, R., & Zaichkowsky, J. L. (2004). Attitudes and trading behavior of stock market investors: A segmentation approach. *Journal of Behavioral Finance*, 5, 170–179.

Wright, R. E., & Palmer, J. C. (1994). GMAT scores and undergraduate GPAs as predictors of performance in graduate business schools. *Journal of Education for Business*, 69, 344–348.

**APPENDIX**  
**Summary of Item Scales in Questionnaire and Related Alphas**

Item	$\alpha$	Correct answer
Demographics		
Age		
Gender		
Class		
Major		
Perceptions about markets (1 = <i>strongly disagree</i> , 5 = <i>strongly agree</i> )		
Intimidation	.93	
To me, financial markets are threatening.		
I find financial markets intimidating.		
I feel threatened by financial markets.		
I am at ease being involved in financial markets (R)		
Involvement in financial markets is something I fear.		
Financial markets intimidate me.		
Participating in financial markets makes me nervous.		
I feel intimidated by financial markets.		
Taking part in financial markets is a scary prospect to me.		
Financial markets make me feel uneasy.		
Market interest	.87	
I have interest in how markets work.		
I am curious about financial markets.		
Financial markets appeal to me.		
I find the workings of financial markets intriguing.		
I have no interest in the workings of financial markets. (R)		
Financial markets are something I would like to learn more about.		
I am interested in learning how financial markets work.		
Financial markets fascinate me.		
Market awareness	.96	
I understand the financial market environment.		
Financial markets are something I know about.		
I have a good grasp of financial market conditions.		
I am aware of current financial market conditions.		
I know what is going on in financial markets.		
I have a good awareness of what is going on in financial markets.		
The current market environment is something I understand.		
I am aware of what is happening in financial markets.		
Psychological hardiness (1 = <i>strongly disagree</i> , 5 = <i>strongly agree</i> )	.90	
I find most of my academic work exciting.		
Most days, school is really interesting to me.		
I really look forward to most things at school.		
I often wake up eager to get back to my school work.		
I understand why people get excited about their school courses.		
I enjoy the challenge of learning new material in my courses.		
Classroom and Practical Financial Experience		
Classroom financial experience		
Number of college level economics classes completed or in process of completing.		
Number of college level finance classes completed or in process of completing.		

(continues)

**APPENDIX—Continued**

Item	$\alpha$	Correct answer
Practical financial experience (1 = <i>strongly disagree</i> , 5 = <i>strongly agree</i> )	.72	
I have made financial decisions in the past.		
I have experience in the financial markets.		
When it comes to my personal finances, I make the decisions.		
I have invested money in financial markets before.		
Market Awareness		
Familiarity (1 = <i>not familiar at all</i> , 5 = <i>very familiar</i> )		
Price-to-earnings ratio		
Downtrend		
Bond spreads		
Liquidity		
DXY		
Volatility		
Head and shoulders pattern		
Breakout pattern		
Junk bonds		
Resistance		
Standard & Poor's 500		
Producer price index		
Earnings per share		
Alan Greenspan		
Bullish sentiment		
Put to call ratio		
Market term and definitions		
The Dow Jones Industrial Average is an example of a:		market index
Graphing a security's price history in an attempt to identify trends is an example of:		technical analysis
Lowering the cost of borrowing during times of market crisis is an example of:		providing liquidity
Buying a security in anticipation that its price will increase is an example of:		bullish behavior
The central bank of the United States is called the:		Federal Reserve
A price level thought to make it difficult for a security to trade lower is called:		support
The value by which a commodity can be settled in cash immediately is called the:		spot price
Selling a security in anticipation that its price will decrease is an example of:		bearish behavior
Determining whether a company's earnings will increase in the future is often part of:		fundamental analysis
A call option is one example of a:		derivative
When the price of an interest-bearing bond increases, the effective yield of the bond:		decreases
A market situation where participants want to sell at any price is known as:		capitulation
A reduction in the purchasing power of a currency is an example of:		inflation
Stocks are often referred to as _____ whereas bonds are often referred to as _____.		equities; fixed income
Current market context*		
Current value of the Dow Jones Industrial Average is between:		10,000–12,000
Current value of the S&P 500 Index is between:		1000–1500
Current value of the NASDAQ Composite is between:		1900–2400
Current yield on 10 yr US Treasury Bond is between:		3%–5%
Owners of the most (by value) U.S. Treasury bonds are currently:		Governments of Japan and China
Compared to 12 months ago, the average interest rate on a 30 yr fixed rate mortgage is:		
(NOTE: bps = basis pts; 100 bps = 1%)		
Compared to 12 months ago, 10 yr U.S. Treasury bond prices are:		Within 75 bps of same value
Compared to 5 yrs (60 months) ago, the current value of the S&P 500 Index is:		Within 15% of same value
Compared to 6 months ago, the value of the S&P 500 Index is:		More than 10% lower
Compared to 24 months ago, the value of the Commodity Research Bureau Index (CRB) is:		More than 5% higher
Current spot price of a barrel of crude oil is between:		More than 10% higher
Current spot price of an ounce of gold is between:		\$40–\$55
Current Federal Funds Rate set by the Federal Reserve is between:		\$400–\$450
Compared to 24 months ago, the value of the U.S. dollar against a basket of major foreign currencies is:		2–3%
Current values of stock market implied volatility (e.g., VIX) suggest that concern about a sudden large move in price is:		Significantly lower
Current spreads between 10-yr Treasury and low quality corporate bonds suggest:		Relatively low
Compared to a 50-yr long term average (LTA), the current price to earnings ratio (trailing 12 month) of S&P 500 index is:		Significant desire for riskier bonds
Compared to a 50-yr long term average (LTA), the ratio of current total stock market value to GDP is:		More than 10% above LTA
		More than 10% above LTA

Note. R = reverse-scored. Correct answers at time questionnaire was administered.

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